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2007
PUBLIC BUILDINGS

A SURVEY OF

ARCHITECTURE

OF

PROJECTS CONSTRUCTED BY FEDERAL AND OTHER GOVERNMENTAL BODIES BETWEEN THE YEARS 1933 AND 1939

WITH THE ASSISTANCE OF THE PUBLIC WORKS ADMINISTRATION

BY

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1939
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PREFACE

The information in this book is based on a report made for the President in May 1939 by the "Committee on Architectural Surveys." The report was called "Survey of the Architecture of Completed Projects of the Public Works Administration." The Committee consisted of the two authors of this book, who were appointed by the then Administrator of the Federal Emergency Administration of Public Works and by the then Director of Procurement of the Treasury Department. Since the report was compiled, the Public Works Administration and the Public Buildings Branch of the Procurement Division were transferred to the Federal Works Agency, on July 1, 1939, together with the Works Progress Administration, the Public Roads Administration, and the United States Housing Authority, in accordance with the reorganization plan of President Franklin D. Roosevelt.

In order to obtain the best and most representative selection of projects for that Survey, a Selection Committee was formed consisting of four architects, three being in the Government and one who was brought in from private practice for this purpose. The exact information about each Non-federal project was obtained from the records by representatives brought in from each of the Regional Offices of the P. W. A. The information about Federal projects was obtained by direct contact with the departments, bureaus, and agencies of the Federal Government.

The opinions expressed in this volume are those of the authors only.
CHAPTER I

INTRODUCTION

Men build temples to the things they love. During the 10 years of post-war boom the finest buildings in this country were being constructed to serve business and commercial interests. Today, on the other hand, we are watching structures being erected everywhere to fit the needs of humanity in general. Hospitals are being built, floods are being controlled, new and humane prisons and asylums are replacing the old which were intended merely as places of confinement and not education, slums are being cleaned up, and in all building, as in town planning, sanitary and healthful conditions of life are being stressed.

For the first time the people have been building public works in unison, bettering the living conditions of all men. This change is partly due to the years of financial depression and unemployment following 1929, when it became necessary for the Federal Government to assist the States and other public bodies by providing financial aid for the construction of necessary public works and thereby affording employment in the building industry.

The greater part of work constructed during the past 6 years by public bodies, such as towns, cities, counties, and States and by the various Federal departments, was financed with the assistance of the Federal Government. As the information concerning such a vast number of public buildings has been brought together, by P. W. A., for the first time in one place, it has now become possible to review the architecture of a great number of public buildings in all parts of the country over a considerable period of time. Comparisons of design in style and planning, of the trends of design in the different sections of the country, and the varied developments which have been made in construction are all to be studied. The numerous interesting architectural and engineering features and details of such structures are available on a comparative basis. As a result of this situation, this book is written to make available to the public the general information and some examples of the work that has been done during this period and to serve as a reference book for architects, engineers, students, school bodies, and others interested in architectural design.

Architecture like all art is never static but is undergoing a continual process of change. This change is due not only to the developments of new needs, new materials, and new methods of construction but also to the desire, inherent in successive generations of man, to produce something better and different from that accomplished by the preceding generations, something which will outlast the short span of a lifetime and will remain as monuments for the generations to come. This desire for change, however, is offset and balanced to a great extent by an equally human desire to preserve tradition. Today architecture in the United States is passing through a period of transition from eclectic design to something new and different, thus creating a condition which has much in common with that which existed in Italy in the fifteenth century when the architecture of the Middle Ages was changing to that of the Renaissance. Today, as then, changes in the character and style of architectural design occur slowly and constitute an evolution rather than a revolution.

In this book the term "architecture" is used in its broad sense to include not only plan and design, but proper use of materials, good construction, cost, the relationship to location, climate, site, to other structures and to a city or town plan, and includes, as well, the adaptation of a given structure to social and humanitarian needs and its success in the protection against hazards to life and health, such as fire, earthquake, and lack of sanitation. Such work may have been designed by an engineer or an architect.

In this discussion, for the purpose of comparison and not for the purpose of definition, we use the word "modern" as describing the evolving style of the present time which is based on evolutions from other styles of architecture and on the changes that have developed in needs, requirements, and construction. It does not apply to those designs which are not based on such evolutions and developments, but, on the contrary, are based chiefly on decoration or those which are an attempt to create something entirely new for present needs without regard to anything that has gone before, which for the purpose of clarification, we might call "modernistic design."

In the projects selected for this publication we have attempted to show some of the best examples of the different types of buildings and other structures which are the most interesting from architectural and engineering viewpoints. Size and cost have not been criterions in choosing these examples. The smallest sewage-disposal plant is given equal standing with the greatest power projects, and many very expensive buildings have been omitted altogether as having little or no architectural merit. Bridges, dams, and well designed landscaping are all included. Many projects contain more than one building. For example, some university projects include auditoriums, gymnasiums, libraries, dormitories, administrative buildings, and structures of other natures. Projects which were primarily for provision of electric power, gas, water, and sewage disposal, often
included many small as well as large buildings. Every State in the Union is represented, thus adding to the value of comparisons.

The projects illustrated were completed or substantially completed by January 1, 1939, and do not include any of those financed from the Congressional appropriation of 1938. The 1938 program is not included herein because at the time this study began, only a few of those projects were completed. The construction of P. W. A. projects began soon after the N. I. R. Act in 1933 and has continued through the various subsequent Congressional appropriations in 1935, in 1936, in 1937, and in 1938. Some of the projects such as the large conservation dams, are still under construction at this time.

The extent to which public works were constructed during the 6 years prior to 1939 may be seen from the fact that up to January 1, 1938, allotments were made by the P. W. A. for 15,976 Federal and 10,498 Non-federal projects, a total of 26,474 projects, of which 8,259 were for building projects only. Approximately 17,300 buildings were erected, of which 2,200 were accessory to projects for sewers, gas, power, and water supply. The buildings or structures illustrated herein represent 620 selected projects. As of October 1, 1939, 7,993 additional projects, including 10,350 buildings, have been completed or are under construction under the 1938 appropriation of Congress.

The allotments were divided into two classes. One consisted of Federal projects which, with very few exceptions, had been planned and designed by architectural and engineering organizations of the various departments of the Federal Government; the other consisted of Non-federal projects which had been planned and designed by architects and engineers in private practice, employed by the owners.

The outstanding accomplishments in planning of both Federal and Non-federal buildings are the elimination of waste space, economy in cost, and proper consideration of light, ventilation, and sanitation; while in design, careful study of line, scale, and proportion, greater simplicity and an extremely sparing use of ornament, and a skillful and effective handling of materials, are noteworthy characteristics.

The architectural quality of the Federal projects is far better than that of the buildings constructed by the Federal Government during the two previous decades. Many of the post offices and courthouses and other buildings designed by the Public Buildings Branch of the Procurement Division of the Treasury Department (now the Public Buildings Administration of the Federal Works Agency) have a high degree of architectural merit. The Navy Department has erected some excellent structures, and the great dams built by the Reclamation Service and the Army engineers are among the finest examples of modern design. The small structures erected by the National Park Service in our national parks have great architectural interest and charm, and many other Federal agencies have contributed much to the advancement of architecture.

Traditional design predominates in Federal work although some trend toward the "modern" may be noted, particularly in the Middle West where the traditions of the architecture of western Europe are not so deeply rooted. Viewed as a whole the average architectural quality of design of the Federal work appears to be higher than the average of the Non-federal. However, there are a greater number of really outstanding examples of architectural design in the Non-federal buildings than can be found in the Federal work.

Traditional and "modern" design are more equally divided in Non-federal work. The trend toward the "modern" is evident throughout the country, but varies, like the Federal work, in the different States. And this variation is in quantity as well as quality, probably due to densities of population, wealth, background and tradition, local pride, culture, and the availability of competent architects and engineers.

The Non-federal projects vary greatly in architectural quality from very good to extremely bad. Many really fine examples of architecture in Non-federal work are distributed throughout the country but the greatest quantity of the best work is to be found in two areas, one of which is California and the other the Atlantic seaboard from Massachusetts to Pennsylvania, inclusive.

The greatest architectural advance has been made in the designing of utilitarian buildings, such as those connected with sewage and garbage-disposal plants and water-supply systems, which in former times were invariably ugly but which in many cases in the past 6 years have become structures of great aesthetic merit. Some of the best architecturally outstanding buildings in all types may be found in California. This is probably a result not only of good designing but also to the great advance made in the use of concrete as a finishing material and, to some extent, to the protective requirements against seismic disturbances. Also, the Triborough Bridge, tunnel approaches, and parkways in New York City; several of the New England schools; the State Prison at Atlanta; several beautiful bridges in Florida; the Exposition Building at Shreveport, Louisiana; several of the courthouses and city halls of Texas and New Mexico; some of the public buildings in Kansas City and St. Louis; the coastal bridges of Oregon, and several schools in Mississippi are all worthy of special note.

The designers of public works during the past 6 years have borrowed much from the general current that is flowing away from traditional design toward something new, but in reviewing their work from a close perspective it seems very evident that they have decidedly contributed to the movement. Where they have designed traditionally there is less copying of old buildings and details than formerly. Retaining the character of a given style, they have instilled new life into it by the use of new materials or new motifs and have thereby given it a freshness which protects it against the charge of being archaeology. Where they have used the "modern" style, the design sometimes shows the influence of the character and style evolved by various living European architects, but in general this is not the case. Most of the architects who have attempted to diverge from tradition seem to have attacked their problems from the point of view first of plan requirements, secondly of construction, and thirdly of type of materials to be used, with the result that in the more successful buildings of this character a style
has emerged that may perhaps be the seed of the long sought "school of American design".

It is a fundamental principle of architecture that the best buildings are always those which are built throughout to comply with the structure best suited to the needs of the project. Excessive ornamentation is not only unnecessary, but in many cases definitely detracts from the aesthetic values of a building. As all building is designed to fulfill human needs, structural requirements may, in the last analysis, be considered to be the human ones. The best designs of public buildings that have been produced in the past 6 years indicates definite efforts to provide structures to fit our present civilization rather than to make our civilization fit into buildings that were designed for other ages.

So it is that this vast building program presents us with a great vision, that of man building primarily for love of and to fulfill the needs of his fellowmen. Perhaps future generations will classify these years as one of the epoch-making periods of advancement in the civilization not only of our own country but also of the human race.
CHAPTER II

SCOPE OF STUDY AND GENERAL DATA

The structures chosen for illustration in this book were selected from over 1,700 projects which were included in the Survey prepared by the Committee on Architectural Surveys mentioned in the preface. The photographs in that Survey were selected from pictures of approximately 1,550 Federal and 5,900 Non-federal projects which had in turn been culled from the great mass of available material on more than 26,000 projects. The work for the Survey necessitated a study of plans and documents, the examination of over 10,000 photographs, and a limited amount of field inspection.

To obtain a general idea of the financial extent to which the P. W. A. assisted in the construction of the enormous number of public buildings erected during the past 6 years, it is necessary to review some items of cost at this time. Detailed statistics are given in Chapter X.

The estimated cost of construction only, of approximately 17,250 buildings erected during this period was:

- On Federal projects (approx.)... $321,289,000
- On Non-federal projects (approx.)... 1,100,070,600

$1,421,359,600

It is to be remembered that some of the buildings have not yet been completed, so the final cost can be estimated only. On all types of projects, prior to the 1938 program, the total funds that will have been provided by the P. W. A. and owners when all the projects are completed will be:

- On Federal projects (approx.)... $1,703,000,000
- On Non-federal projects (approx.)... $2,757,500,000

$4,460,500,000

1 Included in this are $136,667,750 for 51 housing projects.
2 Included in this are $200,974,500 for railway loans.

When all of these projects are completed, P. W. A. will have provided in loans and grants:

- On Federal projects (approx.)... $1,703,000,000
- On Non-federal projects (approx.)... 1,652,775,000

$3,355,775,000

The P. W. A. overhead costs on all projects up to 1939 was $89,144,361. It is difficult to determine what portion of this is applicable to Federal projects, but, assuming we allocate the whole sum to the cost of the Non-federal projects, it is of interest to note that this overhead was only 3.23 percent of the cost of Non-federal projects. The cost of the land, which is also included in the total cost, amounted to approximately $34,000,000 on Non-federal projects, and $25,938,000 on Federal projects.

It must be remembered that there will be no return to the Government on any funds from the Federal allotments except from the revenue-producing projects, such as Boulder Dam, the Bonneville project, Grand Coulee, and projects of the Tennessee Valley Authority. There will be a return on the loans made in Non-federal allotments and the interest accrued on those loans. The time of repayment of loans varied according to the project, the desire of the owners, and the ability of the owners to make payments up to a period of 30 years. The loans were made on a basis to yield 4 percent per annum.

Therefore, if we deduct the interest already earned and the amount of the loans, which would ultimately be repaid in full, from the total funds that will have been provided at completion of the projects by the P. W. A. (including overhead costs), we may obtain an approximate idea of the net cost to the Government of these Non-federal projects:

<table>
<thead>
<tr>
<th>Funds that will have been provided</th>
<th>$1,682,774,300</th>
</tr>
</thead>
<tbody>
<tr>
<td>P. W. A. overhead</td>
<td>89,144,361</td>
</tr>
<tr>
<td>Interest earned</td>
<td>18,278,500</td>
</tr>
<tr>
<td>Allotted loans</td>
<td>789,249,300</td>
</tr>
</tbody>
</table>

803,527,800

Estimated maximum final cost to Government... $938,390,800

It will be seen that the estimated maximum final cost to the Government, which may be assumed as net cost for the purpose of this analysis, is approximately 54 percent of the funds that will have been provided by the Government for these Non-federal projects when they have all been completed.

This does not take into consideration the accruing interest which will be paid up to the time of the expiration of the various loans, which will probably amount to over $2,000,000 and will thereby reduce this net cost to approximately 42 percent of the funds provided.

It is very interesting that the above estimate of the final maximum cost to the Government ($938,390,800) is only 34 percent of the total cost of construction of the Non-federal projects; and when all the interest will have been paid it will probably be less than 26.8 percent.

Until 1938, streets and highways comprised the greatest number of projects, but building projects had the largest total allotments in money. There were 10,808 projects for streets and highways and 8,259 projects for buildings. As has been stated before, there were approximately 17,250 buildings constructed on all the different kinds of projects. (In the 1938 program the projects for buildings were almost twice the number of those for streets and highways.) The amounts of allotments to the different States for all types of projects have followed generally in ratio to the population. Allotments were made to 62 Federal departments, bureaus, and agencies, which are listed in Chapter X under Statistics.
CHAPTER III

POLICIES OF THE P.W.A.

That the lay reader may more clearly understand the operations of the P.W.A. and the extent to which it enters into the construction of a project, it is advisable to review briefly, in general outline, the functions of that organization.

The P.W.A. does not design any buildings or projects. It does not write the specifications or make any drawings. The character of architecture, the materials to be used and the type of construction are left entirely to the private architects and engineers employed by the owners on Non-federal projects and those employed by the Federal agencies on Federal projects. The P.W.A. acts somewhat in the nature of a bank or a large building and loan association.

The engineer sent to a project as an inspector is there for the purpose of seeing that the project is constructed in accordance with the owner's plans and specifications on which the P.W.A. made its grant or its loan and grant. He also ascertains that the policies of the Government, chiefly concerning fair and adequate competition in the purchase of materials and labor, are properly adhered to by the contractors and everyone concerned. He checks the expenditures of funds, because part of those funds are advanced by the Government. He reports only to the P.W.A.

When an owner makes an application for funds to the P.W.A., the application contains the proposed solution of the problem, the estimated cost, a preliminary plan and a brief description of the materials and construction to be used, together with data concerning the financial status of the owner and the legality of the proposed project. The P.W.A. does not undertake at any time to assume any responsibility for, or to make any changes in design or specifications unless it may be obvious that the plans are technically or economically unsound.

The application is examined to judge the usefulness, suitability, necessity, and desirability of the project; the adequacy in scope of the project for the purpose for which it is intended; the reasonableness of cost; and the financial ability of the owner to complete the project and, where a loan is made, if the loan is adequately secured. If the loan is secured by revenue bonds, instead of general obligation bonds, careful examination must be made to ascertain that the project should produce sufficient revenue to secure and pay off the loan within the period for which it is to be made. Also, the general technical soundness is studied to judge whether the project would be properly constructed for the purpose for which it is to be built, if carried out in accordance with the plans and descriptions of the owner.

The working drawings and specifications, which generally are completed after the application has been approved, must be in compliance with local building codes, or with good practice where such codes do not exist. They must make adequate provision for sanitation, light, and air, and for the reduction of fire hazards to buildings and occupants.

The only requirements concerning the architects and engineers selected by the owner are that they must be in good standing, competent for the nature of the work to be constructed, and that the fees to be paid for their services are reasonable in amount.

The Government requires that an award of contract must be made to the lowest responsible bidder on all principal contracts. The bidder must be in good standing and competent. The contracts require that construction be completed within a time limit. No change orders affecting changes in cost may be executed by the owner or contractor without the approval of the P.W.A., as it is financially interested in the cost.

The Government requirements pertaining to materials are very explicit. Both the source of the material and the manufacturer must be in the United States and only by special approval may the raw or finished material be from a foreign source.

The owner may request a loan only, or a loan for any amount up to 55 percent of the total cost of the project plus a grant from the Government of 45 percent of that cost. When the allotment has been made and before contracts are awarded, the owner must deposit in a bank part of its share of the estimated cost of construction, which at completion may not be less than 55 percent of the total cost of the project when the allotment includes a grant of 45 percent.

The total cost of a project is composed of the preliminary costs and costs of land, construction, architect's or engineer's fees, legal fees, interest on loans during construction, and miscellaneous costs.

On Federal projects the allotments made by the P.W.A. are grants up to 100 percent of the estimated cost of the project. Under the N.I.R. Act a very small number of loans were made to semipublic bodies created for the benefit of the public, such as the railroads and limited dividend corporations to construct low-cost housing projects (slum clearance, etc.). This policy was soon changed in the later acts of Congress making appropriations to P.W.A., and all allotments were restricted to recognized public bodies.

VI
Invention follows upon invention in the world today, technical improvement upon technical improvement. Science is reaching out and is touching all walks of life and its transformations occur with almost bewildering rapidity. Humanity is striving to adjust itself to the new methods of living and its faster tempo of life and to gear its economy to the infinitely increased speed of production. These changes have affected the building industry as well as the planning and designing of the architects and engineers. Scientific improvements have been made in the fields of equipment, processes and materials and some of the best of these have been used in the construction of public works.

Improvements in Equipment, Processes, and Materials

In practically all public buildings there has been a great improvement during the past 6 years in plumbing, ventilation, lighting and electrical equipment. Modern sanitary plumbing has been adequately provided; ventilation assured, either direct or mechanical; lighting, both direct and electrical, has been improved and much of the most modern electrical equipment, such as fire-alarm systems, police radio call systems, new locking devices, etc., have come into general use.

Air conditioning, although not yet perfected, has been installed in many schools, courthouses, and other buildings in which public gatherings are held. This treating and cooling of air is a great advance in the art of living and soon it should be more generally used, especially in the hospitals in the South where there is much unnecessary suffering brought about by the heat, when perspiration causes bandages to chafe, and even the touch of a pillow becomes intolerable to a patient; and exhausted doctors and nurses struggle to do their best under a terrific handicap.

Furniture for schools, hospitals, and courthouses has been usually well designed and of the best manufacture, and most of the furniture equipment for all types of buildings has been satisfactory with the exception of prisons where the type of beds provided for prisoners shows little improvement.

All civilizations have realized the value of large and pure water supplies, but never before has water been put to so many varied uses as it is today. Clear and pure supplies of water have been made available to the citizens of most of our urban centers through conservation and water-supply projects, and by the requirements of law. Water has also been harnessed to turn the wheels of great power plants to provide the electricity for many factories and towns. Water is carried over vast tracts of arid desert to create fertile fields out of shifting sand dunes. It seems that we could have no more fitting monuments to our civilization than the great Boulder Dam on the Colorado River between Arizona and Nevada, the Grand Coulee Dam and the Bonneville Dam in Oregon.

The outstanding feature of dam construction during the past 5 years has been the increasing interest in the importance of thorough exploration of foundations by geologists, both below and on the flanks of dams. Diamond drilling is now recognized as a necessary exploration for dams of any great size. Grouting to great depths, where fissures are found in any part of the impounded area, has become common practice.

The practice of grouting concrete to fill possible voids has greatly increased. This is carried out through grout pipes which are introduced into the concrete when it is poured. After it is thoroughly set, grout is driven in under as high a pressure as 1,000 pounds per square inch. On the Boulder Dam the chemical heat of the setting concrete was absorbed by refrigeration, provided by means of pipes run through the concrete. At a slow enough rate of deposit the concrete will cool by conduction and radiation but the Boulder Dam method of refrigeration made possible great speed of construction and saved a year or more of time.

In earth dams "core walls" are being much less used today. Careful classification of materials and greater consolidation are practiced. The spillways are generally of concrete. The use of the "sheep's foot roller" has become much more common and this machine has been greatly increased in size and efficiency. A photograph of one of these rollers at work on the Fork Peck Dam is shown on the left. The "feet"
on the drum, which are about 7 inches long and 3 inches thick, give the greatest compression that can be obtained on the layers of soil under the surface, although the top may remain disturbed. Proper grading of materials and the laying of the central part of the dam in water, using clays for this portion, has become normal construction.

The necessity of providing some means of preventing the silting up of dams is an obstacle in the way of much dam construction. Each dam is a special case and it seems probable that some projects should be delayed until soil conservation has been properly carried out over a considerable area around the dam site.

Water purification has already reached such a peak of perfection that there have been few innovations. Practically all filters are now of the mechanical type, "slow sand" having been given up. Hardness, salinity, and the presence of any elements detrimental to health must be eliminated. For example, it was discovered that much well water, particularly in the West, contains small amounts of the element fluorine which is responsible for decay of children's teeth. Where this condition existed and no other source of water supply was available, families having young children were urged to make use of filters or small distilling equipment adaptable to domestic use in order to provide distilled water. In filtration plants there have been changes in coagulants, the trend being largely toward ferric chloride. This was formerly so costly that other chemicals were generally used even if they were less effective. Many chemicals used in this manner were, however, found to be byproducts of other industries and the price of ferric chloride has therefore been greatly reduced, thereby making it a good competitor of other chemicals. Lime waste from the manufacture of acetylene gas is almost entirely bought up by filtration plants when they are in the same location and this constitutes a substantial economy.

In sewage disposal, chemical precipitation is coming back into more general use due to the progressive cheapening of chemicals. The development of the vacuum filter, which will produce a fairly dry sludge cake, has made possible the economical incineration of sewage sludge, especially as it does not require land for exterior sludge drying. This overcomes the necessity of buying expensive land in cities and eliminates objectionable odors. The installation of these new methods permits the development of the land around the plants into parks. Exterior sludge drying is still generally used where land costs are low and in the smaller plants. In plants where the ultimate in sewage treatment is required, magnetic filters have come into more general use, especially due to the greater ease of cleaning and the smaller space required, than is the case with fine sand in the final treatment of the effluent.

In refuse incinicators the only developments have been the progressively larger sizes of the units and improvements in heat economizers. Power has become, quite generally, a byproduct during most of the year.

The importance of adequate transportation facilities to all the nations is increasing. This country is further ahead in this field than any other country in the world. Our boulevards, ramps, and great scientifically planned highways amaze and attract not only foreign visitors but also us. These vast schemes of road construction are part of the modern idea of the necessity of building for the good of the general public. The medical aid, necessities and luxuries of life can be brought to the majority of the citizens of the land, and the citizens can easily transport themselves or their goods to all sections of the country.

Bridges are integral parts of highway systems. There has been great improvement in design in this field. Most of those built of steel are more beautiful in line and proportion than those constructed before 1933 with the exception of some notable examples such as the George Washington Bridge which spans the Hudson River. Even the steel framing has generally been studied to produce artistic effects in line and in texture, as can be seen in the Triborough Bridge over the East River in New York City. In many cases the bridges have been designed to fit the surrounding scenery, such as those in the public parkways.

One new development in bridge engineering is the use of open-grid flooring (subway grating). This is light and saves weight in the structure and its supports, and eliminates to a large extent the slippery surfaces made by snow and freezing in northern climates. There has been some use made of noncorroding steel alloys, but no general use of such materials in bridge construction.

Due to the wide variety of public-works construction almost every material produced and manufactured in the United States has been used in the construction of these projects and in the mechanical and furniture equipment. Brick, lumber, sand, gravel, and broken stone have usually been obtained in the vicinity of a project, while cut stone, lumber, wood trim, steel, metals, cement, plaster, plumbing and electrical supplies, marble, tile, equipment, furniture, etc., frequently have had to be obtained from a distance.

There is very little improvement to be noted in the use of most of the construction materials. Many new materials have been developed and have become available, but in the majority of cases either the material has not been considered to be perfected or else it is a patented product which eliminates it from competitive bidding. The greatest strides have probably been made in the use of concrete.

Paints have not improved much during the past 6 years, but the use of aluminum paint for priming most materials, including wood, has come into much more general use.

Architects and Engineers

Very few competitions have been held for the selection of architects for the work under discussion. The owners have usually been successful in choosing competent architects, but where the owner or the architect has felt that the architect first selected was not equipped to handle a particular project, a consulting architect was called in to assist. This also applies to engineers.

The P. W. A. programs afforded to many of the architects and engineers employed by the Non-federal public bodies, their first opportunity to do work in which the Federal Government was interested, even though indirectly. The psychological effect of this, on the whole, was to cause them
to produce the best work of which they were capable. The resulting improvements in planning, construction, and design were appreciated by the public bodies who employed them, thus bringing about an advance in the requirements of quality in public buildings. Naturally this applies much more to the rural districts than to cities where the standards were already high.

The approximate number of individual architects and engineers in private practice who were employed was 273 on Federal projects and 5,742 on Non-federal projects. The number of architectural and engineering offices employed was 210 on Federal projects and 4,380 on Non-federal projects. The total remuneration paid for these services was $2,294,000 on Federal and $124,068,900 on Non-federal projects. The architects employed on Federal projects, with but few exceptions, served in the capacity of consultants only, the work being done by the organizations of the various Government agencies. Many of the Government bureaus have architectural and engineering divisions and of the 40 bureaus which constructed buildings under the P. W. A. programs, 31 did their own designing and only a few called in consultants.

Soundness of Construction

As mentioned before, the responsibility for soundness of construction rests with the owner and its architect or engineer. The P. W. A. examines the plans and specifications of projects to make certain that they conform to general standards, but does not as a rule check them for structural soundness. It does, however, as a participant in the financing, reserve the right to make a thorough examination of the plans at any time, and does insist that the owner require the contractor to rectify any mistakes or to correct any conditions of unsound construction that may have been discovered by the resident engineer inspectors in the course of construction. This system works better than if the P. W. A. gave formal approval of all plans and specifications and thereby assumed a responsibility, even if only moral, for the quality of construction, because owners, architects, and engineers use greater care in connection with the structural designing and the preparation of the specifications and plans when the responsibility is placed entirely on them.

It may be definitely stated that the standards and requirements set by the policies of the P. W. A. brought about a marked improvement in the quality and types of construction over those formerly employed by local public bodies without Federal aid. More intelligent planning, and supervision by the architects and engineers were the chief causes of this result. This is borne out by the answers to the questionnaire sent out by the Committee on Architectural Surveys, an analysis of which is shown in Chapter X.

Check of Costs

Like all Federal organizations, and especially as it was advancing funds, it was imperative that the P. W. A. make a very careful check on all costs. This necessitated a considerable number of reports and forms which had to be filled out by the contractor and approved by the owner. Many contractors complained of this but there were also many who claimed that the forms and reports had been most helpful to them in keeping better records and in providing them with better information as to how the costs were running during the progress of construction.

Reduction of Hazards

The buildings constructed during the past 6 years constitute a noteworthy advance in the reduction of hazards to life and property when compared to the buildings of similar types constructed previously. In many parts of the country the problem had not been given much consideration, probably because in the more remote districts risks were considered to be slight. The school authorities often had no requirements or regulations designed to combat fire, or in regions subject to seismic disturbances, to resist earthquakes.

After the 1933 earthquake in the Los Angeles-Long Beach area it was necessary to construct or rehabilitate practically all the schools in the area. Examination disclosed that the schools had been built in ways entirely unsuitable to withstand seismic disturbances, and so the State legislature made it mandatory that all buildings used for public gatherings should be designed to withstand the one-tenth gravity factor, which means that a structure must be able to withstand a horizontal force of over one-tenth of its total weight. The basis of this law was a result of studies made by a Japanese scientist and American engineers. Two types of construction came into use, known respectively as the "rigid frame" and the "flexible frame" types. The "rigid frame" type has proved more satisfactory and is now in general use. This is discussed later under "Region 6" in Chapter V.

After the P. W. A. Extension Act of 1937, the P. W. A. required the owners to design the schools so as to provide all practicable protection against fire. These requirements were based largely on the recommendation of the National Fire Protection Association for the protection of life, and the Building Code recommended by the National Board of Fire Underwriters for protection of property, also on the recommendations of the National Council on School Construction and other authorities, and, to a lesser degree, on State and municipal codes.

The P. W. A. has not compiled requirements regarding the construction of special occupancy structures, such as dormitories, libraries, museums, armories, exhibition halls, hospitals, courthouses, and places of detention and similar institutional buildings. In examining plans it is guided largely by the recommendations of the above-mentioned fire protective associations and applicable local codes.

Some local and State authorities insist that plans be approved by State boards of health. This is a progressive step, and, although the standards of health requirements are low in some localities, the tendency is more and more to approach a high standard throughout the country.

Craftsmanship and Decoration

The standard of craftsmanship in the use and application of materials has been satisfactory in general on the building projects, being higher in the urban areas and lower in more
remote districts where less skilled artisans were available. In
the higher types of construction the structural steel work and
the masonry, plaster, wood, tile and marble finishes, and
the plumbing, heating, and electrical work have usually been
of the best standard.

In a good many cases in both Federal and Non-federal
work sculptors and painters have been employed to decorate
the buildings. This work has varied in character from out-
standingly good to very poor. Viewed as a whole the crafts-
manship of the sculpture has been excellent.

In Non-federal work the owner employs the artist for
sculpture or mural painting, selecting him by competition.
This may be done in one of two ways. The architect may
carefully draw the outlines of the subject to ensure bidding
on an equal basis and then drawings may be submitted by
the artists, accompanied by bids, in which case the contract
is awarded to the lowest bidder; or else the owner may
establish an allowance and then call for drawings either from
a number of selected artists or from a number obtained by
advertisement. From the designs submitted, the winner is
then selected by a jury appointed by the owner. The decision
of this jury is final.

In the case of the Federal work carried out by the former
Public Buildings Branch of the Procurement Division, a
procedure was set up for selecting artists to execute sculpture
or painting. Under this procedure programs are provided,
describing the nature or subject of the work to be done as
well as all necessary data about size, location, etc. A jury is
appointed to pass on the designs submitted by the artists and
the winning designer is awarded the contract. The Govern-
ment also has the authority to appoint an artist who had been
determined as being in the winning class in some former
competition, or who is considered specially qualified for some
particular type of work. As a result, a large number of
artists were provided with work and many who were pre-
viously unknown were discovered and given opportunities.

Labor

The main purpose of the creation of the P. W. A. was to
increase employment of labor in the construction of perma-
nent and useful public projects and in the building industries
and the factories which supply building materials. The
policy with regard to wages has been that the minimum wage
rates of the various classes of labor in each trade must
be predetermined by the owners to conform to the prevailing
wage rates of the community for work of a similar character.
It should be remembered that the P. W. A. does not establish
wage rates. Where these rates are not officially established
by law, the owner must establish minimum rates for each
trade or occupation, giving consideration to rates established
by collective agreements and to rates actually paid for
similar work in the vicinity, and then conferring with the
labor adviser in the regional office to determine an equitable
rate. The hours of labor are required by the P. W. A. to
be not more than 8 hours per day nor more than 40 hours
per week.

As of December 31, 1938, approximately $380,868,000
had been expended on direct labor on the jobs, on buildings
only, and approximately $492,683,000 on indirect labor for
supplying the materials incorporated in the buildings on
Federal and Non-federal projects. The cost of materials
used in construction of these buildings was approximately
$716,993,000. These costs, especially of direct labor, will
be considerably increased when those projects which are
still under construction shall have been completed.

In addition to the employment of direct and indirect
labor, a large amount of direct employment was provided
for legal and financing services and for the architects, engi-
neers, and draftsmen who planned, designed, and supervised
construction for the owners, and also for other services of
supplies of blueprinting and drawing materials. Building
construction affects more different kinds of manufacturers
and producers than any other form of work.

The providing of employment produced a valuable
psychological effect on direct and indirect labor, in giving
employment by which labor could work and earn its own
living during these years of slack employment, rather than
be forced to accept some form of dole. Undoubtedly, this
effect, at least to some extent, must have been reflected in
the quality of workmanship produced.

It is not practical to estimate the number of men who
have been employed on P. W. A. projects, because in many
cases the same men have done different kinds of work under
different contractors on the same job and therefore would
be listed several times. Often the same men have worked
on different projects. The only basis on which such an
estimate can be made, and it must be a very rough esti-
mate, is in “man-hours” of work. This means to estimate
the total number of hours of employment created in the
construction of all the projects. Not including the 1938
program, on direct labor there were approximately 1,697,-
149,000 man-hours and on indirect labor there were prob-
bly about 3,157,000,000 man-hours, making a total of
4,854,149,000.

It is evident, therefore, that the economic effect of the
P. W. A. programs on sustaining general industry and the
employment of industrial labor has been very great.
CHAPTER V

DESIGN

The merit of design has been a much debated question at all times. The judgment of an individual is chiefly a matter of personal taste. What is beautiful to one sometimes is ugly to his neighbor. As, for example, the architecture of India may be too ornate for an Anglo-Saxon. The French have a saying: "Taste and color must never be discussed." Generally, most critics can agree, however, as to whether or not design, stripped of all unnecessary ornament, attains beauty through its line, proportion, and composition, and if it is suitable for its purpose. Therefore, the opinions contained in this book are the expressions of the individual taste of the authors as to the comparative merits of the structures which they have studied and of those which they have selected as outstanding examples of the best work in each of the various types of projects. The projects selected may not always be good architecture, but they appear to be among the best designs that have been produced for a given type of structure.

We use the term design in some cases to mean not only the general architectural and artistic treatment of a building, as distinct from planning, but also, in some cases, to include planning, use of materials, and types of construction.

As has been already noted, probably the greatest improvement in design over that of previous public work has been made in the architectural treatment of sewage-disposal plants, incinerators, and power and pumping stations. Following in order of excellence are dams, courthouses, city halls, auditoriums, post offices, schools, college buildings, and waterworks. Armories have been particularly unsuccessful and very few good architectural examples can be found in this type of work. There have been some extremely well designed and planned prisons and some very bad ones. In general, the quality of design and planning of hospitals and most institutional buildings has not advanced very much.

In connection with penal institutions it may be of interest to note that several years ago the P. W. A. established a routine whereby all plans for prisons were submitted for comment and recommendations to the Bureau of Prisons of the Department of Justice, which made suggestions based on good penology as developed in the Federal penal systems. This has resulted in many changes in plan and design. For example, high walls are often unnecessary, expensive interior cell blocks are being replaced to some extent by detention cottages for women and dormitories for men; and the sizes of employment and exercise areas are being increased. These changes together with various others of less note have altered the whole architectural problem of prisons and the results should be more and more apparent as time goes on.

Comparisons

Until its reorganization in July 1939, the P. W. A. had seven regional offices in the field. These were located at New York, Chicago, Atlanta, Omaha, Fort Worth, San Francisco, and Portland, and each, respectively, had jurisdiction over regions numbered 1, 2, 3, 4, 5, 6, and 7, respectively. The States included in each region are given below.

In July 1939 Region No. 7 was combined with Region No. 6, with headquarters in San Francisco.

It is possible to compare the architectural progress made in design and construction of the Non-federal work in the different types of structures in the P. W. A. Regions, and to review the nature of the Federal work of the various departments, bureaus, and agencies of the Government. Our opinions are given below.

NON-FEDERAL PROJECTS

Region No. 1

The States of Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island, New York, New Jersey, Pennsylvania, Delaware, and Maryland are in this region which covers an area of 183,675 square miles. In it are a large number of the ablest architects in the country. More outstanding examples of both traditional and "modern" architecture may be found here than in any other region of the country. The schools and college buildings are nearly all traditional in character. Courthouses, city halls, recreational buildings, bridges, tunnel approaches, hospitals, sewage-disposal and refuse-disposal plants provide many more examples of "modern" design.

In general there is not much change in the planning of buildings but in large scale planning of speed highways and parkways, bridges, and tunnels, there has been enormous progress. Examples of this planning are the Triborough Bridge, the Lincoln Tunnel project, and the network of parkways which radiate from New York City. These are among the outstanding achievements in the country in improving automobile transportation and relieving congested traffic conditions.
The use of materials is relatively standardized in Region No. 1, and those native to the region are all commonly used, such as hardwoods, brick, stone, terra cotta, ceramic tile, cement, gypsum products, metal products, steel, slate, glass, granite, and marble.

The type of construction usually adopted is steel framing with reinforced-concrete floors and with exterior walls faced with brick or stone, backed up with hollow tile. Frames of reinforced concrete are not much used.

**Region No. 2**

This region contains the States of Wisconsin, Illinois, Indiana, Michigan, Ohio, and West Virginia. It covers an area of 272,275 square miles. The general quality of architectural design is not as good as that in Region No. 1. Some very good architecture has been done in sewage-disposal plants and waterworks. Examples of good design in other types of building exist in various places, but in general there seems to be little advance in design and a tendency in much of the work to reproduce work done in the past. Traditional and "modern" design both appear without any notable trend toward one or the other.

It does not appear that the region has made much advance in the planning of buildings.

Native materials which are available and much used are hardwoods, limestone, sandstone, brick, clay products, ceramic tile, cement, metal products, and steel. Some use has been made of glass blocks and other new materials.

The most common forms of construction are steel frame or concrete frame with reinforced-concrete floors and exterior walls of brick, stone or terra cotta, backed up with brick or hollow tile. It is of interest that the first tall office building constructed with reinforced concrete framing was built in Cincinnati. This method of construction has been more generally used in this region than in the others.

**Region No. 3**

Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Tennessee, and Kentucky are in this region which has an area of 425,456 square miles. Traditional architecture of the Colonial period still dominates design here, except in Florida and the Gulf coasts of Alabama and Mississippi where some Spanish influence lingers and where "modern" design has crept in. With the exception of some noteworthy buildings, this area has not contributed much improvement in design. The best work has been done in Florida and Mississippi.

There has not been much advance in planning of buildings, but a good deal has been done in connection with planning of the national parks. An outstanding example of this is the Skyline Drive along the crest of the Blue Ridge Mountains in Virginia which will eventually extend to the Great Smoky Mountains in southwestern North Carolina.

Steel, limestone, marble, granite, cement, brick, clay products, and lumber are native materials and are generally used in construction.

Reinforced concrete, steel and wood framing are all used.

In general, exterior walls are bearing walls. Fireproof or fire-resistive construction is being used more than formerly. Very little has been evolved in the way of new types of construction.

**Region No. 4**

This region contains the States of Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Wyoming, and Montana, with a total area of 681,132 square miles. The general standard of design has shown little advance. "Modern" design predominates and the largest quantity of the best work is in Missouri, where many of the public buildings are outstandingly successful. In general, the best work has been done in courthouses, penal buildings, recreational projects, and municipal auditoriums.

There has not been much advance in planning except in some projects such, for example, as the Kansas City and St. Louis auditoriums, which are of considerable interest.

Native materials are granite, marble, limestone, cement, brick, and some lumber. A good deal of the material used in construction is imported from other regions.

The common types of construction are steel frame, concrete frame, and wood with exterior walls of brick, stone, or stucco. Glass blocks have been installed to a considerable extent in schools and courthouses, and parts of the walls of the Floral Conservatory in St. Louis are of structural glass.

**Region No. 5**

This region contains the States of Louisiana, Oklahoma, Arkansas, Texas, New Mexico, Colorado, and Kansas, covering an area of 746,534 square miles. The climate varies from semitropical on the Gulf coast to severely cold in winter in the mountain regions. As a result, the native styles of architecture show a wider variation than in any other region. Much interesting work, influenced by the Indian adobe architecture, has been done in New Mexico. The work in Texas and Louisiana shows the influence of the Spanish and French traditions. In Kansas, Oklahoma, Arkansas, and Colorado, design has conformed more to the work of the Middle West. The "modern" type of design has appeared occasionally and sometimes, as in the Exposition Building and the rubbish-disposal plant at Shreveport, Louisiana, has been done extremely well. The best designing has been in connection with dams, waterworks, courthouses, and hospitals.

Climate has been the controlling factor in the development of plans. In the coastal regions southern exposure to take advantage of the Gulf breeze is of primary importance. In New Mexico, Colorado, and northern Texas, small windows and thick or well-insulated walls must provide protection against the heat of the sun in summer and the extreme cold in winter. Such varying conditions of climate have resulted in a considerable variety of plans.

Much of the building material used in the region is produced locally. Brick, clay products, limestone, marble, granite, lumber, hardwoods, and cement are all available. Most metal products and steel must be brought from other States.
Reinforced concrete and steel are both used for frames in construction. Exterior walls are most frequently of brick, stone, or stucco facing on either brick or hollow tile walls.

Region No. 6

The States of California, Utah, Nevada, and Arizona are included in this region, which is climatically divided into the northern and southern sections differing completely from each other. It has an area of 467,933 square miles. Most of the buildings in Utah, Nevada, and Arizona do not show very great advances in design but in California it is fair to say that almost a new school of architectural design has been evolved. The "Field Bill," enacted in the State legislature following the earthquakes of 1933, and discussed in Chapter IV of this volume, was primarily responsible for this. It caused the abolition of all types of veneer construction and the elimination of projecting cornices and free or loose ornamental features. Furthermore, it confined all construction to three types: All concrete, combined concrete and steel, and wood, and required that all three types be designed to resist seismic disturbances. The architectural traditions of California are confined generally to the Spanish and the American architecture of the first half of the nineteenth century. Out of this tradition and with the aid of probably the best work in concrete finish done in the entire country, a type of architectural design has been evolved which is neither traditional nor very "modern" but which is thoroughly satisfactory aesthetically.

New features have appeared in planning, especially in the large schools due to the requirements for protection against earthquakes. These schools are separated into a series of individual buildings connected with each other by means of metal slip joints or by arcades or passageways.

Almost all of the building materials are produced in the region, with the exception of steel and structural wood.

The use of gunite for the construction of walls has been developed extensively in California. Gunite is a mixture of dry sand and Portland cement which is shot through a hose at a pressure of 60 pounds per square inch, water being added at the nozzle of the hose. The material is shot onto a wall or onto single-faced forms in a semiplastic state and is equally as strong as the usual form of concrete but of greater density and may be used under conditions where concrete cannot be successfully poured. It considerably reduces the cost of form work.

Former Region No. 7

This region included the States of Oregon, Washington, Idaho, and the Territory of Alaska, which are now included in Region No. 6 and which have an area of 836,114 square miles. Architectural tradition has not been deeply rooted in these States, and there seem to be no definite trends in architectural design. There are wide variations in climate, which is warm and humid on the sea coast, severely cold in winter in the eastern and mountain regions, and almost arctic in most of Alaska. The coastal bridges of Oregon and the Grand Coulee Dam on the Columbia River are much more than mere feats of engineering and their aesthetic value ranks high.

These States appear to have made but few new contributions to the planning of buildings.

Native materials which are in general use are lumber, sandstone, and brick. Metal products, steel, and cement are imported. Marble exists in large quantities in Alaska, and in inaccessible places in Washington, but due to transportation costs and lack of finishing facilities it is not in common use.

Construction is usually of steel, reinforced concrete, or wood, with no particular innovations except that along the seacoast a good deal of stucco is being used for exterior walls, applied directly to concrete. It seems to withstand the very damp climate extremely well.

One very curious condition exists in northern Alaska. In this region ice is present throughout the year at certain distances below the surface of the ground. During the summer, if rain water is allowed to penetrate the soil around a building it will melt the ice, thus causing the structure to settle. This makes it of vital importance to carry away rain water from the walls of the buildings. Also, as the upper soil, down to the permanent ice bed, is generally frozen in the winter in the extremely cold sections, as in Nome, the problem of water supply and sewage disposal is a very serious one.

Federal Projects

There have been 40 departments, bureaus, and agencies of the Federal Government which have constructed buildings under the P. W. A. By far, the largest number of these buildings have been carried out by the former Public Buildings Branch of the Procurement Division of the Treasury Department, the Bureau of Yards and Docks of the Navy Department, the Quartermaster Corps and the Corps of Engineers of the War Department, and the National Park Service of the Department of the Interior. Practically every type of structure used by man has been planned, designed, and built by the Government.

The former Public Buildings Branch of the Procurement Division, now the Public Buildings Administration of the Federal Works Agency, built post offices, courthouses, Federal office buildings, quarantine and immigration stations, Coast Guard stations, border inspection stations, marine hospitals, and in addition carried out work for the State Department, the Department of Justice, and the Public Health Service.

The Bureau of Yards and Docks of the Navy Department built hospitals, air and radio stations, submarine bases, navy yards, etc.

The Quartermaster Corps of the War Department built army posts, hospitals, garages, magazines, and warehouses,
while the Corps of Engineers constructed bridges and dams. The National Park Service built shelters, houses, and a multitude of buildings of all types that have to do with the national parks. The Bureau of Reclamation built Boulder Dam, Grand Coulee Dam, and many others for irrigation and power. A great variety of buildings and structures were erected by the remaining 34 departments, bureaus, and agencies.

The average quality of the design of these many and varied structures is high. Local tradition has been observed as far as possible. The “modern” influence is less pronounced in Federal than in Non-federal work.

The buildings are designed with great simplicity and a very sparing use of ornament, emphasis being placed on line, good composition, scale, and proportion. The rather rigid requirements in space and arrangement of Federal projects have made innovations in plan rare. In general, however, the buildings are well and economically planned, with emphasis placed on proper light and ventilation and elimination of waste space, together with economy in cost.

Most of the materials used were obtained, as far as possible, from the State in which the project was located. Very few new materials have been used.

The great majority of these Federal buildings are fireproof, constructed with steel or reinforced-concrete frames, reinforced-concrete floor slabs, and exterior walls of brick or stone. Most of the exceptions to this are in many of the structures built for the national parks, which are often of frame and frequently of log construction. Innovations in construction are almost entirely confined to dams, which have already been discussed.

From the records of the Bureau of Labor Statistics of the Department of Labor it appears that the costs of Federal projects constructed from plans and specifications prepared by the Government are probably from 2 percent to 2½ percent higher than similar projects constructed from plans and specifications made by private architects and engineers. Federal specifications are very detailed and, in addition, contain frequent references to other standard specifications on materials and their installation. Furthermore, the Government is the owner of Federal projects and, therefore, its supervision of construction is generally more meticulous than that of smaller public bodies, and the requirements of the plans and specifications are generally more rigorously enforced.
CHAPTER VI

SOCIological RESULTS

In this chapter we make a general summation of most of the sociological benefits to our national life brought about by the construction of the public structures during the past 6 years. These benefits have been far reaching.

Transportation and communication have benefited by larger and better highways and modern bridges and tunnels, and loans to the railways have enabled them to improve their rights-of-way, electrify their lines, and to recondition and add to their rolling stock. Airfields, constructed for commercial use and for the defense forces of the Nation, have not only added to the efficiency of the defense forces but have provided means by which transportation by air may be further perfected.

Opportunity for outdoor life and exercise for the public has been increased by the work carried out in the national parks, the community centers, and the schools. Water supply, electric light, and power have been provided for many communities for the first time in their histories. The restoration of old and historic buildings has added to the general culture of the Nation.

The construction of dams has not only provided flood control and electric power but has opened vast areas of land for settlement and agriculture by providing irrigation.

Government departments were given the opportunity, lacking for many years, of constructing buildings and projects for the use of the public. The Army and the Navy were able to replace many disgraceful and insanitary temporary buildings in their posts with adequate hospitals, barracks, and housing facilities.

Throughout the country, hospitals and State institutions have been able to build or greatly improve their plants for the insane, the sick, the aged, and the crippled. Notable advances have been made in the design, planning, and operation of prisons, enabling them to put into effect the new procedure whereby an effort is made to rehabilitate prisoners rather than merely to lock them up.

Sewage, garbage, and rubbish disposal plants have added greatly to the purification of rivers and beaches and to the sanitation of towns and cities.

The advances made in our school systems and in the cause of education by the added facilities made possible by libraries, museums, laboratories for research work, and other rooms for special studies, athletics, dramatics and public gatherings, are discussed in Chapter VIII, prepared for this book by a specialist in school-building problems, of the Office of Education, Federal Security Agency.
CHAPTER VII

OBSERVATIONS

In order that the P. W. A. programs should provide immediate benefit in employment and the stimulation of industry, it has been found necessary up to the present time to establish a time limit within which all construction under each program must be completed. Through this policy the P. W. A. programs have accomplished their purpose, but the process naturally necessitated too much haste by the owners' architects and engineers in the study of problems, in the design of buildings and structures, and in the preparation of plans and specifications. As an outgrowth of this haste many later changes in plans were required, inaccuracies in estimating cost occurred, necessary and important items were omitted from contracts, and errors were found which had to be corrected during construction.

As an example of the haste with which projects were begun, all of the working drawings for one project, consisting of 25 buildings, were completed by the owner's architects in only 26 working days. The best design of which architects and engineers are capable can be obtained only when they have sufficient time to study their problems thoroughly. Considering the necessary haste in getting projects under way, the results have been splendid on the whole.

The difficulties cited above imply the need for long-range comprehensive planning and programming of public works by the majority of the public bodies of the country. This applies to the departments of the Federal Government and is provided for by the Federal Employment Stabilization Act of 1931. Only by such long-range advance planning and programming can the needs of a community be ascertained and coordinated far enough in advance to allow architects and engineers time to study each problem properly.

It is true that most cities with a population of over 100,000 already have city-planning organizations of some kind. Few of these cities have been able as yet, however, to develop well-worked-out comprehensive plans for future civic development, although the majority do have long-range plans for their schools. As discussed in chapter VIII, only 21 of the States have State school-planning boards, and the majority of the counties and small cities have practically no facilities for the study of these problems. The general tendency is, therefore, to build for immediate needs only and to give consideration to projects individually, without relation to the broader aspects of community needs.

The development of a long-range program of public works for a community involves among other things a survey of all of the requirements and anticipated wants related to its growth and probable resources. Such a survey, to be of real value, must be more than a mere inventorying of the various projects which appear at the moment to be desirable. The projects of the several departments of the community must be related to each other in a comprehensive plan of development and must, also, be related to ability to finance. Furthermore, a long-range plan and program, to have meaning, must include an element of flexibility in order to allow for changing conditions or unforeseen circumstances which may arise from year to year. It should anticipate the needs of the community for as much as 5 or 6 years in advance and should be reviewed annually and brought up to date.

With such a program in operation, a community would be in a better position to undertake engineering and architectural studies and preparation of plans a year or two in advance of actual construction. There would thus be created a reservoir of easily available and well-prepared projects, which could be drawn upon as the need for any of them arose or as the need for emergency employment might occur.

While many cities and other State and local governments would be willing to embark upon the preparation of long-range programs and plans, few of them have either the understanding of the processes involved or the financial resources required. It seems appropriate, therefore, to suggest that the State and local public bodies should be encouraged in the study of advance planning for their public works needs through appropriations made for this purpose. The National Resources Planning Board has done much pioneering on this subject through its regional offices and with the cooperation of State and local planning boards. When in the future an economic situation arises that makes Federal aid in construction necessary, such aid should include immediate advances for detailed planning of projects. It is obvious, however, that these communities which have planned and programmed public works ahead will be able to get started earlier and those which have failed to plan may fail to receive grants for their projects.

The building industry is subject to wide fluctuations from varying causes and in times of depression is among the first to suffer. Even in times of normal business prosperity, depressions may occur generally or in certain sections, which may increase if not offset in some manner. Such building depressions often may start a widespread general depression. This can be understood when it is remembered that the building industry, besides providing direct employment, involves the use of practically all of our manufactured materials.

It is not possible, of course, to forecast periods of depression or to forecast the financial condition of the States or of the
industries at any given time. If Congress should make
annual appropriations which would be set aside to assist the
States and other governmental bodies, to be drawn upon
only at times of threatened depression, a reserve fund could
be built up which would make it possible to use previously
planned projects for quick construction work in order to
maintain the normal level of the building industry. The
States should be encouraged to institute a similar policy. Such
a procedure would constitute a powerful weapon with which
to combat depressions.

Serious consideration should be given to the subject of
building codes. There is today much confusion and lack of
standardization in this field. There are only 10 States
which have building codes, namely, California, District of
Columbia, Indiana, Louisiana, Massachusetts (limited), New
Jersey (limited), North Carolina, Ohio, Pennsylvania (lim-
ited), and Wisconsin. New York and Texas are preparing
State codes. Of the 3,165 towns and cities with over 2,500
population in the country, 1,887 have some form of building
codes. But few of the 3,071 counties have codes. There
appears, therefore, to be the need of a much greater adoption
and unification of codes. It is suggested that much could
be accomplished by a complete study of the situation and
the Federal Works Agency would be the natural department
for such a study in the field of public buildings.

It appears that in undertaking public works, it would be
advisable to have a wider distribution of work among more
architects and engineers than has been made by the owners
in the recent years of emergency. Due to the emergency and
the resulting necessary speed required in the execution of
the work, in many cases a large number of projects have been
given to one architect or engineer. Sometimes when an
owner learned that an architect had executed a particular
type of building, it employed him in the belief that he
could get the project or the numerous projects started quickly.
This, of course, was a mistake, as it resulted in many cases
in the duplication of very bad architecture.

To improve the quality of design of public buildings,
properly conducted competitions for the selection of archi-
tects should be encouraged throughout the country. It is
the best method yet devised to stimulate architects to do
the best work of which they are capable and in addition has
the advantage of giving the younger men a chance to prove
their ability.

There exists in Washington an organization known as the
Commission of Fine Arts, whose function is to review and
approve for the Government all designs of public buildings,
parks, and works of art in the District of Columbia. This
advice must be given but need not necessarily be followed.
It is suggested that this Commission or a similar body act in
this way in connection with all Federal work and furth-
more that its advice be made available to any communities
and States if they desire it. This might help greatly to im-
prove the quality of architectural and engineering design
throughout the country. The function of such a commission
might be enlarged further to include a continuous study of
new materials, new forms of construction, and new equip-
ment, thus creating an impartial source of information on
matters pertaining not only to the esthetic side of building
but to the practical side as well.

As to the general consideration of design of the public
buildings constructed in the past 6 years, however, it may
be stated definitely, in summation, that although naturally
there has been a considerable amount of bad architecture,
the general result has shown great improvement over the
work of the past 100 years.
CHAPTER VIII

SCHOOLS

by

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A study of school buildings erected with P. W. A. aid on which construction was completed or substantially completed before 1939

The P. W. A. has been a lifesaver for the schools.

During the World War period (1914–22) thousands of children were housed in old insanitary school buildings and were on part time and double sessions, and very little construction was carried out.

During the period following the war (1922–28) an effort was made to catch up on the construction of buildings and in these years the average capital outlay per year per pupil was $15.27.

After 1929 the depression put a stop to this recovery and construction fell off even more than during the war years. In 1930 the capital outlay per pupil was $14.44, in 1932 it had fallen to $8.03, and in 1934 it had reached the low figure of $2.24. This meant that the capital expenditure dropped from $370,877,969 in 1930 to $210,996,262 in 1932, and to $59,276,447 in 1934. Since normally it takes approximately 2 years to plan, finance, and erect a school building, this last figure represents appropriations made in 1932.

During the 4 years from 1934 to 1938 the P. W. A. made grants and loans for school building amounting to $113,155,-766 per year. These grants and loans, together with funds supplied by the applicants, made possible an expenditure of $232,405,061 per year, or $8.80 per year per pupil. In other words, the average expenditure each year per pupil for school buildings, with P. W. A. aid, from 1934 to 1938, has been almost four times as great as for the year preceding the organization of the P. W. A., but less than three-fifths of the amount per pupil per year in the period preceding the depression (1922–28).

Number of Completed Buildings Erected With P. W. A. Aid

According to the records of the Public Works Administration, applications were made by 3,179 owners for grants and loans for 5,406 public-school buildings and additions during the period from September 1933 to October 1938. In answer to questionnaires sent to 3,179 school districts by the Office of Education in connection with the Survey of the Committee on Architectural Surveys in May 1939, information was secured for 1,965 completed school buildings. These school buildings were distributed over the 48 States. They were found in all types of communities. That the construction was not confined to cities is shown by the fact that nearly two-thirds of them were erected in school districts outside of cities. Furthermore, 47 percent of the buildings erected in cities were in communities under 25,000 in population. This is important because the communities outside of the larger cities are the ones which have been severely handicapped for years due to lack of funds in their school-building programs.

Buildings Erected With P. W. A. Aid Eliminated or Replaced Many Existing Buildings

One of the most pressing problems in the modernization of our school system is the elimination of small school districts and the reorganization of schools into larger administrative units so as to provide modern educational programs for children in both elementary and high schools. For years one of the chief stumbling blocks in the way of such reorganization has been the existence of too many small buildings and lack of funds for the construction of the larger centralized schools.

The P. W. A. has materially advanced the reorganization of schools into the larger administrative units by making possible the erection of the larger units which are essential for such reorganization. For example, each of 150 buildings erected with P. W. A. aid eliminated 2 to 3 existing buildings; each of 29 buildings eliminated 4 buildings; each of 20 buildings eliminated 5 existing buildings; each of 28
buildings eliminated 6 to 9 buildings; and each of 17 buildings eliminated 10 buildings or more.

Furthermore, 47 percent of the 1,965 new buildings and additions eliminated fire-hazard buildings.

Examples of school buildings erected with P. W. A. aid which replaced old buildings are the high schools at Leland, Miss., and at Columbia, Miss., the Jonathan Dayton Regional High School in Springfield, N. J., the Elliot Grade School, Natick, Mass., and the Carl F. Bailey School at Hillsdale, Mich.

School Buildings With Modern Facilities Made Possible by P. W. A. Aid

P. W. A. aid for the construction of school buildings not only made possible the elimination of fire-hazard buildings and the reorganization of schools into larger administrative units, but it also made possible the erection of school buildings with the educational facilities now considered essential in a modern educational program. Because of the complex conditions of modern life it is necessary to give children a much richer and more varied educational program than formerly in order that they may develop the intelligence and resourcefulness to meet the conditions of a changing civilization. This means that elementary schools as well as high schools must provide opportunities for work in science, art, music, nature study, shop work, and facilities for play and recreation, dramatics, and motion pictures. The erection of school buildings with P. W. A. aid greatly increased the number of buildings with these modern educational facilities.

For example, 72 percent of the 1,965 new buildings and additions had auditoriums, and 76 percent had either gymnasiums or combined auditorium-gymnasiums. Furthermore, in addition to 13,273 class-rooms in these new buildings and additions, there were 1,122 libraries, 1,625 science laboratories, 860 social-science rooms, 593 art rooms, 834 music rooms, 1,425 home-economics laboratories, 1,054 industrial-art rooms, 373 agricultural laboratories, and 2,825 other special-activity rooms.

The fact that since 1933 hundreds of school buildings containing art and music rooms, science laboratories, auditoriums, and gymnasiums have been erected all over the country cannot help having a lasting effect in encouraging the type of school building which makes possible a modern school program. The P. W. A. officials would doubtless be the first to point out that they had nothing to do with determining the kind of facilities which went into the buildings. Such matters were rightly left to the school officials. But the point is that if the P. W. A. had acted in the bureaucratic fashion in which those who are opposed to centralization of activities in the Federal Government assume that Federal agencies will act, then the P. W. A. would have insisted on having control over the determination of the educational contents of the buildings. It did nothing of the kind. It left the schools free to plan their educational programs, but at the same time by giving them the money which made possible the type of building which every progressive school wants, it helped to spread knowledge of, and interest in, the modern type of school building.

One-third of the 1,965 school buildings erected with P. W. A. aid were elementary school buildings. It is often assumed that because of the decline in the birth rate new buildings for elementary schools are not needed. This assumption is not correct. Most of the elementary-school plants need modernization. Many elementary school children are still housed in 1-room schools which need to be eliminated and supplanted by centralized school plants with modern equipment. Many elementary schools, even of 8 or 12 rooms, do not come up to modern standards of heating, ventilating, lighting, and sanitation. Furthermore, a recent study by the Office of Education shows that 39 percent of all school buildings in 506 cities of 10,000 population and over are more than 30 years old. The majority of these buildings are elementary school buildings, and they are as appropriate for children of 1939 as would be the log cabin for adults of 1939.

An excellent example of a modern elementary-school building erected with P. W. A. aid is the Burgwin Elementary School in Pittsburgh, Pa. This building is functionally planned to provide modern educational facilities for elementary-school children, such as an auditorium, gymnasium, library, nature-study room, music room, hand-work room, etc.

Of the other buildings erected through P. W. A. aid 30 percent were planned for combined elementary and high schools. Examples of these combined elementary- and high-school buildings are those of Algoma, Wis., Moose Lake, Minn., Saybrook, Conn., and Jackson, Miss. Thirty-three percent of the buildings were planned for either high schools, junior high schools, or junior-senior high schools. Some examples of this type of building are the high schools at Palm Springs, Calif., the Hollywood High School at Los Angeles, Calif., the high school at Ansonia, Conn., the Western High School at Detroit, Mich., and the high school at Ogden, Utah.

Cost of New Buildings and Additions

Of the 1,965 new buildings and additions, the cost data were obtained for 1,324 new buildings and 529 additions. The cost of 1,324 new buildings was $213,242,442, and the cost of 549 additions was $47,153,031. The total cost of the 1,873 buildings was $260,395,473. This figure does not include the cost of equipment and land.

Importance of Long-Range Surveys of School Plant Needs

Apparently, few of the buildings erected with P. W. A. aid were based upon long-range studies of school plant needs which took into consideration a building program for a wide area. For example, the need for 1,152 school buildings was based upon a study of the individual districts only, rather than upon a comprehensive survey of building needs of a whole State or group of counties.

Such long-range studies of building needs are often carried
on by cities, but only 21 State departments of education have school building divisions and very few of these have made State-wide long-range studies of school plant needs. Such studies should be carried on in every State department of education, in cooperation with State planning boards, as has already been done in Virginia and Florida. They are essential if the reorganization of small school districts into larger centralized districts is to keep pace with the needs of children and adults. Furthermore, it has already been proved that State departments of education which have based their building programs on long-range State-wide studies of school plant needs have been able to show conspicuous savings because of such studies. For example, the State Department of Education in Virginia estimates that the State school building survey recently conducted in that State by the director of the school building division, in cooperation with the State Planning Board, has saved the State $2,000,000 by preventing unnecessary building through careful population studies, elimination of many small schools, and housing of pupils in centralized schools. But State departments of education do not have the funds for making such studies. They can only be made if the Federal Government should make grants to the States for the specific purpose of conducting long-range, scientific surveys of school plant needs. Such surveys are particularly important because an investigation conducted recently by the Office of Education showed that there is need for a continuation of large Federal grants to the States for school building construction. For example, a study conducted in 1937 showed that superintendents of schools in 62 percent of cities of 10,000 population and over, estimated that $496,000,000 was needed immediately for the construction of school buildings. This estimate did not include the needs of any of the rural areas or of communities under 10,000 population.

Opinions of School Superintendents in Regard to the Construction of School Buildings Under P. W. A.

School superintendents in each of the 48 States have now had experience with the planning and construction of school buildings erected with P. W. A. aid over a period of 6 years. Some superintendents have had official relationship with a great many buildings so constructed, others with only one or two buildings, but some superintendents in each of the 48 States have had some experience with the erection of school buildings with the aid of P. W. A. Consequently, it seemed desirable to get the reaction of these superintendents to the work of the P. W. A. so far as school buildings are concerned. It was obvious, however, that their judgment would not be worth much unless they had had experience both with buildings erected with P. W. A. aid and also with buildings which had not been so financed in part. Therefore, superintendents were asked to give their opinion only in case they had had experience with construction of school buildings of both types. On this basis, 817 school superintendents replied to a questionnaire giving their opinion of school building construction under P. W. A. as follows:

Of the 817 school superintendents, 47.4 percent said that school building standards were higher under P. W. A., 47.2 percent said they were about the same, and only 2.7 percent said they were lower.

Forty-eight percent said that in their opinion the construction of school buildings under P. W. A. was better than that for buildings erected without this aid, 44.7 percent said it was the same, and 4.4 percent said it was poorer.

Forty-eight percent said that the plans and specifications were better under P. W. A., 46.4 percent said they were the same, and 2.9 percent said the plans and specifications were less complete.

Twenty-two percent said that the competition for contracts under P. W. A. was fairer, 70.0 percent said it was about the same, and 4.2 percent said they were not so fair.

A larger percentage of both city and county superintendents agreed upon the superiority of accounting methods developed under P. W. A. than was the case in any of the preceding four answers. For example, 59.2 percent of all the superintendents said that the accounting methods under P. W. A. were better than in the case of buildings erected without P. W. A. aid, 35.8 percent said they were the same, and 2.9 percent said they were poorer.

This information is given in detail in the statistics at the end of this publication.

Comments Upon the School Buildings Erected With P. W. A. Aid

No attempt will be made in this report to appraise, from an architectural standpoint, the school buildings erected with P. W. A. aid. But a few comments on several present tendencies in the functional planning of school buildings may be of interest to architects. The comments are in the nature of general conclusions and suggestions arising out of a study of a large number of buildings erected with P. W. A. aid.

Plans of school buildings depend upon the kind of education to be carried on in the buildings. In the days of the all-study school, the planning was comparatively simple since all that was needed was a given number of classrooms under one roof. But in the last quarter century rapid changes in social and economic conditions have necessitated far-reaching changes in the curriculum and program of both elementary and high schools. As has already been pointed out, these changes in curriculum are reflected in a demand for buildings that contain not only classrooms but auditoriums, gymnasiums, music rooms, art rooms of various types, science laboratories, libraries, shops, home economics, and sewing rooms. Moreover, the number of these rooms, their location, size, and equipment depend upon the particular educational program carried on in the building.

School superintendents who have carried out extensive school building programs during the last 20 years realize that if they are to get the full value of every dollar invested in their buildings it is important that they plan their educa-
tional program before the plans are drawn so that they can give the architect the following information as a basis for preliminary plans: (1) The maximum number of pupils per academic classroom and the dimensions which have been found to be the most satisfactory; (2) the maximum number of pupils per period who will use such special rooms as libraries, art rooms, and music rooms, and the kind of equipment to be used in these rooms; (3) the dimensions of the gymnasium based on the number of pupils using it at one time; and (4) the capacity of the auditorium and its dimensions, and the equipment of the stage. In other words, the school cannot be planned satisfactorily from a functional standpoint unless it is the result of the joint efforts of the school people and the architect. Failure on the part of the school superintendent and staff to tell the architect how each unit is to be used and the maximum number of pupils likely to use it, and what kind of equipment is to be put into the rooms, often results in tragic waste.

*Modern Trends in Functional Planning of School Buildings*

Since the efficient planning of a school building depends upon the kind of educational program to be used in it, and since there is a great amount of experimentation in curricula and programs at the present time, it is obvious that no hard and fast standards can be made in regard to the planning of different units in a building. If a school is operating on one type of educational program, a given number of rooms of certain sizes will be needed. But if there is a different type of program, rooms of entirely different kinds and dimensions may be needed for a school of the same number of pupils.

For example, in an elementary school where many different kinds of activities are carried on in each classroom, classrooms of 22 by 35 feet or larger may be required. On the other hand, in an elementary school where only academic work is taught in the classrooms and where there are separate rooms for a library, for nature study, art, music, etc., the tendency is to make the classrooms 22 by 30 feet and the special rooms 22 by 40 feet or 22 by 45 feet. In a combined junior-senior high school, the classrooms may be 24 by 26 feet or 24 by 28 feet and there may be a great variety of special rooms. For example, a music course may require a choral room, orchestra room, band room, and instrumental music room. The planning of these rooms should be carried on in close cooperation with the director of music, and the dimensions of the rooms will vary with the program of the school. The same procedure applies to all other special activity rooms.

Furthermore, it should be remembered that school curricula and educational programs are always in process of change to meet the needs of youth in a complex and constantly changing civilization. For this reason it is essential that modern school buildings should be erected, as office buildings are, with nonsupporting walls between rooms. If this is done then the type and size of room can be changed without necessitating any change in fundamental structure.

One of the units in the school building that is essential for a modern educational program is the gymnasium, but the number and sizes of gymnasiums, locker rooms, and showers will depend upon the program of play and physical education. If that program provides for two classes using the gymnasium each period of the day, either two separate gymnasiums may be required or there may be one gymnasium unit so constructed that by the use of a folding door on runners two gymnasiums may be provided for the daily work. By throwing open the folding doors the total space is made available for intramural basketball games. Too often there is a tendency to plan gymnasiums on the basis of their occasional rather than their daily use. That is, they may be planned primarily for intramural basketball games without sufficient regard to daily use. When this is done the gymnasium is likely to be far larger than is necessary for one class, and yet cannot be used by two separate classes. It should be remembered that the greatest waste in school building planning lies in providing rooms for occasional rather than regular use.

The location of the gymnasium is very important. Sometimes it is located on one wing at the front of the building, and the auditorium on the corresponding wing. From an architectural standpoint this is attractive but from a functional standpoint there are some grave objections to it. In the first place, outside light is not necessary for a gymnasium. Therefore, it is a waste to use space for the gymnasium that can better be used for classrooms. In the second place, it is desirable to place the gymnasium toward the rear of the building so that there may be easy access to the playground which is usually behind the building.

The auditorium is one of the most important units in the school building and yet it is usually the most poorly planned. The reason is that until lately there has been considerable confusion as to how the auditorium should be used. Originally it was merely an assembly hall where the whole school met in the morning for opening exercises. In recent years, however, it has come to be recognized that the school should be the community center of the neighborhood and that the auditorium should be constructed for use both by the school and by the community as a school theater in which plays, concerts, lectures, and motion pictures may be presented. Unfortunately, the use of the auditorium as a school and community theater is of such recent growth that school officials and architects are only just beginning to realize that the modern school auditorium must be planned on altogether different lines from the old assembly hall.

The first essential in planning an adequate school auditorium is to recognize that the old tradition that the school auditorium should be large enough to house the entire school at one time not only is not necessary in a modern school program but actually prevents the planning of the kind of auditorium needed for both school and community use. A school auditorium with a seating capacity of 1,500 to 2,000 is too large for the presentation of plays. Most professional theaters in New York City have a capacity of 1,000 seats or less. Very few professional actors can project their trained voices or "get across the footlights" in a 1,500-seat auditorium. Much less can this be done by amateurs.

The greatest fault in the planning of school auditoriums is usually found in the planning of the stage. It is recom-
mended that the stage should be not less than 25 feet in depth, that the proscenium arch should be not less than 24 feet or more than 32 feet in width, and that the off-stage space from side wall to side wall should never be less than twice the width of the proscenium. Yet a recent study of the Office of Education shows that in 30 auditoriums only 2 stages had a depth of 25 feet, in only 13 did the width of the proscenium arch conform to the above standards, and none of the stages had off-stage space equal to the width of the proscenium arch.

When auditoriums are planned as just described, they cannot be used for the proper presentation of plays and concerts because, first, the stage is not large enough for more than two or three persons to move around owing to the furniture, and, second, there is not enough off-stage space in which to place property between acts. Without doubt the slow development of the school building as a community center has been due in large part to the failure to construct the auditorium in accordance with the technical requirements of the well-planned modern theater. For this reason the recent bulletin of the Office of Education entitled "The School Auditorium as a Theater" should be of practical value both to school superintendents and architects.

In the past there has been a tendency to build what is called a combined auditorium-gymnasium instead of a separate auditorium and gymnasium. This tendency is decreasing. It is generally recognized by educators that a combined auditorium-gymnasium is undesirable both from a functional and an administrative standpoint. They admit that such a unit is not satisfactory either as a gymnasium or an auditorium because a room constructed for the purpose of throwing a basketball from one end of it to the other cannot be designed satisfactorily to have the character needed for a theater. In most cases the usual argument advanced for a combined auditorium-gymnasium is that it is cheaper than building them as separate units. Fortunately, recent studies have shown it is not necessarily true that a combined auditorium-gymnasium is cheaper. If auditoriums are constructed to provide for 33 to 50 percent of the capacity of the school, which is now the general tendency, then it is possible to construct a separate auditorium and a separate gymnasium, the total cubage of which is no greater, in fact often less, than the cubage of the combined auditorium-gymnasium.
CHAPTER IX

TYPES OF SELECTED PROJECTS

The projects illustrated on the following pages are representative of the best work of different types of architecture completed, or substantially completed, up to January 1, 1939, with the financial assistance of the Public Works Administration.

The different types are classified into 24 different kinds of projects, as follows:

- Local government buildings:
  - b. Courthouses.
  - c. State capitol.
  - d. Miscellaneous State buildings.
  - e. Police and fire.

- Auditoriums and armories.
- Libraries.
- Memorials and museums.
- Elementary schools.
- High schools.
- Combined elementary and high schools.
- Junior colleges.
- Colleges and universities.
- Social and recreational buildings.
- Hospitals and institutions.
- Jails and penal institutions.
- Warehouses and docks.
- Sewage-disposal plants.
- Garbage and rubbish-disposal plants.
- Waterworks.
- Light and power plants.
- Dams.
- Airfields and hangars.
- Bridges and highways.
- Army and Navy posts.
- Post offices.
- Miscellaneous.
- Housing projects.
The city of Pawtucket is situated on the Seekonk River at the head of Narragansett Bay. As early as 1790 it began its industrial career with the construction of the first textile plant built in America, and today it has over 300 mills, plants, and factories manufacturing cotton textiles, woolens, silks, wire, machinery, etc.

The city departments were housed previously in rented quarters. The new city hall provides quarters for all of the municipal departments and is part of a civic center group which includes the Central High School and the Memorial Bridge.

Its over-all dimensions are 285 by 90 feet and the tower is 156 feet high. It was completed in March 1936 at a construction cost of $393,460 and a total project cost of $448,042.
Local Government Buildings

Municipal Building, Town of Stratford, Connecticut

This municipal building is in the town of Stratford, east of Bridgeport, and on the west bank of the Housatonic River, near its mouth. It is on a triangular plot of ground with streets on all sides and is placed well back from the apex of the triangle.

The building is of fireproof construction up to the roof. With the exception of the portico, the exterior walls are of red face brick. The floor slabs are concrete of bar-joist construction, and the roof is wood covered with slate. The cupola is wood.

Offices and a garage for the police department are in the basement. The upper floors provide quarters for the town clerk, the tax assessors and collectors, the town manager, a courtroom, council chambers, and drafting rooms for the chief engineer.

The dimensions of the building in plan are 99 by 143 feet. The height to the top of the cupola is approximately 60 feet. The project was completed early in 1937 at an approximate cost of $225,000.
West Hartford, a suburb of Hartford, Connecticut, had a population of 25,000 in 1930. The new town hall, which replaces a small and obsolete frame building, is on a main thoroughfare in a district which is partly residential and partly business. It houses all the town offices, including the police department, the court, and a jail.

The exterior walls are red face brick with trim and base of limestone. Doors, windows, cornices, and the cupola are wood. The roof is slate laid on gypsum plank.

The building is U-shaped in plan, is two stories and a basement in height, and has a volume of 628,000 cubic feet. The over-all dimensions are 107 by 165 feet and each wing is 33 by 43 feet. The space between the wings is occupied by a one-story garage. It was completed during February of 1937 at a construction cost of approximately $260,600 and a project cost of approximately $321,000.
West Orange is a suburban community in the New York Metropolitan area, a short distance west of Newark. In general it is residential in character.

The new municipal building replaces an old and obsolete structure which was inadequate in size and had no proper facilities for the storage of records. Some of the municipal offices were in temporary buildings, some in rented quarters and there were no garage facilities with the result that the city-owned automobiles had to be stored in public garages. The new building houses all of the city departments. The basement contains a garage, storage space, and a block of six cells. On the first floor are the police headquarters, courtroom, and offices for the mayor, clerk, treasurer, and others. The second floor has offices for the engineer, director, building inspector, the street department, and a drafting room.

The structure is fireproof throughout, the exterior walls being of red face brick with limestone trim.

The overall dimensions are 57 x 165 feet and the building was completed during July 1937, at a construction cost of $209,279. The total project cost was $226,093.
Medford is a residential suburban community a short distance north of Boston and its population has increased from 23,150 in 1910 to 59,174 in 1930.

The history of Medford is recorded on two tablets at the main entrance of the new city hall and reads as follows:

Settlers were reported "upon Mysticke" in 1629. A larger group in 1630 settled near the square and named the place "Meadford." The first recorded town meeting was held in 1674. In 1676 the first selectmen were elected and in 1689 the first representative was sent to the General Court. Town form of government continued until Medford was incorporated a city in 1892.

Medford's first town meetings were held in private homes, later in meeting houses until a town hall was erected in 1833. That building was partially burned and rebuilt in 1835 and 1850 and remodeled in 1893 to accommodate the new city government. It was razed in 1916 and from that date offices were leased until the completion of this building in 1937.

The building is T-shaped in plan and three stories in height, and its over-all dimensions are 180 by 131 feet. It is fireproof throughout, the exterior walls being of water-struck brick and limestone.

The project was completed in September 1937 at a cost of approximately $450,000.
Cranston, which adjoins Providence on the southeast, is the fourth city in size in the State, its population having increased from 21,107 in 1910 to 42,911 in 1930.

The new city hall, which houses all of the municipal offices, replaces the old frame town hall built in 1885 which was considered to be a firetrap, and, in addition, made it possible to eliminate three other buildings which were used as annexes to the town hall and for which a yearly rent of $1,080 was paid.

The new city hall is T-shaped in plan and is three stories in height, including the basement. The exterior materials are granite, red face brick, and buff limestone. The sloping roofs are covered with slate the windows are part wood and part steel, and the exterior doors are part wood and part bronze. The structure is fireproof.

The ground-floor area is 11,271 square feet and the volume of the building is 509,550 cubic feet. It was completed in June of 1937 at a project cost of $271,464.
Berwick, which has a population of about 2,000, is on the
Salmon Falls River, about 12 miles from Portsmouth, New
Hampshire, in the extreme southwestern part of the State.
It is in an agricultural area, but has a small cannery and
two woodworking plants.

A bequest of securities was made to the town which was
intended to provide funds for the building. Due to a decrease
in the value of these securities it was necessary to obtain
P. W. A. aid, and even with this aid a smaller building was
constructed than the one originally contemplated.

The over-all dimensions of the building are 117 by 77
feet and it is two stories high with a basement. It houses all
of the town offices, the fire department, a library, an audi-
torium, a kitchen, and a social room.

It has a steel frame, concrete floors, and wood roof. The
exterior walls are brick with wood trim and the cupola is
wood. It was completed in January 1939 at a construction
cost of $67,557 and a project cost of $85,385.
This structure replaces a municipal building which was 70 years old, which had been remodeled several times, and had passed the point of economic usefulness.

The new building contains offices for the burgess, borough clerk, city engineer, police department, health department and welfare clinic, and the council chambers. There is a pistol range in the basement, a jail with eight double cells, a dormitory for transients, and some unfinished space for future expansion.

The structure is fireproof. Foundation and basement walls are concrete, floors are reinforced concrete slabs supported by steel beams, and the roof is slate over wood sheathing supported by steel trusses. The exterior walls are faced with sand-finished handmade red brick with limestone trim except that the cornices and cupola are wood.

The plan is H-shaped, 137 by 101 feet over all. The construction was completed in January 1937 at a construction cost of $92,307 and a project cost of $119,274.
Municipal Building

Lewistown, Pennsylvania

Lewistown is the county seat of Mifflin County and is situated on the north bank of the Juniata River, 61 miles west of Harrisburg. This new building replaces a structure 70 years old which was obsolete and past the point of economic usefulness.

The property is 100 feet wide by 65 feet deep. The building houses all of the municipal agencies and has in addition general storage space and a scale large enough to weigh the heaviest trucks.

It is fireproof throughout with steel frame, and floors and roof are constructed of truss steel joists and concrete slabs. The front and side walls are variegated limestone backed with brick and tile and the rear wall is face brick. Windows are steel and exterior doors white metal.

The office floors are wood, all doors are walnut, all ceilings acoustically treated, and the stairs are steel. A complete ventilating system is included in the equipment.

The building is rectangular in plan with extreme dimensions of 42 by 81 feet. It was completed in March 1937 at a total project cost of $67,321.
The Borough of Crafton, originally called Killiman and later Brodhead, is a residential community with a population of 7,500, lying just outside of Pittsburgh.

The building is part two stories and basement in height and has over-all dimensions in plan of 112 by 42 feet. It houses the municipal offices, the police and fire departments. There is space for the fire apparatus and a police-car garage, reading and billiard rooms for the firemen, police hearing room, detention cells, council chamber, offices for the borough secretary and tax collector, and a room for social gatherings.

The construction is fire-resistant. The exterior walls are limestone backed up with hollow tile and the floors are reinforced concrete on steel joists.

The volume of the building is 140,000 cubic feet. It was completed in August 1938 at a construction cost of $75,382 and a project cost of $75,382, the costs being identical for this project.
Municipal Building

*Saddle River, New Jersey*

The Borough of Saddle River is a high-class residential community with an area of about 5 square miles, chiefly devoted to large estates. It is located in northern New Jersey, about 22 miles from New York by way of the George Washington Bridge. Previous to the completion of the new building an old frame building without improvements other than electric light was rented as a town hall and for the storage of fire apparatus.

The first floor of the project contains an entrance foyer, the mayor's office, council room, offices for the assessor and collector, and an auditorium seating 225 people. The second floor contains a balcony to the auditorium, seating 125, and a library. In the basement are a fire-apparatus room, firemen's recreation room, police and recorders' room, detention room, and community kitchen.

The building is of fireproof construction with reinforced concrete floors, steel trusses, and gypsum plank roof. This building, the old Dutch Reformed Church, and the schoolhouse in the immediate vicinity, form a community center. The exterior walls are native brownstone on the front portion of the building. The trim is wood and the roof is slate.

The dimensions are 69 by 84 feet. The completion date was December 15, 1937, and the total project cost $59,256.
Municipal Building

Pocomoke City,

Maryland

Pocomoke City, with a population of 2,609 in 1930, is in Worcester County in the extreme southeastern part of the State. The property on which this municipal building stands has an area of 9,000 square feet and is in the center of the business district.

The structure provides quarters for the city officials and contains, in addition, a rest room and toilets, and space for the Pocomoke Library.

The exterior walls are red face brick with a cut-stone belt course at the first-floor level. Sash and trim are wood and the roof is slate. There is a masonry terrace at the entrance with a wrought-iron rail.

The building was completed in April of 1937 at a total project cost of $46,939.
Seymour, with a population of 6,890 in 1930, is on the east bank of the Naugatuck River, a short distance north of its junction with the Housatonic River.

The new town hall is in the commercial center and opposite the post office. It provides quarters for the town clerk, the tax collector, the selectmen, the nurses, and a record vault on the first floor, and quarters for the police department and a jail in the basement.

The building is semifireproof, the first floor being concrete and the ceiling beams and roof of wood. The exterior walls are selected common brick, windows, doors, cornice, and cupola are wood, and the roof is covered with slate. The over-all dimensions in plan are 84 by 38 feet.

It was completed in October 1936 at a construction cost of $35,873 and a project cost of $38,662.
The town of Chester is midway between Springfield and Pittsfield on the main line of the Boston & Albany Railroad. Its population in 1930 was 1,400. It has some small manufacturing plants and is a center of education in that it possesses the only high school within a radius of 30 miles.

The new town hall replaces an older building which was destroyed by fire in 1935. It is T-shaped in plan and, due to a sloping site, is two stories high in front and three in the rear.

In the basement are three social rooms and all utility rooms. The first floor has an auditorium 46 by 58 feet with a stage and two anterooms. On the second floor are rooms for town officers, the tax department with a waiting room, two private offices, and a moving-picture projection booth.

The wall construction below the first floor is concrete and above the first floor is brick backed with terra-cotta block. The floor construction is wood joists on steel girders. The trim is wood and the walls of the recessed porch are faced with wood.

The building was completed in February of 1937 at a construction cost of approximately $36,600.
City Hall

Delaware, Ohio

The new city hall at Delaware replaces a building which was built in 1873 and which was destroyed by fire in 1934. Following the fire, the city offices were housed in an abandoned school building, the fire department occupied rented quarters, and municipal prisoners had to be confined in the county jail.

The new building was erected on the old site, which has been suitably landscaped.

The first floor provides quarters for city offices, the fire department, and a police garage. The second floor houses council chambers, conference rooms, the office of the city engineer, a jail, and quarters for the jailer.

The construction is reinforced concrete with exterior walls of red face brick and stone trim.

The volume of the building is 280,000 cubic feet. It was completed in February 1937 at a project cost of $95,047.
Municipal Building, *Des Plaines, Illinois*

This building is unusual in that it houses both the city hall and the public library of Des Plaines, Illinois. The old city hall had become obsolete and it was sold, together with its property, thus providing funds to help finance the new project. The old public library was inadequate and was demolished in order to provide a site for the new municipal building.

The first floor of the new structure contains, in addition to city offices, a large room for the use of the city council and municipal court, which can also accommodate about 150 people at minor civic meetings. The east wing houses the fire and police departments and the west wing, with a separate entrance on the side street, houses the public library.

The exterior is red brick with brick quoins at the corners and stone trim.

The building has a usable floor area of 10,000 square feet and was completed at a total project cost of $91,567.
Municipal Building  
*Marietta, Ohio*

The river-port city of Marietta, at the junction of the Muskingum and Ohio Rivers, was one of the first settlements of the "Northwest Territory." Today it is a city of 15,000 people with many minor manufacturing industries.

Before 1935 the municipal government was housed in an obsolete nonfireproof building with an auditorium seating 900 on the top floor, necessitating unsightly fire escapes.

The new municipal building occupies an ample site and the project included, in addition, a connecting wing to a relatively new and modern fire-department building and the landscaping of the entire site.

The new building contains quarters for all of the departments of the city government and also an auditorium seating 1,400 and a banquet hall with kitchen facilities. The construction is steel and reinforced concrete, and the exterior walls are red face brick with stone trim. The principal rooms are acoustically treated, and mechanical ventilation is provided throughout. Many walls are decorated with mural paintings depicting the pioneer history of Marietta.

The building has a volume of approximately 210,000 cubic feet and the project cost was $123,808.
This project included, in addition to the construction of the municipal building, the purchase of a site which was selected in the business district of the city, facing the Miami River.

The building provides space for the city council, all of the offices for the departments of the city government, municipal courts, a jail, the police department with a rifle range for their use, and a unit of the fire department.

The structure is fireproof throughout and its exterior walls are faced with limestone relieved by a small amount of carved ornament and decorative metal spandrels between the windows.

It was completed in April 1936 at a construction cost of $419,783 and a project cost of $573,690.
City Hall

Saginaw, Michigan

This city hall occupies the site of a former building which was destroyed by fire on April 9, 1933. It is approximately 120 by 140 feet over-all in plan and is two stories and a basement in height. As it is on sloping ground, the basement windows are above grade on the rear.

The basement provides space for the public-welfare department and for a small courtroom. On the first floor are most of the city offices and space for record storage. The council chamber, the mayor's offices, and the department of public works are on the second floor.

The building is fireproof, of reinforced concrete, and the exterior walls are faced with slightly rough native stone in narrow courses laid irregularly with flush mortar joints. The trim is of sawed limestone and a small amount of marble at the main entrance.

The volume of the structure is approximately 545,000 cubic feet. It was completed in November 1937 at a construction cost of $294,349 and a project cost of $312,526.
The population of Montgomery, the capital city of Alabama, was 66,079 in 1930. Its city hall was destroyed by fire in 1932 and shortly thereafter a grant from the P. W. A. made possible the construction of a new building, which was placed on a site adjoining the State capitol.

It is two stories in height and accommodates the water department, police department, tax collector, health department, engineering department, and the mayor and his staff.

In addition, it provides an auditorium with a seating capacity of 2,300, a stage, and miscellaneous offices.

The exterior walls are red brick trimmed with stone, and the building is fireproof throughout and air-conditioned. It is E-shaped in plan with over-all dimensions of 131 by 311 feet.

It was completed at a construction cost of $623,815 and a project cost of $687,493.
The city of Roanoke Rapids, in the northeastern part of the State, consolidated with the city of Rosemary in 1931, thereby increasing its population from 3,400 to 9,400. Hydroelectric development on the Roanoke River made electric power available at a low rate, thus inducing six large textile plants to establish themselves nearby. At that time the city was without a municipal building and rented quarters were used for the various city departments.

A loan and grant from the P. W. A. made possible the erection of a fire-resistant building, 83 by 102 feet over all, and two stories and a basement in height, which houses the fire department, sanitary department, tax collector, the mayor, and a court.

The exterior walls are brick with stone trim except the cornice and cupola, which are wood. The pitched roofs are covered with asbestos shingles.

The structure was completed at a construction cost of $32,334 and a project cost of $37,697.
Sioux Falls is in the extreme eastern part of the State on the Big Sioux River and its population of 33,362 in 1930 makes it the largest community in South Dakota.

The new city hall is three stories and a basement in height and houses all of the municipal offices, including the police, health, and water departments, as well as the judicial offices, a jail, a garage, and an auditorium seating 400.

The structure is fireproof throughout, with a steel frame and reinforced concrete floor and roof slabs. The exterior walls are face brick trimmed with stone and granite. All sash are metal. Small spots of carved stone ornament are used over the first-floor windows and over the main-entrance door.

The building was completed at the end of July 1936 at an approximate project cost of $432,000.
City Hall

*Kansas City, Missouri*

Kansas City has a well-studied plan for its civic center and the city hall takes its place in the group. It occupies an entire city block in area and consists of a rectangular base six stories high from which a tower rises to a height of 429 feet above the basement floor.

The building is planned not only to meet the space requirements of the present city government but to meet increased future requirements based on the expected normal growth of the city.

The construction is fireproof throughout and consists of steel framing adequately wind-braced and encased in concrete. The exterior walls are carried on spandrel beams and are faced with limestone. The walls at the top of the rectangular base are decorated with sculptured panels depicting the history and progress of the civic government.

The landscaping is simple but in character to conform to the city hall plaza and the disposition of the entire civic center.

The base of the structure measures 128 by 201 feet and the main shaft above the base is 97 by 124 feet. The total expenditure for the city hall building was $4,121,768 and an additional $308,724 was required for the construction and landscaping of the city hall plaza.
City Hall, *Brentwood, Missouri*

Brentwood is a suburb of St. Louis, a short distance west of the city, and had a population of 2,819 in 1930. Its new city hall is erected in a residential district and provides space for a council chamber, offices for the mayor and the aldermen, the police department, including a small dormitory and a jail, two fire trucks, and the necessary storage and utility room.

The building is two stories and a basement in height and is of fireproof construction throughout. The exterior walls are red face brick trimmed with stone. The roof is covered with slate and is surmounted by a small cupola of wood which contains the fire siren.

The project was completed in December 1935 at a construction cost of $45,016 and a project cost of $54,035.
The new Sebastian County Courthouse at Fort Smith has six floors, counting the semi-basement and the central penthouse of two floors devoted entirely to the jail. On the basement floor is a large assembly hall, the police department, miscellaneous offices, and storage space for supplies and for cars. The first, or main floor contains the council room and offices for the mayor, tax collector, assessor, clerk, engineer, and local utilities. The circuit, municipal, and chancery courts are on the second floor with offices for the judges, clerks, and reporters. The third floor has offices for attorneys and officials connected with the county.

The building is fireproof and faced with ornamented limestone. The project was completed in October 1937 at a construction cost of $462,804 and a project cost of $495,548.
County Office Building

*Port Arthur, Texas*

Port Arthur was selected for the location of the Jefferson County Office Building as being the place from which county affairs could be most economically carried on.

The building is 116 by 68 feet in over-all dimensions and is two and part three stories in height. The first floor provides offices for the assessor and collector of taxes, commissioners, county health officer, sheriff, county attorney, and a conference room. On the second floor are a large assembly room seating 235, two small courtrooms for justices of the peace, and a jury room. With the exception of the jail office and a guard room, the partial third floor is devoted entirely to cell blocks for prisoners.

The exterior is limestone and the property is large enough to be well landscaped. The project was completed in August 1936 for a total cost of $240,000.
Municipal Building

*Austin, Texas*

It was decided to remodel the municipal building at Austin rather than to build a new one because the old structure had sound masonry walls and also because it contained some relatively modern equipment in excellent condition. The walls of the addition are brick and tile and the entire exterior is veneered with 4 inches of limestone.

The first floor provides space for the water, light, tax, and accounting departments, and the permanent files of these departments are easily accessible by a stairway to the basement. The second floor is occupied by the engineering and legal departments and the purchasing agent, while the third floor houses the police department.

Construction consists of reinforced concrete columns and floor slabs while the roof slab is supported on steel joists. The building is equipped with a complete summer and winter air-conditioning system. The ground floor area is approximately 14,800 square feet. The structure was completed in January 1939 at a construction cost of $276,846 and a project cost of $296,636.
Oklahoma City is the capital and largest city of the State, having a population of 185,389 in 1930.

The new municipal building provides quarters for all of the commissions and departments of the city government except the police department and the court which are housed in a new jail building, which was built at the same time and as part of the same P. W. A. docket.

![Municipal Building, Oklahoma City, Oklahoma](image)

The structure is fireproof throughout with a steel and concrete frame, the exterior walls being select buff limestone, backed up with brick, and a considerable quantity of ornamental metalwork appears on the main-entrance facade.

It was completed during February 1937 at an approximate cost of $663,000. The jail building, constructed at the same time, brought the cost for the two buildings to $853,000.
Municipal Building

Santa Fe, New Mexico

The population of Santa Fe was 11,176 in 1930. The Spanish tradition, which is strong in New Mexico, is reflected in many of the public buildings erected in the State. This municipal building has stucco walls and loggias in this character.

It is a two-story structure with a small basement for the heating plant. The first floor is occupied by the usual administrative offices for the mayor, clerk, treasurer, attorney, and inspectors, as well as the police court and large council rooms. The second floor is largely devoted to the jail.

The building is of fire-resistant construction, with reinforced concrete floors and roof slabs and masonry exterior walls.

It was completed in December 1937 at a construction cost of $121,131 and a project cost of $129,501.
The new Municipal Building at Ardmore replaces two old structures, one of which was used as the city hall and one as the police station, and makes possible the concentration of all of the municipal departments under one roof.

The building is three stories in height and is 72 by 120 feet in plan. The police department, offices for the street superintendent and health officer, and space for the fire-department apparatus are on the first floor. The second floor is devoted to the council chamber, water department, city manager's office, city engineer's office, and a dormitory for the firemen. Half of the third floor is occupied by the municipal court and judge's offices and the other half houses the jail.

The structure is fireproof with exterior walls of light-colored brick trimmed with stone. It was completed in September 1937 at a construction cost of $110,093 and a project cost of $116,699.
Refugio is one of the oldest towns in Texas, having been incorporated by an act of the Congress of the Republic of Texas on February 1, 1842. It has a population of approximately 3,000 people.

Before completion of the new municipal building, the town was making use of a temporary sheet-iron structure in which not only the fire apparatus but the permanent municipal records were kept.

The new building is two stories in height with hollow-tile walls and partitions. Its stucco exterior, the arcaded entrance, and the tile roof give it the Spanish character which is native to the region.

The first floor contains offices, a meeting room for State officials, garage for two fire trucks, firemen's quarters, and a hall for the use of civic organizations. The second floor is given up to a ballroom with a band platform and concession spaces.

The project was completed in March 1936 for a total cost of $42,952.
Santa Maria, the second largest community of Santa Barbara County, had a population of 7,057 in 1930.

The new city hall centralizes the municipal departments and houses the council, the engineering department, the city court, jail, police and fire departments.

The plan is irregular in shape, approximately 94 x 187 feet, and contains 17,200 square feet of usable floor area.

All of the exterior and bearing walls are reinforced concrete. The roof is wood-truss construction and is covered with handmade mission tile. The building is designed to resist adequately normal earthquake shocks.

The structure was completed during 1934 at a total cost of $68,200.
The city hall at Canby is a good example of a municipal building designed to accommodate most of the departments of a small community.

The structure provides quarters for the council chamber, light and water departments, police and fire departments, and adequate storage space.

The construction consists of concrete foundation walls, brick exterior walls above grade, and frame floors, partitions, and roof. All trim is wood.

The building was completed in March 1937 at a construction cost of $10,850 and a project cost of $11,642.
City Hall, *Santa Cruz, California*

Santa Cruz is 60 miles south of San Francisco on Monterey Bay. In 1930 it had a population of 14,395.

The various departments of the city government are housed in the new city hall around a court on one floor. This project added space to the existing building for the water department, police department, office of the mayor, and council chamber. In the basement there is a rifle range for the police department, storage space, and the heating plant.

The building is semifireproof with concrete exterior walls trimmed with local stone. It is designed to resist seismic disturbances. The roof is covered with shingle tile molded to resemble redwood shakes.

It was completed in September 1937. The cost of construction was $57,674 and the project cost was $61,184.
The new city hall in Lindsay is a U-shaped structure with over-all dimensions of 158 by 65 feet. The wing on the left is used as a hall for public meetings and for sessions of the court. The wing on the right contains rooms for the chamber of commerce and the American Legion. The central part of the building has a room used for a city office with smaller rooms for the chief of police, a record storage vault, and necessary toilet facilities. All of the offices and rooms are reached from an open corridor around the courtyard.

The construction is reinforced concrete and is designed to withstand earthquake shocks. The total floor area is approximately 7,800 square feet. The building was completed in 1936 at a construction cost of $57,804 and a project cost of $65,932.
Suffolk County Courthouse, *Boston, Massachusetts*

Suffolk County has an area of 55 square miles and in 1930 had a population of 879,536.

The new courthouse is located in the downtown business section of Boston. It is rectangular in plan with over-all dimensions of 120 by 158 feet and is 309 feet (25 stories) in height. The basement and basement mezzanine are occupied by 108 cells, 8 padded cells, and kitchen facilities. The building contains 21 courtrooms, a grand-jury room, petit-jury rooms, and offices for the probation department, the clerk of court, sheriff, attorney, and judges. There is a library on the twelfth and another on the thirteenth floor. In general, the courtrooms are 2 stories in height and the mezzanines on the intermediate floors are devoted to jury rooms and other space necessary for the conduct of the courts.

The construction is fireproof throughout. The exterior walls are granite up to the fourth floor, above which they are gray glazed brick trimmed with granite. In addition to the public elevator service there are two elevators for prisoners and one for judges. The corridors and lobbies throughout

*Continued on following page*
Suffolk County Courthouse  
*Boston, Massachusetts*

Continued from preceding page

have marble wainscots and the courtrooms are finished variously in oak, walnut, or mahogany.
The building was completed in April 1939 at an estimated construction cost of $4,483,083 and an estimated project cost of $4,997,027.
This building houses the Appellate Division of the Supreme Court, Second Division, State of New York, and is in the Borough Hall section of the city, near other city and State buildings. On the first floor it contains a courtroom 55 by 57 feet which extends through the second story in height. The judge's chambers, court officials' rooms, and a large library, 38 by 58 feet, are also included.

The plan is rectangular in shape with over-all dimensions of 180 by 87 feet. The structure is fireproof, the exterior walls are light gray granite backed with brick, windows are steel, and exterior doors are copper-covered. There is air conditioning throughout.

The building was completed in October 1938 at a construction cost of $1,044,405 and a project cost of $1,452,162.
Courthouse, Jamaica, New York

This structure houses the 23 civil courts of Queens County and provides quarters for the judges, the clerk of the city court, the grand jury, the district attorney, and the county clerk. In addition, it provides offices for the naturalization bureau, the motor-vehicle bureau, the bar association, the supreme-court board, and the law library.

The building is fireproof, of steel-frame construction, and the exterior is of limestone. The courtrooms are air-conditioned. It is seven stories in height, with two mezzanine floors, and has a basement and sub-basement. The building was completed in June 1939 at an estimated construction cost of $4,960,717 and an estimated project cost of $5,637,189.
Kalamazoo County Building, Kalamazoo, Michigan

The first county building at Kalamazoo was erected in 1835 and was a frame structure 42 by 55 feet and two stories in height. The second, built in 1882, was an ornate, three-story, brick and stone edifice with a central tower and four corner turrets. The new county building is six stories and a basement in height and 90 by 182 feet in plan. Its size reflects the growth, over a century of time, of the area it serves.

It houses two courtrooms with accessory offices and jury rooms, all of the county offices, record vaults, the county jail, and the sheriff's quarters.

It is fireproof throughout, of steel and reinforced concrete, and the exterior walls are faced with limestone. The high base is granite. It was completed in October 1937 and has a volume of 1,400,000 cubic feet. The construction cost was $710,817 and the project cost $742,590.
Courthouse, Covington, Indiana

This building, in addition to housing the county court and its officers, provides space for the county clerk, treasurer, welfare department, county nurses, agricultural department, school departments, record storage, and for certain bodies of the Federal Government.

It is a fireproof structure throughout and the exterior walls are limestone from nearby quarries. A limited amount of decorative stone carving is used on the outside, and the foyers and corridors of the first and second floors are decorated with mural paintings.

The building was completed in July 1937. It has a volume of about 500,000 cubic feet. The construction cost was $228,822 and the project cost $241,545.
Shelby County Courthouse

*Shelbyville, Indiana*

The new courthouse at Shelbyville was erected on a public square in the center of the town on the site of an old pre-Civil War building.

It is a two-story and basement structure with a partial third floor which houses jury rooms and a few offices. In the basement are record offices and record-storage vaults, a community social room with a stage, and various accessory rooms. The first floor contains the commissioner's court and offices for the county treasurer, auditor, assessor, and recorder. On the second floor are the courtrooms and offices for the county clerk and county surveyor.

The construction is fireproof throughout, of steel and reinforced concrete with exterior masonry walls faced with limestone. A considerable amount of carved-stone ornament is used.

The building was completed in April 1937 at a construction cost of $238,868 and a project cost of $253,584.
The new courthouse is 114 by 109 feet in plan. It encloses and makes use of the walls of the old courthouse which was 56 by 92 feet and provided space for the courtroom and accessory quarters.

The new building provides space for the county clerk, county treasurer, county court, circuit court clerk, State attorney, board of supervisors, county superintendent of schools, highway commissioners, tuberculosis clinic, old-age pension board, police, work-relief agencies, and rooms for the grand jury and petit jury.

The structure is fireproof throughout, including the old building where the wood floors were replaced by concrete slabs. The exterior walls are faced with limestone with a minimum amount of restrained ornament.

The building was completed in September 1937 at a construction cost of $204,878 and a project cost of $221,476.
Before the erection of this building the supreme court was housed in the State capitol and its offices were located in rented quarters in various parts of the city. The new structure houses the Tennessee Supreme Court, the Tennessee Court of Appeals, the legal department of the State government, the attorney general and his staff, and an extensive library.

The building is 140 by 87 feet over all and four stories in height. It is fireproof throughout and the exterior walls are faced with marble backed up with brick and tile. The basement contains a garage connected directly with the upper floors by elevators. A complete air-conditioning system was installed. The structure was completed in April 1938 at a construction cost of $629,267 and a project cost of $654,104.
Davidson County Public Building and Courthouse, Nashville, Tennessee

This is one of the few P. W. A. projects for which an architect was selected by competition.

The building occupies an entire block in the city of Nashville and is seven stories and a basement in height. It houses all of the county and municipal offices, as well as four courtrooms with accessory rooms, and in addition, the county jail which occupies the entire seventh floor.

The construction is fireproof, with steel framing and reinforced concrete walls and roof. The exterior walls are faced with limestone and granite.

It was completed in March 1938 at a construction cost of $2,074,869 and a project cost of $2,167,911.
Courthouse and Jail

Jackson, Tennessee

This project consisted of a building 160 by 65 feet in plan and 4 stories and a basement in height. The basement contains offices for the county agent, farm welfare, the Red Cross, the health department, and a receiving room for the jail. On the first floor are the offices for the county clerk, registrar, county superintendent, tax assessor, sheriff, and county judge. The second floor is occupied by 2 courtrooms each 35 by 50 feet and by offices for the clerk of the court, the chancellor, circuit court clerk, and jury rooms. On the third floor, in addition to the upper parts of the 2 court rooms, are offices for the election commissioner and the attorney general as well as additional jury rooms. The fourth floor houses the jail with cells for 80 men and 24 women, and the necessary hospital facilities, kitchen, pantry, and jailer's rooms.

The construction is fireproof, with reinforced concrete frame and exterior walls of brick faced with stone. It was completed in March 1936 at a construction cost of $282,674 and a project cost of $307,798.
Mitchell County is a prosperous agricultural district. Its sound financial condition aided by a grant from the P. W. A. enabled it to erect a court house building and a jail building both much needed in the county. The upper picture shows the court house which is two stories high with partial basement, and the lower picture shows the jail.

The plan is the first floor of the court house. The first floor accommodates the various county officials and the second floor houses the courtroom, judges’ offices, jury room, and witness rooms. The exterior brick walls are faced with marble.

Both structures are fireproof. They were completed in January 1937 at a construction cost of $177,792 and a project cost of $189,348.
The new courthouse at Snow Hill is three stories and a basement in height, 95 by 45 feet in plan, and replaces an obsolete structure built in 1876. The basement provides two offices in addition to the necessary service rooms; the first floor houses all of the county officials; on the second floor are the courtroom and jury rooms; and the third floor is given up entirely to the jail which can house 24 prisoners.

The building is fireproof throughout, the exterior walls being faced with brick, trimmed with stone. It was completed in January 1936 at a construction cost of $101,855 and a project cost of $109,159.
In order to provide quarters for the court, the county officials, and the proper storage of records, Indian River County secured a loan and grant from the P. W. A. with which a two-story courthouse, 116 by 70 feet, was built.

The first floor contains offices for the recorder, auditor, engineer, commissioners, board of health, assessors, school board, and treasurer. The second floor is occupied by the courtroom, the judge’s chambers, jury rooms, and the county clerk. Adequate vaults have been provided in connection with each department for the storage of records.

The building is fireproof throughout and the exterior walls are brick, backed with clay tile and trimmed with cast stone.

It was completed in March 1937 at a construction cost of $65,657 and a project cost of $71,396.
The county commissioners of Grant County secured a grant from the P. W. A. which enabled them to construct this new courthouse to replace an old and outgrown structure.

The new building is 2 stories, a partial third story, and a basement in height and 98 by 60 feet in plan. Offices for the county engineer, county agent, and social security are in the basement. The various county departments are on the first floor. The second floor is occupied by a courtroom together with jury and witness rooms. The partial third story is entirely given over to the jail which accommodates 24 male and 8 female prisoners.

The building is fireproof throughout, with exterior walls of face brick trimmed with limestone. It was completed in January 1939 at a construction cost of $100,694 and a project cost of $106,933.
Peach County Courthouse

*Fort Valley, Georgia*

Peach County was formed in 1924, its area being taken from several adjoining counties. Its form of government is unusual in that it is entirely managed by one man who is called the county ordinary.

There had been no courthouse and no proper place for the storage of records until the completion of the new courthouse in December 1936.

The building is two stories in height and houses all of the county offices, the court, jury rooms, and record-storage vaults. It is fireproof and the exterior walls are red face brick trimmed with wood. The construction cost was $64,391 and the project cost $74,371.
Clay County Courthouse

Liberty, Missouri

The site of the Clay County Courthouse is bounded by four important city streets allowing a wide main entrance approach, an entrance to the first floor from the rear, and an entrance to the ground floor on one side.

The building is rectangular in plan and three stories in height. On the ground floor are offices for the superintendent of schools, the welfare department, the coroner, the county engineer, the supervisor, the county agricultural agent, an assembly room with a platform, a women's lounge, and the necessary utility rooms. The first floor is occupied by the probate and county court rooms, offices for the probate judge, clerk of court, recorder, assessor, and county judges. On the second floor are a circuit court, library, two petit jury rooms, witness rooms, and offices for the clerk of the court, county attorney, judges, and sheriff. There is a small jail in connection with the sheriff's office.

The structure is fireproof and the exterior walls are faced with limestone. It was completed in October 1936 at a construction cost of $263,410 and a project cost of $283,928.
Village Hall, *Bovey, Minnesota*

This small village hall has a distinct Scandinavian flavor and might almost be standing in some Swedish village rather than in Bovey, Minnesota. It is two stories and a basement in height and in the basement houses a garage for the fire department, a large dining room, kitchen and pantry, storage space, and the heating plant. On the first floor are offices for the police department, the council room, a library, and a club room. The second floor is occupied by a large auditorium with a stage and dressing rooms.

The building is steel and reinforced concrete with exterior walls of brick and a roof covered with copper. It was completed in June 1935 at a construction cost of $65,775 and a project cost of $71,000.
Gallatin County Courthouse
Bozeman, Montana

This building is three stories and a basement in height and is 85 by 110 feet in plan. The courtroom and offices for the court officials, jury rooms, etc., are on the top floor. The second floor houses most of the county departments and the first floor provides a large community room as well as offices for the county engineer, superintendent of schools, the health department, county agent, and sheriff.

The building is fireproof throughout and the exterior walls are faced with limestone. It was completed in September 1936 at a construction cost of $224,313 and a project cost of $243,951.
Stark County Courthouse, *Dickinson, North Dakota*

This structure is three stories and a basement in height and is rectangular in plan. The second and third stories are set back from the outer walls of the first story, except at the main entrance.

The basement contains an auditorium, committee and recreation rooms, office for the county engineer, vaults, and storage space. On the first floor are offices for the county judge, auditor, commissioners, treasurer, superintendent of schools, registrar of deeds, county nurse, and work space and vaults. A large courtroom and offices for the district judge, clerk, sheriff, attorney, and court reporter are on the second floor as well as jury rooms and vaults. On the third floor are separate cell blocks for men and women, rooms for the matron and jailer, and a kitchen.

The building is of fire-resistive construction and the exterior walls are light-colored brick with stone trim. It was completed in June 1937 at a construction cost of $191,708 and a project cost of $207,487.
This structure is immediately opposite the present State Capitol Building and is an important unit of a well-developed plan for the State and municipal group, occupying a square which is landscaped and surrounded by streets.

The building is three stories in height and rectangular in plan, and contains the supreme court room, judicial and administrative offices, and a law library as well as the State library.

It is fireproof throughout and the exterior walls are faced with limestone. It was completed in March 1937 at a construction cost of $160,454 and a project cost of $170,642.

Supreme Court and State Library, Cheyenne, Wyoming
Atlantic, the county seat of Cass County, had a population of 5,585 in 1930. It provided a large piece of property bounded by four important streets on which to erect the new courthouse.

The building is three stories and a basement in height and houses all the county officials on the first floor. The second and third floors are occupied by the courtroom, offices for the court officers, and the jail.

The structure is fireproof throughout, with exterior walls of brick trimmed with stone. It was completed in June 1935 at a construction cost of $141,274 and a project cost of $152,872.
This new four-story and basement structure, with a partial fifth story, replaces an old courthouse which was destroyed by fire.

The basement contains offices for the justice of the peace, an assembly room, ladies' parlor, and the necessary utility rooms. The first floor is occupied by the offices of the county treasurer, clerk, assessor, recorder, county engineer, auditor, and superintendent of schools. The district and county courtrooms, with offices for the judges, reporter, and attorneys, are on the second floor. The third floor contains the jury rooms and the upper parts of the courtrooms. The jail occupies the fourth and partial fifth floors.

The building is fireproof and is faced with limestone. It was completed in April 1935 at a construction cost of $199,560 and a project cost of $207,575.
Courthouse and Jail

Oklahoma City, Oklahoma

The new county courthouse at Oklahoma City replaces a structure erected in 1905 which had been outgrown and also had been condemned by the State fire marshal.

It is approximately 132 by 204 feet in plan and 10 stories in height, the jail occupying the 2 top floors. The rest of the building is occupied by courtrooms with the necessary space for the court officials, offices for the county departments, and the vault and storage space. The jail can accommodate 365 prisoners and is entirely modern in lay-out and equipment.

The project was completed in February 1937 at a construction cost of $1,139,699 and a project cost of $1,208,838.
The new Roosevelt County Courthouse replaces a courthouse and a jail which were 37 years old and in poor condition.

On the ground floor are offices, record vaults, an assembly room, and storage and utility space. The first floor is occupied by the sheriff, tax assessor and collector, county clerk, and other public officials. The courtroom, offices for the court officers, jury and witness rooms are on the second floor.

The top floor in the central part of the building houses the jail.

The construction is reinforced concrete and structural steel, and the exterior walls are light buff face brick trimmed with cast stone.

The building was completed in January 1939 at a construction cost of $187,756 and a project cost of $197,381.
Contracts were awarded on December 15, 1934, for the construction of the Grayson County Courthouse. It is a four story and basement building, 140 by 87 feet in plan, and contains on the first floor an assembly room, the tax department, county clerk, auditor, sheriff, the county courtroom, judge's chambers, and a jury room. On the second floor are two large district courtrooms, offices for the district judge and court reporter, and jury rooms. The third floor contains the upper parts of the courtrooms and jury dormitories, while the top floor is entirely occupied by the jail which is arranged to accommodate 150 prisoners, separated into various classifications.

The building is fireproof throughout, with a reinforced-concrete skeleton frame. The exterior walls are faced with light cream-colored cordova stone. A set-back of 7 feet between the walls of the top floor and the parapet wall screens the jail windows from the street.

The project was completed in July 1936 at a construction cost of $298,047 and a project cost of $315,762.
The Alameda County Courthouse is in the city of Oakland across the bay from San Francisco.

The project consisted of the erection of an 11-story building to house the courts and county government. The building occupies the site of the old hall of records and provides approximately 300,000 square feet of floor area.

It houses the superior courts which include 12 court rooms, etc., the justice's court, offices of the district attorney, library, offices of the tax collector, county board of supervisors, clerk, civil-service commission, recorder, treasurer, county library, and other agencies of the county government.

The building is fireproof throughout and is constructed of steel and reinforced concrete. The base and the masonry terrace walls and steps are granite and the walls above the base are finished in concrete.

Continued on following page
Alameda County Courthouse
Oakland, California

Continued from preceding page

Project Calif. 1100–R consisted of an addition to the original contract for the granite base, terrace walls, steps, and steel sash.

The structure was completed in 1936 at a construction cost of $1,657,890 and a project cost of $1,657,890.
The Supreme Court Building was built to relieve the congestion that existed in the State capitol where the supreme court had always been housed.

The new building is occupied by the supreme court with its accessory offices, the attorney general, the State treasurer, and the State law library. The necessary vaults and storage spaces are provided for each department.

It is a semifireproof structure provided with a sprinkler system. The floors are concrete on steel joists, sash are steel, and exterior walls are brick covered with cream-colored stucco. Copings and window sills are brick.

It was completed in August 1937 at a construction cost of $282,443 and a project cost of $316,233.
Courthouse and Jail

*Las Cruces, New Mexico*

The Dona Ana County courthouse and jail is a part two- and part three-story building, U-shaped in plan, with a large patio formed by the walls of the building on three sides and a stucco wall on the fourth. It is designed in the "Pueblo" type of architecture frequently used in the State.

On the first floor are offices for the county clerk, commissioners, sheriff, school superintendent, tax assessor and collector, a library, and record-storage vaults. The courtroom which is two stories in height, is on the second floor together with the judge's chambers, jury room, consultation rooms, witness rooms, and offices for the court recorder, county agent, health officer, and county nurse. The third floor has jury dormitories and a jail which accommodates 24 prisoners.

The construction is reinforced-concrete framing, and the exterior masonry walls are stuccoed. The building was completed in February 1938 at a construction cost of $171,302 and a project cost of $181,594.
Supreme Court and Library, *Carson City, Nevada*

The Supreme Court of Nevada was formerly housed in the State Capitol Building in quarters which were small, inconvenient, and entirely inadequate for the proper and dignified conduct of the court proceedings. The State library, also in the capitol, was in a small annex in the rear of the building.

The new building, two stories and a basement in height and 77 by 100 feet in plan, contains a museum, the library reading room, stacks, an office for the librarian, and offices for the attorney general on the first floor. The second floor contains the supreme court room, 30 by 50 feet in size, as well as offices for the three justices, their secretaries, and clerks.

The construction is reinforced concrete, the exterior walls being terra cotta backed with brick. The building was completed during 1937 at a construction cost of $156,406 and a project cost of $163,433.
State Capitol  
*Salem, Oregon*

The Oregon State Capitol replaces a structure which was destroyed by fire in 1935. It occupies the site of the former building and is the dominating feature of a well-designed city plan. A mall has been laid out from the main facade of the capitol, cutting through several city blocks, which will be flanked on each side by future buildings of the State government, one of which, the State library, has already been constructed.

It is one of the few P. W. A. projects for which an architect was selected through competition.

The first floor is occupied by offices and work space for the land board, State treasurer, the board of control, department of motor vehicles, general office, and a large rotunda from which wide stairways ascend to the floor above on which are the senate chamber and the house chamber. The various offices for the State departments and the Governor’s suite are accommodated on the second, third, and fourth floors.

The building is fireproof throughout. The exterior has a granite base, and the walls are faced with Vermont marble. The sculpture and mural paintings are noteworthy. It was completed in June 1939 at an approximate construction cost of $2,294,000.
Addition to State Capitol

*Phoenix, Arizona*

The addition to the State capitol at Phoenix is a separate building connected to the existing structure by means of a corridor.

It is rectangular in plan, 68 by 167 feet, and is four stories and a basement in height. It is occupied by the supreme court, the superior courts, the law library, the offices of the attorney general, the State historian, and necessary vaults and stacks for the storage of records.

The building is fireproof throughout, with reinforced concrete framing and a steel-truss roof. The exterior walls are brick with tufa stone trim, except the first story which is granite. It was completed in 1938 at a construction cost of $570,717 and a project cost of $605,575.
Hall of Records

Annapolis, Maryland

This building was erected on one end of the campus of St. John's College to provide proper storage for the State records and also to commemorate the three hundredth anniversary of the founding of the Maryland colony. It conforms in character to the colonial architecture of Annapolis both on the exterior and on the interior, in the details of cornices, paneling, stair rails, and other features.

In addition to the stack space, the building provides offices for the archivist, a clerical force, and rooms for repairing old books and manuscripts.

The structure is fireproof with masonry bearing walls, steel beams, and reinforced-concrete floor and roof slabs. The exterior walls are faced with handmade red brick trimmed with limestone and wood. Doors and windows are wood. The stack space is air conditioned to better preserve the old records and parchments.

There are 6,718 square feet in the ground-floor plan and the volume of the structure is 303,400 cubic feet. It was completed in the spring of 1935 at a construction cost of $203,018 and a project cost of $212,780.
The Hall of Records is a much needed addition to the group of State buildings at Dover. It contains offices for the governor and the secretary of state, the research room, the archives lobby, and a vault 19 by 24 feet for the storage of records, on the first floor. On the second floor are offices for the motor-vehicle department and the franchise-tax department.

The building is fireproof throughout. The exterior walls are red brick laid in Flemish bond and the trim is marble and wood. The roof is covered with slate. The finish throughout the interior is in keeping with the eighteenth century character of the structure and a considerable use is made of wood paneling, cornices, and stair rails. Stairs are of marble and the floor of the research room is cork.

Each floor, including the basement, has approximately 4,500 square feet of usable space and the over-all dimensions of the building are 88 by 52 feet. The work was completed in December 1938 at a construction cost of $145,693 and a project cost of $159,785.
The new Finance Department Building of the State capitol group at Harrisburg makes possible the gathering into one building of related units of the State government which were formerly widely scattered.

The monumental character of the structure and the use of stone for the entire exterior was dictated by its position opposite the Educational Building at the northeast end of the Capitol Plaza.

It provides quarters for the departments of the auditor general, revenue, and State treasurer.

It has a volume of approximately 6,800,000 cubic feet and its estimated cost is $4,736,270. It is expected to be completed toward the close of 1939.
State Office Building, Baton Rouge, Louisiana

At the time the Louisiana State Capitol was constructed, it was considered large enough to house virtually all of the administrative offices and departments of the State government. This proved to be incorrect and due to urgent need, the State Office Building, often called the Capitol Annex, was erected about 400 feet distant from the capitol.

It is a part four and part six-story building, rectangular in plan, with over-all dimensions of 130 by 260 feet, and in addition to a large amount of office space, houses the official board room and library.

It has a reinforced-concrete frame and exterior masonry walls faced with limestone which matches as closely as possible the limestone used on the capitol building. The windows are aluminum, ceilings are acoustically treated, and the whole building is air-conditioned.

It was completed in August 1938 at a construction cost of $1,104,395 and a project cost of $1,190,525.
The research work carried on by the department of highways involves the use of highly explosive and inflammable gases and reagents and it was obviously desirable that the laboratory be separated from the other agencies of the department.

The new building is rectangular in plan. It houses the oil, chemical, and sieving laboratories, an office, and ample storage space. The equipment includes electric ovens, water-distillation apparatus, carbon-combustion furnaces, cylinder-braking machines, and other necessary apparatus.

The construction is semifireproof, with exterior walls of concrete, steel-bar floor joists, and steel roof trusses. All sash are metal.

It was completed during 1936 and the project and construction costs were the same, being $38,182.
This P. W. A. project consisted of the erection of a Troop Headquarters Building at Framingham and of four substations in Concord, Hyannis, Shelbourne Falls, and Topsfield. These buildings are similar in architectural character and the substation at Topsfield illustrates them satisfactorily.

The Topsfield Substation is two stories, an attic and a basement in height and 54 by 43 feet in plan. It provides quarters for 12 troopers, as well as the necessary offices. The design is a simple adaptation of Georgian architecture with red brick exterior walls, wood trim, and a slate roof.

The project was later consolidated into and became a part of Project 875 (Mass.). The total estimated cost of the five buildings was $234,190 and the Topsfield Substation was completed in October 1935.
Central Fire House and Police Station, Greenwich, Connecticut

This new structure replaces old and inadequate quarters for the police and fire departments which had been located in the basement of the Greenwich town hall. It faces on three main streets and is separated from the town hall by a private street so that it is entirely free standing.

The building is trapezoidal in plan and three stories in height. It provides the fire department with an apparatus room, a dormitory, a recreation room, a banquet hall, and a kitchen. The police department has a sergeant's room, police-car garage, a pistol range, a police court with its necessary office space and jail facilities. There is also a recreation area provided on the roof.

It is a fireproof structure with a skeleton steel frame, concrete floor and roof slabs, and the exterior walls are faced with limestone above the high base which is granite. An elevator serves the police quarters. The project was completed in February 1939 at a construction cost of $304,748 and a project cost of $326,788.
The city of Greenfield, with a population of 15,500 in 1930, had not only outgrown its old fire headquarters but the location of the old building in the business district had become undesirable due to traffic congestion.

The new building has space for seven pieces of apparatus, as well as the chief’s quarters and a watch room on the first floor. On the second floor are a recreation room, two dormitories, locker room, kitchen, library, officers’ rooms, and the necessary toilets, showers, etc.

The exterior walls are water-struck red brick; the cornices, windows, doors, and cupola are wood; and the roof is slate.

The building is 74 by 82 feet in plan. It was completed in March 1937 at a construction cost of $89,761 and a project cost of $97,503.
The Webster Hose, Hook and Ladder Company No. 3 is a unit of the fire department of Ansonia. Its new building is located in a residential area of the city. The first floor houses the apparatus and the second floor a recreation room, cardroom, and lounge.

The building is two stories and a basement in height, 36 by 46 feet in plan, and is built of red brick with limestone trim and wood floor construction. It was completed in May 1937 at a construction cost of $25,830 and a project cost of $29,780.
The Ohio State Highway Patrol operates from the city of Columbus and has four district headquarters, all radio-connected. Three of these units are in permanent buildings. The Cambridge headquarters has been provided with this new building through the P. W. A., replacing their temporary quarters which had been destroyed by fire.

It stands on a 4-acre site at a high point on the national highway, the site having been selected after tests to determine the best location for radio transmission. The project included, besides the building, the radio tower with its network of buried ground lines.

The barracks building is 64 by 98 feet in plan and is two stories and a basement in height. The basement contains a recreation room, 27 by 62 feet, in addition to space for the utilities. On the first floor are offices, public space, a dining room, a kitchen, the radio dispatch room, and eight bedrooms. The second floor is unfinished at present.

The exterior is brick with stone trim. The roof is covered with slate. The project was completed in November 1937 at a construction cost of $58,432 and a project cost of $62,701.
Central Fire Station

*Louisville, Kentucky*

The rapid growth of the city of Louisville, population 307,745 in 1930, necessitated additional facilities for the fire department. A grant was secured from the P. W. A. with which this central fire station was built, as well as a hospital annex, an extension to the sewerage system, and some park recreational improvements. The total cost of all of these projects was $1,665,230.

The fire station is three stories and a basement in height, approximately 90 by 120 feet in plan, and has a volume of 564,322 cubic feet. In the basement is a swimming pool, 30 by 60 feet. The first floor houses the apparatus and in the rear it has a dining room and kitchen. Offices and dormitories occupy the second floor, and the third floor, which is set back and not visible from the street, houses the fire-alarm system.

The building was completed in June 1937 at an estimated construction cost of $171,198 and an estimated project cost of $190,220.
Memphis is the largest city in Tennessee, as well as being one of the largest inland water ports in the world. Its population in 1930 was 253,143.

An old wooden tower for the training of the fire department had become unsafe and this new masonry structure, six stories in height, has replaced it. The exterior walls are brick, trimmed with limestone, and the floors are concrete. It has an interior stairway and an exterior fire escape and also facilities for drying and storing fire hose.

The structure is 17 by 17 feet in plan and 67 feet in height. The funds for its erection constituted a loan and grant from the P. W. A. and the project cost was $10,055.

Fire Drill Tower, *Memphis, Tennessee*
This fire department substation is one unit of a large project in Shreveport for modernizing the fire and police department stations and equipment.

The building provides space on the first floor for the motorized and other equipment and on the second floor, sleeping quarters for the employees. The hose tower is on the left side. The simple design combined with effective landscaping harmonizes with the residential district in which the station stands. It was completed in January 1935 at a construction cost of $18,933 and a project cost of $19,990.
Fire and Police Station

Hinsdale, Illinois

This building was part of a municipal project which consisted not only of the construction of the fire station and the remodeling of the police station, including the addition of the second story, but the improvement of two city parks.

The completed fire and police station is Georgian Colonial in design. It is built of red brick with slightly projecting brick quoins and the trim and cupola are wood. It houses the fire and police departments, including a cell room. The increased facilities of the police station provide a fireproof garage.

The building was completed in April 1935 at a construction cost of $26,188 and a project cost of $28,598. The project cost, including the work on the two parks, was $51,789.
Fire Department Headquarters, Des Moines, Iowa

This is a modern fire station which includes not only all the necessary facilities for the fighting of fire but also provisions for training, recreation, housing of personnel, and maintenance of all equipment. The building is located in the business district of the city at the intersection of two important streets which are not, however, arteries of excessive traffic. In addition to the building illustrated, the project includes a shop building and a drill tower.

The headquarters building is rectangular in plan, 128 by 117 feet. The apparatus room provides space for five units of rolling stock besides space for cars for the chief and assistant chief. The signal room is completely protected by a fire stop. A large storage room and the captain's office are also on the ground floor. On the second floor are a dormitory, dining room, kitchen, rooms for recreation and instruction, and a handball court, as well as living quarters and an office for the chief and his staff. A hose tower is an integral unit in the building, of sufficient height to accommodate standard lengths of hose.

The building is fireproof, with exterior walls of brick trimmed with stone and some terra cotta. It was completed in January 1938 at a construction cost of $260,778 and a project cost of $281,700.
The construction of this building provided Cedar Rapids with adequate and modern quarters for its police department. The structure is two stories and a basement in height and includes a large lobby, offices for the chief of police and detectives, a pistol range, and a motorcycle patrol room, together with a complete modern radio communication system, as well as the necessary record vaults and other quarters required for the proper functioning of the department.

The building is fireproof throughout. The exterior brick walls are trimmed with stone. It was completed in February 1938 at a construction cost of $113,966 and a project cost of $132,405.
Central Fire Station

Austin, Texas

This building is part of a project which also included the addition of two new wings of approximately 16,500 square feet to the existing city hall, its renovation, the wrecking of an old fire station, and the construction of concrete walks and drives.

The fire station occupies one fourth of a city block and is provided with wide entrances on two streets. It is two stories in height and contains space on the ground floor for fire trucks and equipment, a recreation room, and offices for the fire chief, fire marshal, and the radio broadcasting unit. The second floor is devoted to sleeping quarters for the employees, a kitchen, an assembly room, and a guest room. The hose-drying rack, gasoline pump, and handball court are outside the building.

The fire station has reinforced concrete footings, and solid brick walls, with face brick on the exterior and in the apparatus room. Other rooms have plaster finish. The roof is 20-year composition. It was completed in January 1939 at a construction cost of $43,779 and a project cost of $46,945.
Fire Department

Petaluma, California

The site of this building is 100 by 150 feet and is on the corner of two streets. The building is approximately 80 by 88 feet and is one and part two stories in height. The foundations are concrete and the superstructure is frame with a stucco surface.

The first floor houses seven pieces of fire apparatus, contains a recreation room, office, kitchen, storage room, toilet facilities, and alarm and battery rooms. Dormitories for the firemen, quarters for the fire chief, toilet and locker facilities are on the second floor.

The building was completed in 1938 at a construction cost of $39,403 and a project cost of $43,858.
This armory provides quarters for one battalion of infantry, one battalion of engineers, two medical units, and one division of the naval militia. The large drill hall is on the street level and has banks of seats on two sides. Under these seats are eight company rooms and equipment storage rooms, and on two mezzanine floors are four more company rooms and individual space for future rooms.

The structure is fireproof and is supported on piles. The exterior walls are brick with a granite base and terra cotta trim.

The building is 248 by 321 feet in plan. It was completed in February 1936 at a construction cost of $1,038,276 and a project cost of $1,098,330.
This city is a residential suburb near New York. It has a population of approximately 25,000. The building contains a large riding ring, stable quarters, rifle range, machine shop, repair shop, caretaker's quarters, company rooms, officers' lounge, grill room, and administrative section.

It is fireproof throughout with structural steel frame and concrete floor construction. There are 74,256 square feet on the ground floor. The volume is 2,598,690 cubic feet.

It was completed in November 1938 at a construction cost of $458,469 and a project cost of $498,757.
Farm Show Arena, *Harrisburg, Pennsylvania*

The annual farm show in Harrisburg has the support of about 30 State farm organizations and attracts an attendance as high as 125,000 people per day.

The new arena is of sufficient size to accommodate all livestock judging, with several classes being judged at the same time. The building is 346 by 230 feet in plan and the arena is 240 by 120 feet, with semicircular ends. The permanent seating, which rises in an unbroken ring around the arena, accommodates 8,250. The arena itself, when the hall is being used for conventions, seats 4,250 in temporary seats, thus providing a maximum capacity of 12,500. When the hall is used for boxing or wrestling exhibitions, the seating capacity is 12,000. Temporary seats are stored underneath the permanent seats.

The construction is fireproof. The steel bow trusses are 224 feet between walls and support precast concrete slabs on which composition roofing is applied. The exterior walls are face brick trimmed with rubbed concrete. The volume of the building is 6,760,000 cubic feet. The project, except for the Meeting Rooms, was completed in December 1938 at a construction cost of $1,105,423 and a project cost of $1,196,343.
The Ligonier Armory is the headquarters of Company F, One Hundred and Third Medical Regiment of the Pennsylvania National Guard, and was part of a general program to house properly the military forces of the State.

The building provides a drill hall, 60 by 90 feet, a quartermaster's supply room, a troop room, an orderly room, several officers' rooms, and a six-car garage.

Its design is extremely simple, the exterior walls being red face brick with parapet coping, sills, and trim of stone.

It was completed in June 1938 at a construction cost of $56,942 and a project cost of $64,378.
The addition to the armory at Mount Holly provided quarters for an additional company of infantry and for battalion headquarters. It also provided additional garage facilities, storage and recreation space, and classrooms for officers and men.

The construction is fireproof with exterior walls of brick trimmed with wood. Floor slabs are reinforced concrete and roof trusses steel. The recreation room is finished in knotty pine.

The project was completed in October 1936 at a construction cost of $47,715 and a project cost of $52,748.
National Guard Armory

Canonsburg, Pennsylvania

This armory is the headquarters of Company H, One Hundred and Third Medical Regiment of the Pennsylvania National Guard. The building is also extensively used for public meetings and entertainments.

The structure is two stories and a mezzanine in height. The first floor contains two offices, officers' recreation and locker room, the company property room, a garage, recreation and locker room for enlisted men, a kitchen, and a mobilization room 20 by 60 feet. The second floor, entered from a street on a higher level, is occupied by the main lobby, storage rooms, and the drill hall 70 by 100 feet. The mezzanine forms a balcony overlooking the drill floor.

The building is fireproof. The foundations are concrete, and the frame, columns, and roof trusses are steel. The exterior walls are sand-finished red brick and wood trim with a base of native sandstone. The drill hall floor is designed to carry loaded trucks parked over its entire area.

The project was completed in October 1938 at a construction cost of $85,548 and a project cost of $94,497.
Civic Center, Hammond, Indiana

This structure stands in a 37-acre tract of land which includes a park, a high-school site, fields for baseball, football, and tennis, and extensive automobile parking space.

The building contains a gymnasium-auditorium with 3,156 permanent balcony seats and 2,200 additional removable seats, Boy and Girl Scout headquarters, camera clubs, practice rooms for drama, offices for the recreational director, and a complete lay-out for exercise and minor sports, including a swimming pool.

It is fireproof throughout, faced with brick, trimmed with limestone. Its volume is 2,250,000 cubic feet. It was completed in May 1938 at a construction cost of $448,237 and a project cost of $476,446.
Armory and Office Building  

*Springfield, Illinois*

This is a dual-purpose building which houses three companies of the Illinois National Guard and provides much-needed office space for the State government.

The new building is 5 stories and a basement in height and approximately 189 by 299 feet in plan. In the basement is a large exhibition hall, a rifle range, an ordnance shop, quartermaster stores, and miscellaneous storage space. The drill hall, 118 by 169 feet, is on the first floor. It has a stage, 45 by 110 feet, and with the balconies which seat 3,000, can accommodate 6,500 persons when used as an auditorium. On this floor is also office space for the National Guard, as well as club rooms, committee rooms, a banquet hall, and a kitchen. The second, third, fourth, and fifth floors, on the street sides around the drill hall, provide 13,000 square feet of office space for use of the State government.

The construction is fireproof, of structural steel and reinforced concrete. The exterior walls are limestone. The building was completed in October 1937 at a construction cost of $1,254,460 and a project cost of $1,259,618.
National Guard Armory

*Rockford, Illinois*

The Rockford Armory is one unit of a program to house adequately the National Guard of the State of Illinois. Up to 1938, 15 armories had been constructed in the State and at present three more are under construction in the Chicago area.

The building at Rockford has over-all dimensions of 246 by 183 feet, and it has a total floor area of 69,840 square feet. The drill hall, 180 by 120 feet, has a balcony seating 1,000. It also is provided with a stage, 26 by 57 feet, and around the drill hall are clubrooms, general property and equipment rooms, and a kitchen, in addition to the necessary lobbies, stairs, etc.

The structure is fireproof. The exterior walls are faced with brick of two shades trimmed with limestone.

It was completed in January 1937 at a construction cost of $225,464 and a project cost of $251,478.
National Guard Armory, *Tallahassee, Florida*

This armory houses Company M, One Hundred and Twenty-fourth Infantry, and the headquarters of the Second Battalion of the One Hundred and Sixth Quartermaster Regiment of the National Guard of Florida. These units were formerly housed in quarters over a grocery store in Tallahassee which were neither burglar-nor fireproof, and as a result of an inspection by representatives of the Army, the units were placed on probation until new quarters could be provided.

The armory was erected by the city of Tallahassee with P. W. A. aid, but since the county of Leon was obligated to provide quarters for the National Guard, the county obligated itself to repay the city over a period of 25 years.

The building is two stories and a basement in height and 81 by 135 feet in over-all dimensions. The basement contains a rifle range, locker rooms, and storage space. On the first floor is the drill hall and offices for the commanding officer. Offices and a gallery for spectators are on the second floor.

The construction is semifireproof, with exterior walls of brick trimmed with limestone. The drill-room floor is wood on a reinforced-concrete slab.

The project was completed in June 1935 at a construction cost of $66,197 and a project cost of $74,365.
Municipal Auditorium  
*St. Louis, Missouri*

This auditorium forms an important unit of the St. Louis "plaza group." It faces a large park around which are grouped the city hall, the municipal courts building, the civil courts building, and the soldiers' memorial. It includes 3 main assembly centers, a music hall seating 3,500 with its stage, an arena which can be opened to the stage by raising a 30-ton steel soundproof and fireproof curtain and which has a seating capacity of 12,500, and an exposition hall with an area of 91,000 square feet, providing space for 500 exhibition booths. These assembly centers are served by ticket lobbies, foyers, and a cafeteria and refreshment bar. There are in addition 4 large assembly halls, each with a stage, committee rooms, and offices.

The arena, or convention hall, is U-shaped in plan and may be entered directly from the street by means of 6 ramps. It is served by stairs and elevators as well. The means of exit make it possible to clear the hall of 12,500 people in 10 minutes.

The building is fireproof throughout and is faced on the exterior with limestone. Air conditioning is provided for the entire structure and in summer a 1,200-ton refrigeration plant maintains a temperature differential between the outside and inside air within a range of 15°. The structure had been built before P. W. A. was organized but was unfinished. It was completed in April 1938 at a total construction cost of approximately $6,000,000 of which $2,218,635 was provided by P. W. A. for the finishing and decorating.
This armory at Minneapolis provides quarters for 16 artillery, infantry, and naval units of the National Guard and Naval Militia.

The main drill hall is flanked on each side by balconies underneath which are 16 supply rooms, each with an office and orderly room. There are also a trophy room, medical-examination rooms, officers' rooms, recreation rooms, and storerooms.

The building is 215 by 330 feet in plan and is constructed of reinforced concrete, steel, and brick. The exterior walls have a high granite base above which they are brick with stone trim. The curved roof is supported by hinged steel arches. It was completed in January 1936 at a construction cost of $698,202 and a project cost of $932,453.
This structure is in reality a community center and provides for athletics and for social and educational activities.

The arena, which is approximately 100 by 200 feet, is surrounded by bleacher seats. There are rooms for the American Legion and the Ladies' Auxiliary, lounges, billiard and card rooms, and administrative offices. A large curling rink approximately 130 by 200 feet has a small gallery for spectators, a curlers' clubroom, lobby, and locker room.

The building is constructed of reinforced concrete and the exterior walls are faced with light-colored brick. The roof of the arena is arched and supported by hinged steel trusses, thus providing a clear floor area.

The project was completed in December 1935 at a construction cost of $528,293 and a project cost of $549,438.
Community Building

Ely, Minnesota

This building serves the city of Ely as a community and recreation center. It is three stories and a basement in height and 125 by 78 feet in plan. In the basement are a meeting room, a cafeteria, serving room, and kitchen. The first floor is occupied by a library, a lounge, meeting rooms, a kitchen, office, and work space.

The large auditorium with its stage, meeting rooms, a kitchen, and storage space are on the second floor. The third floor contains the fan room, a projection booth, and storage space.

The floor slabs and stairs are reinforced concrete, and the auditorium is spanned by steel trusses. All exterior walls are faced with stone. An air-conditioning and cooling system made possible the use of glass block panels in lieu of windows.

The building was completed in February 1938 at a construction cost of $208,748 and a project cost of $229,416.
Municipal Auditorium

*Valley City, North Dakota*

Valley City is on the Sheyenne River in the southeastern part of the State. It had a population of 5,268 in 1930.

The new auditorium provides a large foyer from which one enters the main auditorium, which is provided with a stage and gallery. There are, in addition, meeting rooms, a dining room, a kitchen, and the necessary utility rooms. The main floor of the auditorium seats approximately 1,200 people, and the balcony accommodates approximately 400 more.

The building is semifireproof. The exterior walls are brick with a small amount of limestone trim.

It was completed in July 1937 at a construction cost of $99,470 and a project cost of $115,332.
Auditoriums and Armories

Municipal Coliseum, Fort Worth, Texas

At the time of the Centennial Exposition held in Fort Worth in 1936, the city officials determined to erect several permanent buildings that would maintain their civic usefulness after the closing of the exposition. Among the most important of these were the Coliseum and the Memorial Tower.

The Coliseum provides an area 125 by 250 feet in which horse and stock shows can be held, as well as rodeos and athletic exhibitions.

The building is 232 by 405 feet in over-all dimensions. The arena is surrounded by tiers of seats under which is a concourse 17 feet wide extending around the building and connecting with the seating space at short intervals, thus assuring easy circulation. Near the performers' entrance are a stock chute and cattle pens.

The construction is semifireproof. The walls and partitions are masonry, the balcony is reinforced concrete, and the wood roof is supported on steel trusses. The arena is enclosed by a concrete wall and its floor is earth. The exterior walls are faced with a light-colored brick trimmed with stone and terra cotta.

The Memorial Tower is midway between the Coliseum and the auditorium building and is connected with both by covered passageways.

The project was completed in February 1937 at a construction cost of $581,580 for the Coliseum and $116,836 for the Tower. The project, of which the Coliseum and the Tower were a part, included seven major buildings and had a total cost of $1,902,808.
The rapid and continuous growth of Houston and its surrounding territory was accompanied by an increased demand for facilities to care for the numerous conventions and expositions held there each year.

The large exposition and convention hall constructed by the city with P. W. A. aid is T-shaped in plan and 402 by 426 feet in its over-all dimensions. It contains the exposition hall with a seating capacity of 6,500 and an arena 150 by 285 feet, a music hall seating 2,500, a large stage between these 2 halls with a proscenium arch 50 feet wide on the music hall side and one 70 feet wide on the side of the exposition hall, and numerous conference and committee rooms.

The building is semifireproof. It is framed with steel and reinforced concrete, and the exterior walls are a light-colored face brick trimmed with stone. The arena has a mastic floor on concrete for use during horse shows and rodeos and is provided with a sectional wood floor in panels, 5 by 10 feet, which can be put down when the hall is used for conventions.

The project was completed in May 1938 at a construction cost of $1,189,811 and a project cost of $1,329,508.
Before the erection of this auditorium, Oklahoma City had no place which could seat more than 2,000 people where public meetings could be held.

The new municipal auditorium has remedied this condition. It contains an auditorium with a seating capacity of 6,000, a small theater seating 400, a convention hall seating 900, 22 small committee rooms, and an exhibition hall with a floor area of 38,000 square feet. The auditorium stage is sufficiently large and well equipped to permit the production of plays and operas and to accommodate large orchestras and can be used also for convention purposes.

The building is semifireproof. The exterior walls are faced partly with limestone and partly with brick trimmed with limestone. All the ceilings of the auditorium, committee rooms, and the basement exhibit space are acoustically treated.

The project was completed in August 1937 at a construction cost of $1,146,783 and a project cost of $1,205,000.
Memorial Auditorium

_Fresno, California_

The city of Fresno has a long-range program of civic development and this auditorium is an important unit of this plan.

The building is approximately 170 by 236 feet in over-all dimensions. The auditorium is 100 by 140 feet and is provided with a stage, 35 by 100 feet, and a gallery around three sides. A large foyer, committee rooms, and the necessary services are included in the facilities.

The construction is reinforced concrete designed to resist seismic disturbances, and the exterior finish is in concrete. The project was completed in December 1936 at a construction cost of $406,292 and a project cost of $517,903.
The auditorium at San Jose is an adaptation of the Spanish colonial architecture of California, and its stucco walls and red-tile roof harmonize with its semitropical setting.

The building has an area of 50,000 square feet and consists of the auditorium which seats 3,500, a small theater seating 597, a meeting hall seating 400, 2 exhibition halls, 5 committee rooms, quarters for the chamber of commerce, and the necessary service rooms. The auditorium has a large and well-equipped stage. The project was completed in April 1936 at a construction cost of $422,628 and a project cost of $530,515.
The Klamath Armory houses units of the National Guard and is used also as an auditorium for large gatherings.

The over-all dimensions of the building are 134 by 173 feet, and it contains the drill hall 70 by 110 feet, a stage, a battery club room 22 by 52 feet, a banquet hall 22 by 52 feet, kitchen, quartermaster’s supply and ordnance rooms, officers’ rooms, and locker rooms.

The exterior walls are brick trimmed with cast stone. It was completed in September 1935 at a construction cost of $93,731 and a project cost of $126,238.
Teaneck is a rapidly growing residential community in the metropolitan area of New York City. The former library building became inadequate. Alterations were made to the present building and two end wings were added. The old portion is shown in the middle of the photograph.

The wing at the left is divided by low shelving into three spaces for delivery, reading, and reference. The lower portion of the walls is covered with continuous book shelving. The wing at the right contains the children’s room, document vault, toilets, and the librarian’s room, office, and kitchenette.

The exterior walls are brick with wood cornices and stone insets. The roof is slate. The interior partitions are cinder or terra-cotta block. The floors are covered with linoleum. The left wing is 32 by 68 feet and the right wing is 24 by 56 feet.

The building was completed in December 1936 at a construction cost of $55,865 and a total project cost of $60,246.
Public Library

Harrison, New Jersey

The town of Harrison is in an industrial section immediately to the east of Newark. It was well supplied with public schools but had no public library facilities. This building is in a residential neighborhood.

The over-all dimensions of the building are 94 by 60 feet. In the basement there are a community room, staff room, workroom, boiler room, and toilets. On the first floor are a reading room, a stack room, and librarian’s office. There is an exhibit room on the mezzanine floor.

It is fireproof with concrete floors, steel trusses, and brick bearing walls. The roofing is slate.

It was completed in February 1938 at a construction cost of $79,041 and a total project cost of $112,273.
Public Library, *Allenstown, New Hampshire*

Allenstown, with a population of 1,549 in 1930, is on the Suncook River about 6 miles southeast of the city of Concord. Before the erection of this building the public library had been housed in a private home.

The library is located in a residential section of the town. It is a T-shaped structure and contains an entrance lobby, a workroom, and a reading room for adults and one for children. Each reading room has a fireplace and book shelves all around the room.

The building is semifireproof. Its exterior walls are brick backed up with hollow tile, the trim is wood, and the roof is covered with slate. Its over-all dimensions are 44 by 31 feet.

It was completed in October 1934 at a construction cost of $11,822 and a project cost of $13,138.
Roselle is a borough situated approximately 3 miles west of the city of Elizabeth and had a population of 13,021 in 1930. It is a suburban residential community for the industrial center of Elizabeth and Newark.

The old library occupied rented quarters in a nonfireproof building. The new library is carried out in brick with wood trim and provides a large reading room, a book stack room, and a librarian’s office on the first floor; a mezzanine story for book stacks, and a basement containing a clubroom as well as the heating plant. The reading room has a vaulted ceiling of sand-finished plaster, walls entirely paneled in wood, and an asphalt tile floor.

The over-all dimensions of the building are 70 by 66 feet. It was completed in November 1937 at a construction cost of $41,918 and a project cost of $46,177.
This building is next to a town hall and replaces a small and inadequate building.

The new building is on a lot 200 by 340 feet, and has a ground-floor area of 6,000 square feet. It has a volume of 201,000 cubic feet. It contains rooms for the D. A. R., a reference room, children's reading room, workroom, two administrative rooms, six stack rooms, kitchenette, and a repair room. Its over-all dimensions are 94 by 73 feet. Each side wing is 25 feet wide by 54 feet long.

It is fireproof, and the walls are red hand-made brick, with marble trim. Cornices and the entrance are wood. It was completed in November 1937 at a construction cost of $120,559 and a project cost of $130,944.
Topsfield Library, *Topsfield, Massachusetts*

The town of Topsfield received a bequest for the purpose of building a public library. The P. W. A. aided in the enterprise with a loan and grant totaling $15,300 which represented about 40 percent of the project cost.

The building as constructed is T-shaped in plan and can accommodate the 17,000 volumes already owned with space for expansion. There are adult and children's reading rooms, delivery room, a librarian's office, and 2 stack rooms.

The construction is semifireproof. The foundation walls are concrete, the walls above grade are brick with some cast stone and some wood trim, and the roof is slate. It was completed in February 1935 at a construction cost of $36,593 and a project cost of $38,533.
Lockport Public Library

Lockport, New York

The Lockport Public Library project was begun as the result of two generous bequests from citizens of the town. It was carried out with the assistance of municipal and P. W. A. funds.

The building is H-shaped in plan and is set back from the street, which provides a small yard in front separated from the street by an iron fence. It contains an entrance hall, 2 reading rooms, exhibit room, stack room, an office for the librarian, cataloging room, and a director's room. In the basement are receiving and stack rooms, the children's room, and an auditorium seating 250.

The construction is fireproof. The entrance steps are granite, the main facade is limestone, the roof is slate, and the cupola is wood. The auditorium and the children's room each have separate entrances from the outside.

The project was completed in May 1937 at a construction cost of $131,980 and a project cost of $142,063.
The Pennsylvania State College was founded in 1863. Its annual enrollment is approximately 4,800 men and 1,100 women. The college had lacked space for 1,000 students annually.

Other buildings were constructed for liberal arts, forestry, education, mineral industries, agricultural science, electrical engineering, chemistry and physics, agricultural engineering, and the poultry group, as well as a service building.

The library building has four stories in the middle tower portion and two stories in the three wings, with half basement throughout.

On the first floor there are an exhibition foyer, three reading rooms, five staff rooms, and a stack room. On the second floor are the main reading room, offices for staff, and stack room. On the mezzanine floor are a stack room and offices. On the third floor are special reading rooms, and on the fourth floor are offices and seminar rooms.

The structure is fireproof. The exterior walls are light-colored face brick. The estimated construction cost was $502,870 and project cost approximately $553,160.
Howard University is an institution in Washington for 2,000 Negro students. This building is on the University quadrangle and is one of a number of buildings on the campus constructed by the Department of the Interior. It contains much additional space for future bookstacks. It is fitted for broadcasting chapel exercises over the campus. The building is air-conditioned.

It is of fireproof construction. The roof is covered with slate and the trim on the brick walls is limestone. The clock tower is 167 feet in height.

The building contains approximately 1,668,400 cubic feet. It was finished in November 1938 at a construction cost of $1,045,195 and a project cost of $1,090,566.
Annex to the Library of Congress

*Washington, D. C.*

The Library of Congress, completed in 1897, has a capacity of 5,000,000 volumes. The rapid increase of collections necessitated the annex, which has an available floor area of 20 acres and a capacity of 9,000,000 books. In addition to the catalog and reading rooms, there are 172 study rooms arranged on 2 levels, each with outside light. A tunnel connects the main building with the annex.

The building is faced on the exterior with white marble. It was completed by the Office of the Architect of the Capitol in 1938 at a total cost, including land and equipment, of $9,300,000. P. W. A. contributed $2,800,000.
This public library serves the city of De Pere and the rural area in the southern part of Brown County, Wisconsin.

The main unit is 24 by 80 feet. It has a large reading room, stack room, and reference room which has a fireplace. The children's department is in a wing 27 by 52 feet, and the librarian's office is adjacent to it. The rural library, about 20 feet square, serves primarily as a supply center of the traveling rural library.

The building is faced with local limestone in variegated colors.

It was finished in January 1937 at a construction cost of $27,406 and a project cost of $33,275.
Main Public Library, Massillon, Ohio

The main public library is a joint undertaking of the city of Massillon and its school system. The project included the construction of the main library, the remodeling of the adjacent museum, and the erection of a branch library in another part of the city.

The main library was constructed as an addition to the city museum. It is irregular in plan and 120 by 87 feet in its over-all dimensions. On the first floor are the main reading room, reference room, librarian's room, and the stack room. The basement, due to sloping ground, is well lighted and contains the children's reading room, story-hour room, and a lecture room seating 200.

The red-brick exterior is trimmed with wood and stone and effective use is made of wrought iron. The project was completed in September 1937 at a construction cost of $177,009 and a project cost of $193,536.
This building at Elbow Lake houses the public library and also serves as a community building. It is one story and a basement in height and contains the library with a separate entrance on one end, and a community room with a stage and a kitchen, and two clubrooms which are provided with an entrance and a lobby of their own. The clubrooms are separated by a folding partition so that they can be used as one room.

The structure is semifireproof with exterior walls of brick trimmed with stone. The project was completed in May 1934 at a construction cost of $33,670 and a project cost of $37,329.
Public Library, New Philadelphia, Ohio

The circulation of library books in New Philadelphia doubled in a period of 6 years, reaching 133,000 in the first 6 months of 1935. The public library is also the library for the county schools.

The new building, which was badly needed, is 2 stories in height and 104 by 53 feet in over-all dimensions. It houses on the ground floor an auditorium seating 200 with a well-equipped stage and a research reading room, and on the first floor, adult and children's reading rooms, a control room between the two, and the stack room.

The structure is fireproof. The exterior walls are faced with red brick trimmed with limestone. It has a volume of 172,000 cubic feet and was completed in December 1936 at a construction cost of $54,195 and a project cost of $57,876.
Oak Park Public Library, Oak Park, Illinois

The city of Oak Park is entirely surrounded by the city of Chicago. This building is located in the residential section.

It contains an assembly room for community use, seating about 100, located in the basement with a separate entrance. It has a room for children, located at the rear over the small auditorium. The shelves and stacks divide a book capacity of approximately 30,000 volumes.

The first-floor construction is reinforced concrete with brick bearing walls. The roof is supported by exposed ornamental wooden trusses. The ceilings and walls have been covered with acoustical material.

The building was completed in October 1936 at a construction cost of $55,686 and the land cost approximately $10,000. The total project cost was $59,337.
University of Virginia, Charlottesville, Virginia

The attendance at the University of Virginia had risen to 2,700 students and the accommodations for the library in the rotunda building had become entirely inadequate. The university, accordingly, secured a loan and grant from the P. W. A. and erected the new "Alderman Library" building.

Due to great differences of level on the site, the building is two stories high on the front and five stories in the rear. The basement contains a receiving room and general storage. On the first floor are offices, archives, and stack space. The second floor is occupied by reserve book rooms, rooms for public documents, and stack space. The third floor, which is the main entrance floor on the front, contains the memorial hall, a large general reading room, offices, and stack space. On the fourth floor are seminar rooms and faculty study rooms. The building is fireproof throughout. The exterior walls are red brick with stone and wood trim. Heat is supplied from the central heating plant of the university. The project was completed in June 1938 at a construction cost of $868,810 and a project cost of $944,923.
The State Teachers College has a student body of 2,200 and the library building has been outgrown entirely. At the time the library was built the student body was only a third of its present size and there were only 222 seats in the reading rooms.

This project consisted of a large addition to the rear of the existing building and was carried out in the same type of architecture and construction as the old building and greatly increased its facilities.

The addition is fireproof throughout, its exterior walls being brick trimmed with limestone. It was completed in January 1936 at a construction cost of $89,613 and a project cost of $96,075.
Library, North Carolina State College

*Durham, North Carolina*

North Carolina State College was chartered and organized in 1925 as a coeducational college of liberal arts for Negroes. Its present student body is approximately 280.

A grant from the P. W. A. enabled the State to erect a library, an auditorium, and seven residences and a men’s dormitory.

The library is a one-story-and-basement structure 97 feet by 71 1/2 feet in over-all dimensions, which contains storage rooms and a heating plant in the basement and reference rooms, study rooms, and book stacks on the first floor and on a mezzanine.

The construction is fireproof. The exterior walls are brick with cast-stone trim and a wood porch and cornice. The roof is slate-covered.

The entire project, including the library, was completed in December 1937 at a total cost of $281,467.
Rochester is in Olmsted County in the southeastern section of Minnesota. In 1930 it had a population of 20,621.

This library contains a distribution room, reading rooms for adults, and reference and stack rooms. It has a special feature in providing a children's room as a self-contained unit, with a separate entrance from a side street and small-size furniture for juvenile use.

The building is fireproof and is 121 by 107 feet over all. It was completed in July 1937 at a construction cost of $169,975 and a project cost of $178,548.
The new public library in Fort Worth is triangular in plan due to an irregular site. The main entrance is on the truncated point of one of the angles and leads into a spacious entrance hall. The stack room occupies the central portion of the building and is surrounded by the reading rooms, two of which are entered directly from the entrance hall and the third is approached through two corridors. Ample administrative offices and study rooms are provided.

The structure is fireproof. The frame is reinforced concrete and the exterior walls are faced with limestone. The principal rooms are paneled in wood and their ceilings are acoustically treated.

The project was completed in June 1939 at a construction cost of $370,688 and a project cost of $390,861.
The University of New Mexico has undertaken quite an extensive building program with the assistance of the P. W. A. One unit is the university library, which has been designed in the traditional “Pueblo” or “Santa Fe” style, and is an adaptation of the native Indian architecture of the State and conforms in character to the other buildings on the campus.

The building consists of a 9-tier fireproof book stack with a capacity of approximately 230,000 volumes. Around the stack on the first floor are grouped reading rooms, reference rooms, and the distributing service, and on the second floor additional reading and reference rooms, seminar rooms, and study rooms. Five hundred and eighty students can be accommodated in these rooms, which is 40 percent of the student body of the university. The structure is so designed that future additions can be made to both the stack and reading rooms with great ease.

The entire project of which the library was a part was completed in April 1938 at a total project cost of $694,086. The construction cost of the library building was $328,834 and its project cost $364,164.
Administration and Library Building
University of Texas
Austin, Texas

The dominating building of the university group is the administration and library building with its lofty tower and belfry containing a carillon of 16 bells. Ultimately it will be entirely devoted to the university library but at present is occupied by the administrative offices, classrooms, and seminar rooms, as well as the library.

Periodical and reserve reading rooms, offices, and the stenographic bureau are on the ground floor. The first floor is occupied by offices of the president, board of regents, dean, and comptroller, a post-office substation, and library offices. On the second floor are administrative offices, a large room for university functions, library reading room, and classrooms. A cast museum, research collections, and seminar rooms are on the third floor. The tower is designed for stack space but is being used at present for seminar rooms.

Construction is fireproof, of steel and reinforced concrete slabs. The exterior walls are faced with limestone with granite trim. The project was completed in August 1937 at a construction cost of $1,736,183 and a project cost of $1,864,385.
Arkansas Polytechnic College

Russellville, Arkansas

One of the new buildings recently erected at the Arkansas Polytechnic College was the library.

It has a stack room with a capacity of 53,000 volumes and there is additional shelving in the reading rooms. The delivery room is flanked by 2 reading rooms, each 36 by 47 feet, and there are in addition a conference room, faculty room, workroom, and office.

The structure is semifireproof. The exterior walls are red face brick with some stone trim and concrete base. The portico, cornices, cupola, and some of the trim are wood.

The project was completed in August 1936 at a construction cost of $55,234 and a project cost of $59,883.
Before construction of this new building, the library of the University of Arkansas was housed in the nonfireproof administration building.

The new structure has a capacity of 265,000 volumes and furnishes study desks for approximately 600 students. In addition, there are cubicles in the stack room where research work can be carried on.

The basement has a museum across the entire front of the building, including work space, receiving, storage, and utility rooms. On the first floor are browsing and research rooms, offices, and seminar rooms. The main reading room extends the full length of the building on the second floor and there are also on this floor catalog and delivery rooms and offices.

The structure is fireproof, with exterior walls faced with stone. It was completed during 1935 at a construction cost of $434,590 and a project cost of $464,753.
During the 2 decades from 1910 to 1930 the population of Ponca City increased from 2,500 to over 16,000 people. As a result of this, the small Carnegie library that the city owned had become totally inadequate.

The city erected the new building which is one and part two stories in height. It contains a reading room for adults, a junior reading room, children's room, reference room, delivery room, workroom, and a librarian's room, as well as the necessary stack space.

It is a semifireproof structure with light-colored brick walls elaborately trimmed with terra cotta. The foundation walls and floors are reinforced concrete.

The project was completed in December 1935 at a construction cost of $80,019 and a project cost of $100,644.
The old library at Visalia had become too small, was difficult to enlarge and was not in a suitable section of the city for centralized public use. The site selected for the new library is in a public park in the center of the city.

Its central portion, 36 feet square, extends two stories in height thus providing light and ventilation for the circulation room. There are four wings, one each for adults' reading room, children's room, reference room, and bookstacks.

The building is constructed of reinforced concrete with exposed hand-hewn wood roof trusses and is designed to resist seismic disturbances. The interior has been treated throughout with acoustical materials.

It was completed in June 1936 at a construction cost of $33,076 and a project cost of $35,394.
The city of Alameda is in the environs of Oakland, lying south of it. In 1930 it had a population of 35,033.

In preparing the design for the new library building, much attention was devoted to acoustics and to the material and artificial lighting of the main reading room. The results have been most satisfactory.

The building was constructed with rigid concrete framing, designed to withstand seismic disturbances. The roof is covered with Spanish tile.

The project was completed in July 1936 at a construction cost of $25,883 and a project cost of $32,826.
Chaffey Junior College Library, Ontario, California

This library was built as a memorial to George and Benjamin Chaffey, brothers, who were early settlers in this city and developers of it.

It contains library facilities for both the high school and junior college pupils and is situated on the campus between the two schools. It contains 13,591 square feet of floor area. The stack room, 32 by 52 feet, has a capacity of 50,000 volumes in its two stories. The reading rooms and the memorial hall have been treated acoustically.

The entire school plant has an enrollment of about 2,200 pupils. The building will accommodate 250 persons. It is constructed of reinforced concrete and designed to withstand seismic disturbances.

The project was completed in October 1935 at a construction cost of $85,137 and a project cost of $92,021.
The new library building at the University of Utah replaced the old and inadequate quarters which were situated in the administration building. Its over-all dimensions are 194 by 127 feet and it provides 66,000 square feet of floor area.

On the ground floor there are two undergraduate reading rooms, a medical reading room, a treasure room, and rooms for instruction, for the staff, and for bookstacks. On the second floor is the general reading room, 47 by 192 feet in size, extending through 2 stories. It accommodates 350 students. On this floor are also a periodical room, 43 by 76 feet, accommodating 124 students, 3 librarians' rooms, a vault, a cataloging room, and the main bookstacks which cover an area 37 by 104 feet. The third floor contains 2 graduate reading rooms as well as seminar and study rooms.

The building has a concrete frame which is faced with stone and it is fireproof throughout. It was completed in October 1935 at a construction cost of $496,020 and a project cost of $524,301.
Public Library

_Glendale, Arizona_

The city of Glendale has replaced an old wornout structure with this little public library which, with its painted brick walls and Spanish tile roof, fits into its setting of palms and other semitropical trees and shrubs.

It is one story in height, without a basement, and contains reading rooms for adults and children, stack space, a workroom, and an office. A small room next to the office houses equipment to air-condition the entire building.

The building is semifireproof. Exterior walls are brick, the floors concrete, and the roof wood under the tile covering. It has a floor area of 2,000 square feet and was completed in March 1938 at a construction cost of $10,622 and a project cost of $11,626.
McMinnville Library, McMinnville, Oregon

This library adjoins a small university and conforms to the campus plan. The basement contains book stacks and reading rooms. The first floor has two reading rooms, book stacks, and office rooms.

The floors and walls are reinforced concrete with brick veneer exterior. Finished floors are asphalt tile. The roofing is asbestos shingles.

The project was completed in November 1936 at a construction cost of $59,586 and a project cost of $65,437.
This structure is the first of the buildings which will ultimately compose the "Capitol Group" on the plaza which leads to the State capitol. It includes the stack space which occupies the entire central rear portion, the vaults and rooms connected with the library, and also 57,200 square feet of floor space for offices of various departments of the State government. The stack space is furnished with elevators and a book conveyor.

The construction is fireproof and the exterior walls are faced with marble. The building was 98 percent completed in June 1939, the estimated construction cost being $803,445 and the project cost $871,119.
This War Memorial Building serves the city of Holyoke as a community center.

The ground floor contains a large room for dances and entertainments, a kitchen, and a men's lounge in addition to the various service rooms.

The first floor is entered through a portico and includes a lobby, an auditorium with a stage and dressing rooms, the memorial hall, a lounge, cardrooms, a billiard room, women's lounge, and offices for the commission and custodian. The second floor has the auditorium balcony, the organization rooms, and two offices.

The construction is fireproof and the two street facades have a granite base and limestone walls. The rear walls are brick.

The project was completed in September 1937 at a construction cost of $204,785 and a project cost of $221,605.
Restoration of Old Economy

Ambridge, Pennsylvania

Economy is a small town 17 miles below Pittsburgh on the Ohio River and was founded in 1824, as part of a social and economic experiment, by the Harmony Society. The society became extinct because its members took a vow of celibacy shortly after its foundation and today there is only one person alive who was in any way connected with it.

The industrial life of Economy included the making of cotton and woolen cloth, distilling of whisky, making of wine, and milling of flour, and buildings of many kinds were required. In addition, a meeting hall, hotel, church, shops, the Great House and the Feast Hall were built, and the last is illustrated above. The other illustration is a garden pavilion surrounded by a fishpond.

Careful research has been done and is continuing and the whole restoration is by no means complete. The part undertaken with P. W. A. aid was completed in July 1938 at a construction cost of $32,164 and a project cost of $37,175.
Morristown National Historical Park, Morristown, New Jersey

The American Army under General Washington occupied the site of the Morristown National Historical Park throughout the period of the War of the Revolution, both for a camp and for a hospital. General Washington spent two winters here.

At the time when the Government acquired the property, the buildings were in very poor condition and the projects carried out and financed under P. W. A. included the restoration of the Guerin house, the restoration of the Temp Wick house and its outbuildings, the construction of a replica of one of the log buildings such as were used for hospital purposes, and the construction of the museum and library building shown above.

The museum contains many relics of General Washington and of the period of the Revolutionary War, and the auditorium is frequently used for lectures on historical subjects.

The architectural character of the building is entirely in keeping with the colonial buildings of this part of New Jersey. The exterior walls are stucco with wood trim and the construction is entirely fireproof. The building was completed in February 1937 at a construction cost of $139,141.

This structure contains a large auditorium, exhibition and museum rooms, workshops, and offices, and it is the headquarters of all of the exhibitions and all phases of the work carried on in the park.
One of the restorations carried out by the National Park Service was that of the old Pierce Mill in Rock Creek Park. The structure was built in 1810 of native split stone taken from a nearby quarry, and with its 10\%-foot wheel and equipment for grinding meal is typical of the old mills of a bygone age.

The building is 50 feet long by 40 feet wide. One gable is stone and the other frame, and the small wood sash have heavy muntins and small panes of glass. The floors are wide oak plank and the roof is covered with wood shingles. The equipment has been faithfully reproduced.

The project was completed in March 1936 and the total P. W. A. allotment for the restoration was $26,614.12.
Before the erection of this art museum, the city of Richmond had no building suitable for the exhibition and storage of works of art. The structure is placed on the grounds of the soldiers' home and the area surrounding it has been landscaped with lawns and planting.

The building is fireproof and is approximately 120 by 134 feet in plan. It is constructed of steel and reinforced concrete and the exterior walls are faced with stone up to the second floor level and with a red Virginia brick trimmed with stone above that.

The project was completed in November 1936. Its total cost was $287,974, of which $76,523 was provided by the P. W. A. as a grant, the remainder being provided by the Virginia Art Commission.
Passenger Building and Freight Shed  
*Colonial National Historical Park, Virginia*

The Colonial National Historical Park, carried out by the National Park Service, embraces Yorktown, Jamestown, and Williamsburg. The passenger building, freight shed, and wharf at Yorktown were required to care for the traffic by water and have been designed in the style of similar buildings of the Colonial period. The passenger building is frame construction and the freight shed is brick. The wharf is concrete and was completed in January 1936 at a cost of $55,758.33.

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Headquarters Building, Swan Tavern  
*Colonial National Historical Park, Virginia*

The headquarters building is a reconstruction of the Swan Tavern on its original foundations. The design conforms to all evidence that has been gathered regarding the original structure and provides a central hall with four rooms opening from it on both first and second floors. The basement contains workrooms and a fireproof record vault. The project includes a stable and smokehouse and was completed in December 1934 at a cost of $38,260.
In the beginning of the P.W.A. practically every one of the national parks received financial assistance from it. Some of the parks and monuments were new and unimproved and others needed finishing. Among the many buildings were the Administrative Building and Museum near Hot Springs, Arkansas, the Administrative Building and Museum at Chickamanga, and the restoration of Fort Pulaski in Virginia. This old fort was built in 1810. The project consisted of repairs and rehabilitation and provision of space for a museum.

The work was completed in July 1936 at a construction cost of $76,453.
This building was erected as a memorial to soldiers who lost their lives in the World War. In the center hall on the first floor is a black granite cenotaph bearing the names of the soldiers. On each side is a museum containing World War relics, records, and other data. Surrounding the structure are 38 square columns, 5 by 5 feet, and 35 feet high.

The building is one unit of a well-planned civic center, the construction being of steel and reinforced concrete. The walls are faced with limestone. Marble and granite were used extensively. It is 190 by 89 feet, and 67 feet high.

It was completed in July 1939 at a construction cost of $715,684 and a total project cost of $760,973.
Art Museum

Wichita, Kansas

Wichita is in the southern central portion of the State. In 1930 its population was 111,110.

Under the will of a citizen, the income of a certain property was to be used to purchase an art collection. The will stipulated that a suitable building was to be provided for this collection by the city. The city constructed this first section of what is to be in the future a large museum. It also contains classrooms on the ground floor for the study of art.

The building is fireproof, is two stories high, and approximately 61 by 63 feet in plan.

This project was completed in July 1935 at a construction cost of $70,127 and a project cost of $78,197.
At the time of the Texas Centennial Exposition at Dallas in 1936 certain of the buildings constructed were made permanent, and one of these was the Museum of Natural History. The structure is two stories in height and 71 by 224 feet in plan. The spacious entrance lobby connects with numerous exhibition halls containing cases in which are shown specimens of the plant and animal life of Texas.

The building is semifireproof. The frame is reinforced concrete and the exterior walls are stone. Texas shell stone is extensively used on the interior, with bases of marble and floors of rubber tile.

The project was completed in August 1936 at a construction cost of $248,387 and a project cost of $261,108.
Impressive celebrations were held throughout the State of Texas in 1936 to commemorate the centennial of its secession from the Republic of Mexico. One of the most important events leading to this act was the decisive Battle of San Jacinto fought on April 21, 1836, in which the Texans were completely victorious. It was therefore decided to erect a memorial on the battlefield honoring the heroes who fought so well.

The monument rests on two terraces which rise 15 feet above the natural grade and consists of a base 36 feet high from which the shaft extends to a total height of 564 feet. The shaft is 50 feet square at the base and diminishes to 30 feet square at the top and is surmounted by an enormous star, 45 feet high and 30 feet wide, which symbolizes the "Lone Star State." On the extreme tip of the star is a beacon light that serves as a protection to air traffic.

Within the base are an historical museum, a meeting hall, and an art gallery, as well as the lobby leading to the stairs and elevator.

The base and shaft are faced with limestone and are decorated in certain places with bas-relief sculpture and inscriptions which depict and describe outstanding events in the early history of Texas.

The project was completed in July 1938 at a construction cost of $800,172 and a project cost of $843,059.

San Jacinto
Battleground Memorial
Houston, Texas
These illustrations are of the new museum building on the campus of the University of Arizona. It is 76 by 140 feet with a museum room on the first floor 87 by 70 feet, two small rooms each 31 by 23 feet, and offices for the curator and staff. A mezzanine exhibition gallery extends around the building. Construction is semifireproof with exterior walls of brick trimmed with stone. The project was completed in March 1937. The project cost of $1,043,174 included 16 buildings for the university.
The Tumacacori National Monument is 49 miles south of Tucson. It was acquired by the National Park Service in 1908 and includes the Mission of San Jose de Tumacacori, the buildings of which had fallen into a ruined condition. The mission church and its dependencies were carefully restored and the museum building was constructed in the same style of architecture as the mission.

It contains rooms for the display of objects related to the Franciscan monks and the work of the mission with the Indians. It contains also quarters for the custodian and a ranger.

The construction is semifireproof. The masonry walls are covered with stucco and the interiors have wood beam ceilings, such as were used by the Spaniards.

The project was completed in December 1937 at a construction cost of $28,890 and a project cost of $32,000.
This new school building replaces a structure which was over 100 years old and which was heated by a boiler 42 years old, was devoid of modern plumbing and ventilation, and was in addition located on a curved street carrying heavy traffic.

The new structure is 2 stories and a basement in height and L-shaped in plan. It contains 6 classrooms, a teacher’s room, playroom, kitchen, and an auditorium seating 288 and provided with a stage.

It is simply and beautifully designed in red brick with wood trim and a slate roof. The project was completed in October 1938 at a construction cost of $105,434 and a project cost of $125,970.
Stoneham, a residential suburb of Boston, had a population of 10,060 in 1930.

This project consisted of two school buildings, which replaced three wooden ones 75 years old. The East School, which is illustrated, contains six classrooms, playrooms, and offices.

It is semifireproof and has complete mechanical ventilation. It was completed in August 1938 at a construction cost of $136,027 and a project cost of $160,259.
The larger illustration is of the Harmony School and the smaller is of the Chepachet School. Both were constructed by the town of Glocester to replace old frame buildings, and the plans of the two are the same.

Both are one story and part basement in height and provide four classrooms, a lunchroom, and rooms for the principal and teachers. The Harmony School is 156 by 63 feet and the Chepachet School is 169 by 63 feet.

The construction is semifireproof. The exterior walls are red brick trimmed with stone and wood and the roofs are slate.

The two buildings were completed in January 1935 at a construction cost of $93,398 and a project cost of $105,788.
School and Town Office Building

*Clarksburg, Massachusetts*

The town of Clarksburg is in the northwestern part of Massachusetts near North Adams and the Vermont State line. The principal industries are farming, dairying, and the manufacture of woolen cloth. In 1930 the population was 1,296. It is increased considerably during the summer vacation season.

The former school building was destroyed by fire in December 1936 and the pupils were temporarily housed in a chapel and in a wooden building formerly used as a dance hall.

The new building houses accommodations both for the old school and for the town offices. It has three classrooms, the town library, town office, and toilets on the first floor. In the basement are a meeting room, vault, room for the sealer of weights and measures, rooms for manual training and domestic science, boiler room, and storage rooms.

The walls are colonial texture red brick. The columns and trim are white pine and the roof is covered with slate. The floors are wood and the walls and ceilings are plaster on metal lath. The walls are decorated in pastel shades. The corridor has a wainscot of knotty pine and the town office has one of painted wood. The toilets have metal partitions and terrazzo floors.

The building was completed in August 1938. The construction cost was $39,721 and the project cost was $43,471.
Willis and Elizabeth Martin
Orthopedic School
Philadelphia, Pennsylvania

The Willis and Elizabeth Martin Orthopedic School is a one-story structure approximately 230 by 330 feet in plan, built around two interior courts, one of which is a playground and the other a garden for cultivation by the pupils. It provides 15 classrooms, a library, rooms for domestic science, industrial arts, and special exercise, an infirmary, a kindergarten, a lunchroom, a gymnasium, an auditorium seating 150, offices for administration, a playroom, and a greenhouse connected with the garden.

It is of fireproof construction, the roof being of structural steel supporting lightweight concrete slabs and the exterior walls red brick trimmed with limestone. The roof is covered with slate.

The project was completed in August 1937 at a construction cost of $541,040 and a project cost of $577,640.
This little building provides elementary school facilities for the township of Manor, which is an agricultural district lying along the Susquehanna River.

It is one story in height with a partial basement and provides four classrooms. The project included the construction of an approach drive and the landscaping of the site.

The building is nonfireproof. The exterior walls are red brick, the trim, porches, shutters, cupola, and gable sheathing are wood, and the roof is slate. The floors of all rooms are maple and those of the corridors are asphalt tile.

The project was completed in September 1936 at a construction cost of $23,879 and a project cost of $28,533.
Burgwin School, *Pittsburgh, Pennsylvania*

The construction of the Burgwin School, in a residential district adjacent to a mill and commercial district, made possible the elimination of the old Hazelwood School built in 1875, and of the Glenwood School built in 1882, both of which were obsolete.

The building is 3 stories in height and H-shaped in plan with over-all dimensions 96 by 279 feet. It accommodates 920 pupils in 22 classrooms and a kindergarten. In addition, it has 2 nature-study rooms, rooms for the study of art and music, a library, 2 playrooms separated by folding doors which can be folded back to form a large gymnasium, an auditorium with a seating capacity of 325, a general clinic, medical inspector’s office, administration offices, and supply and storage rooms. In the rear of the school is a playground surfaced in fine red clay and 2 tennis courts with cork asphalt surfaces.

The building is fireproof throughout. The exterior walls are light-colored brick with limestone trim. It was completed in August 1937 at a construction cost of $363,004 and a project cost of $389,751.
Woodrow Wilson School, Westfield, New Jersey

This school made possible the abandonment of four dilapidated portable buildings which were being used for classes due to the extreme overcrowding of the two existing elementary schools.

The project and its equipment are planned for a future addition which will increase the present capacity of 510 students by more than 30 percent. The building as built is 2 stories high in the central part and has a 1-story wing at each end. It contains 13 classrooms, a kindergarten, offices, service rooms, teachers' room with a kitchen attached, a clinic, and a combined auditorium-gymnasium for use by the pupils and by the community.

The construction is fireproof. Exterior walls are red brick with white marble and wood trim and the roof is grey tile. The reinforced concrete floor slabs are in general covered with linoleum. The boilers are of sufficient capacity to care for the future increase of the building. There is a unit system of ventilation with thermostatic control, an electric time system, and wiring for radio. The structure has a ground floor area of 10,518 square feet, a volume of 642,192 cubic feet, and was completed in August 1935 at a construction cost of $252,780 and a project cost of $275,464.
Ocean View School, *Norfolk, Virginia*

The original application for a grant from the P. W. A. of $45,900 contemplated an annex to the existing school at an estimated cost of $102,000. Investigation disclosed that the old building was a fire hazard, so the city demolished it and without an additional grant constructed a new building which contains 24 classrooms and an auditorium. The construction is reinforced concrete throughout, the exterior walls being stuccoed. The project was completed in March 1939 at a construction cost of $246,754 and a project cost of $264,059.
Magnolia School, *Magnolia, Delaware*

The new Magnolia School replaces a four-room frame structure which had served the school district for 50 years and which was heated by stoves and lacked proper sanitary accommodations.

The new building is one story in height, with provision in the basement for the heating plant, and provides four classrooms and an auditorium with a stage.

The construction is semifireproof. The exterior walls are red brick backed up with hollow tile and trimmed with wood and limestone. The first floor is a concrete slab and the roof construction is wood covered with slate.

The project was completed in June 1935 at a construction cost of $73,536 and a project cost of $80,445.
Washington Elementary School
Evansville, Indiana

This new elementary school is the first school building that had been erected in Evansville for 5 years, during which period the city population had increased by 10 percent.

The building is 2 stories in height and 390 by 335 feet in over-all dimensions. It provides 19 standard classrooms, a kindergarten, an industrial-arts room, a general science room; rooms for art, music, and science; an ungraded room, an auditorium seating 600, a gymnasium seating 200 in a balcony, and the necessary administrative offices.

The construction is fireproof with steel frame and concrete floors and roof. The exterior walls are red brick with stone and wood trim. Extensive use is made of radio in the classrooms.

The project was completed in June 1937 at a construction cost of $427,875 and a project cost of $451,973.
Coolspring School

_Coolspring Township, Indiana_

This building replaces five rural one-room schools and one village two-room school. It is placed on an ample semirural site suitable for the development of playgrounds.

It provides eight modern classrooms, a vocational and domestic science room, teachers’ and principal’s rooms, and a combined auditorium-gymnasium with a stage.

The design and construction is of interest. It is modern in character and consists of exterior walls of glazed load-bearing tile which are interchangeable in size with the glass blocks used in large panels to light the rooms. The tile are glazed on both sides so that they form a finished wall inside and out, thus eliminating plastering on the interior walls. Minor windows on the sides of the glass-block panels allow a direct ventilation in the classrooms.

The building is 120 by 185 feet in plan and has a volume of 282,000 cubic feet. It was completed in August 1938 at a construction cost of $78,036 and a project cost of $85,596.
Northville Grade School, Northville, Michigan

The enrollment in the Northville school district increased from a student body of 500 in 1920 to 719 in 1935. As a result, the 30-year-old nonfireproof elementary school was crowded, and overflow classes were being held in an old residence. The new building is 2 stories and a basement in height and provides 12 classrooms, a kindergarten, a library, a playroom, teachers' rooms, and administrative offices. It is of fireproof construction with reinforced concrete foundations, walls, and floors. The exterior walls are faced with brick and the parapet walls are capped with stone. The building was selected by the American Institute of Architects to be illustrated in the United States pavilion at the Paris Exposition in 1937. It was completed in February 1937 at a construction cost of $92,583 and a project cost of $99,634.
The old school that occupied the site on which this school was built was in such poor condition that portions of it had been closed by the State fire marshal.

The new school is 2 stories in height and approximately 135 by 79 feet in plan. It provides 13 standard classrooms for 385 pupils, a kindergarten, an auditorium-gymnasium with a stage, and the necessary administrative offices.

The floors and stairways are of fireproof construction and the exterior walls are red brick trimmed with wood. The building was completed in December 1936 at a construction cost of $106,686 and a project cost of $116,000.
This project consisted of the construction, alteration, addition, or repair of 13 school buildings. The West Side School for Colored Children is a two-story structure containing administrative offices, classrooms, and a library. It is semifireproof, with concrete frame and floors, exterior walls of brick trimmed with limestone, and a roof of wood covered with slate. It has a volume of 546,235 cubic feet. Heat is provided from a boiler room in a small basement. It was completed in March 1937 at a construction cost of $109,725 and a project cost of $118,503.
Old Orchard School, Toledo, Ohio

This school is 1 unit of a P. W. A. docket which included 18 new school buildings and repairs to 35 others. Its site is large and provides ample playground space.

The building accommodates 480 pupils. It has a central auditorium-gymnasium flanked by 2 wings containing 8 standard classrooms, a kindergarten, a library, domestic science room, and shop.

The traditional design is carried out in red brick with stone trim. It was completed in February 1937 at a construction cost of $228,275 and a project cost of $251,092.
North and South Miami Beach Elementary Schools, *Miami Beach, Florida*

These two elementary schools were part of a program which included also a high school illustrated elsewhere in this volume. The North Beach School, illustrated above, is 2 stories in height and contains 12 classrooms, a clinic, 2 offices, 4 restrooms, a cafeteria, and a physical education room. The South Beach School, illustrated below and by the plan, also 2 stories in height, contains 11 classrooms, an auditorium, a cafeteria, offices, a clinic, 4 restrooms, and a physical-education room. Completed in September 1937, the construction costs were $127,176 for the North Beach School and $138,465 for the South Beach School, and the project costs were $139,486 and $150,190, respectively.
This elementary school replaced an old building which for a number of years had been considered unfit for school purposes by the board of education.

The plan of the structure is E shaped, the central portion and 2 wings being 2 stories in height and the rest being 1 story. The first floor provides 8 classrooms, a kindergarten, library, cafeteria, and recreation room. On the second floor are 10 classrooms.

The foundation walls are local quarry stone, the footings and framing are concrete, and the exterior walls are red brick with stone trim.

The project was completed in April 1937 at a construction cost of $221,325 and a project cost of $232,629.
Hyde Park School, Memphis, Tennessee

This is a grade school for colored children constructed by the board of education of the city of Memphis.

The building is one story high with two inner courts. The outside dimensions are approximately 214 by 284 feet. Each courtyard is 60 feet square. There are 24 classrooms, 4 offices, and an auditorium 43 feet wide by 81 feet long, with a stage at the end 15 feet deep.

The exterior walls are brick and the interior partitions are hollow clay tile. The floor slabs are reinforced concrete. The roof is frame construction supported by steel trusses. The building is semifireproof.

The project was completed in September 1936. The cost of construction was $157,627 and the cost of the project was $175,692.
Creston is located in the southwestern part of the State, at the headwaters of the Platte River. In 1930 its population was 8,615.

This grade school contains 6 classrooms, a principal's office, a kindergarten, and a community room seating 350, with a stage. The community room has a separate entrance at the main entrance of the building. It provides space for local community meetings.

The construction is fire resistive. The floors are covered with asphalt tile. The exterior walls are of light colored brick with limestone trim. Photoelectric cells automatically control lighting in the classrooms.

The building was completed in October 1937 at a construction cost of $74,629 and a project cost of $81,662.
Holmes Elementary School, *Lincoln, Nebraska*

The Holmes School occupies a 10-acre plot, thus providing ample space for playgrounds. It accommodates 160 pupils.

The building is one story and a basement in height, and is T-shaped in plan. It contains three classrooms, a combination library and museum, a playroom, a storage room for bicycles, and a community room which has a stage and a kitchen.

The construction is semifireproof. Exterior walls are brick trimmed with wood, the floor is reinforced concrete, and the roof is wood covered with slate. It was completed in August 1937 at a construction cost of $58,401 and a project cost of $61,030.
The town of Parco is in Carbon County, Wyoming, located 7 miles east of Rawlins, which is the county seat and a division point on the Union Pacific Railroad. Carbon County is the largest agricultural county in the State. The new building replaced a leased 4-room dilapidated wooden structure and two apartments rented for classrooms in an apartment building.

It provides eight classrooms and a centrally located combination playroom-auditorium with clerestory windows. The construction is semifireproof, the walls being brick and the roof wood covered with Spanish tile. The exterior walls are faced with two colors of brick, the darker shade being used for a base and trim around the entrance and certain windows.

It was completed in December 1936 at a construction cost of $46,722 and a project cost of $50,913.
Lily B. Clayton School Addition, *Fort Worth, Texas*

This structure is one unit of a large rehabilitation and building program begun by the Fort Worth Independent School District in 1934. The addition provides six classrooms, a library, a kindergarten, a cafeteria, and an auditorium seating 400. The construction is reinforced concrete with wood roof framing. Exterior walls are faced with buff brick and trimmed with artificial stone of a similar color. With the addition, the school will accommodate 480 pupils. It was completed in February 1938 at a construction cost of $110,313 and a project cost of $115,644.
The day school and community center shown in the upper photograph is located in the Western Navajo District at Moenave, Ariz. It is one of five buildings of similar character constructed by the Office of Indian Affairs, Department of the Interior.

It houses the teachers' living quarters, a classroom, and space for community activities. The section for the school and the community activities is 65 by 26 feet, exclusive of the classroom wing. The section containing the living quarters is 51 by 20 feet and has two bedrooms, a living room, bath, and a kitchen. The classroom is constructed so that another room may be added. Other facilities in the building include a sewing room, laundry, storage rooms, cloak rooms, and showers.

Local materials were employed almost exclusively. The exterior walls are adobe blocks and the roofs are covered with adobe.

The smaller photograph shows a group of the hogan-type school and community structures connected by a communicating passage. Each hogan houses a classroom or community activity. The dome roofs are covered with adobe.

The five buildings were completed at a project cost of $143,565.
This new school replaces two obsolete buildings approximately 50 years old. It is part one and part two stories in height and provides eight standard classrooms, two primary classrooms, a principal's office, a teachers' room, a workroom, and the auditorium which has a well-equipped stage and a kitchen.

The building is semifireproof. Its exterior walls are red face brick trimmed with stone and the cupola is wood.

It was completed in June 1935 at a construction cost of $157,116 and a project cost of $190,640.
Vernon School, Wyandotte, Kansas

This small school was erected in the Wyandotte school district No. 17 to relieve serious overcrowding in the existing buildings. It is a one-story, semifireproof structure with exterior brick walls and a stone entrance. It provides five classrooms and was completed in July 1936 at a construction cost of $21,030 and a project cost of $22,400.
This school provides 6 standard classrooms, 3 special classrooms, a kindergarten, a library, administrative offices, and a combination assembly hall and gymnasium with a stage. All of the classrooms are equipped for 38 students except one of the special classrooms, which is equipped for 20.

The building is constructed with a reinforced concrete foundation, frame, floor slab, and ceiling slab. The exterior walls are red brick backed with concrete blocks, which form the finished wall on the inside. The pitched roof is frame construction and is covered with asbestos shingles.

The volume of the structure is 380,000 cubic feet, and it was completed in November 1934 at a construction cost of $99,961 and a project cost of $125,819.
The school board of Acadia Parish undertook a large program in 1937–38 that involved the erection, enlargement, or re-conditioning of 15 buildings, as well as modernization and furnishing of equipment throughout the school district. The North Crowley School is one of the new buildings. It is built around an interior court, is a one-story structure providing nine standard classrooms and two large classrooms, an auditorium with a stage, small kitchen, an office, a teachers' room, and small infirmaries for boys and girls. It is semi-fireproof with exterior brick walls and a tile-covered roof. It was completed in March 1938 at a construction cost of $206,851 and a project cost of $219,493.
This school building replaces two worn-out structures which were demolished and some of the materials salvaged were reused in the new building. It is 1 story in height and contains 10 classrooms, an office, a small kitchen, and an auditorium with a stage and dressing rooms. A small basement below the stage houses the heating plant. The construction is non-fireproof. Exterior walls are brick trimmed with wood and the floors and roof are wood. The project was completed in October 1936 at a construction cost of $50,321 and a project cost of $54,422.
Earthquake Damage—Corrective Measures, School Buildings, State of California

These six illustrations show typical examples of the damage to the school buildings of southern California by the major earthquake which occurred on March 10, 1933. Before this, seismic disturbances had not been given consideration in the design of school buildings. After the 1933 earthquake, the State Legislature enacted a law known as the Field Bill, requiring the State Division of Architecture to regulate, inspect, and supervise the construction, reconstruction, alteration, or addition to all public buildings in California, which, of course, included schools. Every structure is now required to withstand horizontal forces equal to one-tenth of its gravity factor and all the new schools constructed with P. W. A. aid conform to this wise regulation.
San Marino is a residential community 10 miles south of the city of Los Angeles. It had a population of 3,730 in 1930. Its new school plant consists of several buildings with a total floor area of 17,600 square feet and are typical of the architecture being produced in California at the present time. The illustration is of the sunlit court at one end of the classroom building.

The structure is one story in height and provides five classrooms, a children's rest room, a teachers' room, and a kindergarten to which are attached two workrooms. In addition to this, in the group, are buildings which provide administrative offices, an auditorium, gymnasium, shops, and rooms for domestic science and the arts.

The construction is a combination of concrete and wood frame, the exterior walls being finished in stucco and roof covered with mission tile. The project was completed in June 1938 at a construction cost of $95,251 and a project cost of $103,425.
The Lugonia Kindergarten is entirely detached from other buildings on the school site.

It is a one story and basement structure which contains one classroom, a group room, a library, and workroom and a covered arcade or cloister. To break the monotony of the concrete surfaces of the ceiling, cork panels have been inserted in the roof slab and on the sides of the arched ceiling beams, which not only are decorative but are of acoustical value. The low tile wainscot has inserts of colored tile illustrating Mother Goose and other characters of fairy tales and fables.

The construction is designed to resist earthquake disturbances and consists of reinforced-concrete footings, walls, floor, and roof. The roof is covered with Spanish tile.

The project was completed in September 1937 at a construction cost of $38,562 and a project cost of $43,238.
Sunshine School, San Francisco, California

The school for crippled and undernourished children in San Francisco, which is commonly known as the "Sunshine School," is specially designed to care for the education of the physically handicapped children of the city.

The building is two stories in height. The first floor is entirely devoted to crippled children and provides every facility for their education and care. The patio provides an ideal play area in which they can move about freely in their wheel chairs or can engage in any type of athletics or sports that their condition permits. The second floor is devoted to the undernourished and cardiac-case children. It should be specially noted that each classroom on this floor is provided with a rest room which has a glass roof to admit the sunlight and which is provided with cots for use during the rest periods.

One of the most interesting features of the equipment is the therapeutic bathing pool, which is raised about 3 feet above the floor to facilitate the handling of the physically handicapped children.

The illustration on this page shows the street facade of the school and the main entrance.

Continued on following page.
Sunshine School  
San Francisco, California

The illustrations on this page show two views of the patio playground with its paved areas surrounded by the arcades of the building. The two plans show the arrangement of rooms on both floors.

The entire building is constructed of reinforced concrete, is fireproof throughout, and is designed to resist both major and minor earthquake disturbances. A considerable use is made of decorative tile which greatly adds to the color and reflection of light. Everything possible has been done to create the most cheerful possible atmosphere in order to encourage the children to forget as far as possible their disabilities. Each dining room is provided with a small stage on the side opposite the doors opening onto the patio. There is a corrective gymnasium on each floor and, in addition to the classrooms on the first floor, there are rooms for manual training, art, music, and domestic science, and a small library.

Continued from preceding page
The illustrations on this page show the main entrance, one of the dining rooms, a rest room on the second floor, and the therapeutic bathing pool.

The whole building has been well and thoughtfully designed and carried out. Where special purpose structures are required, this may well serve as a model in planning and general arrangement.

The project was completed in September 1937 at a construction cost of $268,987 and a project cost of $287,713.
Las Vegas Grammar School, *Las Vegas, Nevada*

The old Las Vegas grammar school was destroyed by fire in 1934 and tents had to be used for classes until this new building could be completed.

It includes six separate classroom buildings all connected by arcades. The accommodations consist of 14 classrooms, a shop, teachers' and principal's offices, and a gymnasium with a stage, dressing rooms, and some seating.

The construction is entirely reinforced concrete except for the roof, which is wood covered with tile.

The floor area is 35,000 square feet and the project was completed in October 1936 at a construction cost of $184,923 and a project cost of $217,093.
Wellesley Senior High School, Wellesley, Massachusetts

Wellesley is a residential suburb of the Boston area. Due to the rapid increase in population, there has been need for a large senior high school for many years.

This new building has 70 rooms, accommodating 750 students. There are 17 standard classrooms, 4 conference rooms, 6 laboratories, and an industrial-art shop. Besides these, the special rooms are a library, music room, auditorium with balcony and stage, cafeteria also used as a study hall, 3 conference rooms; a gymnasium for boys and another for girls, which, by means of a sliding partition, can be made into one large room; library convertible into a study hall, apparatus room, special exercise room, girls' rest room, lockers, and shower rooms. The miscellaneous service rooms are 2 rooms for teachers, 5 for officers, rooms for bicycles and science apparatus, laundry, kitchen, serving room, 4 storerooms, janitor's rooms, and 2 clothes-drying rooms.

The building is carried on steel-jacket concrete piles from 40 to 50 feet long. The framing is reinforced concrete, except steel framing in the auditorium and gymnasium. The floor slabs are reinforced concrete. The building was completed in August 1938 at a construction cost of $690,072 and a project cost of $755,182.
One of the Fitchburg high schools was destroyed by fire and the resulting crowding of students into other buildings necessitated the erection of this new four-story structure.

The first floor contains administrative offices, 5 classrooms, a printing shop, mechanical drawing and manual training rooms, a cafeteria seating 700, and locker rooms. The second floor has 5 classrooms, 2 biology laboratories, a health suite, a study, library, bookkeeping room, and an auditorium seating 1,508, with a stage. There is also a gymnasium with bleacher seats for 958 and a folding partition to divide it for boys and girls. The third floor contains 4 classrooms, 3 typewriting rooms, 2 bookkeeping rooms, a physics laboratory and chemistry laboratory with connecting lecture room, and the auditorium balcony. On the fourth floor are 10 classrooms, a bookkeeping room, food laboratory, sewing room, demonstration and storage rooms, a study, 2 biology laboratories, an oral English and music room with stage, and a freehand drawing room.

The project was completed in November 1937 at a construction cost of $1,123,709 and a project cost of $1,228,618.
Hope Street Senior High School, *Providence, Rhode Island*

Enrollment of 3,050 students in 1923 in the three senior high schools in Providence increased 130 percent in 10 years to a total of 7,010. To meet this increase, the Hope Street Senior High School replaced a former building and the Mount Pleasant High School is a new unit.

The Hope Street High School is one of the largest high schools in America, accommodating 2,200 pupils. It is in the vicinity of Brown University. It has 60 classrooms, an auditorium seating 1,285, a large stage and sound-moving-picture equipment, a library, study hall, cafeteria which accommodates 700 at one sitting, modern kitchen facilities, boys' gymnasium, and a girls' gymnasium with 105 individual shower stalls. There are special rooms for woodworking, art metal, machine-shop work, music rooms, and music library.

It is fireproof. The main entrance doors are bronze, the library, study room, and main offices are paneled in white oak. The building is 391 by 282 feet and has a volume of 4,438,960 cubic feet.

It was completed in June 1936 at a construction cost of $1,979,068 and a project cost of $1,995,748.
Ansonia High School

Ansonia, Connecticut

The plan of this building is a departure from the customary school plan. The auditorium is separated from the classroom wing by an open porch, above which are classrooms. The building contains 24 classrooms, administrative offices, a small clinic, a gymnasium, and an auditorium seating 752 students and having a well-equipped stage. The shape of the structure allows extensive playing fields on the property.

The construction consists of salmon-colored brick backed with tile for exterior walls, concrete floor slabs supported by Lally columns, structural steel girders, and beams.

The volume of the building is 1,200,000 cubic feet. It was completed in October 1937 at a construction cost of $412,251 and a project cost of $459,391.
This high school in Union County accommodates the students of 7 communities which formerly had no high-school facilities within their boundaries. Its site has an area of 16½ acres and has been graded and landscaped and provided with playing and athletic fields. The building is 2 stories and a part basement in height and contains in the basement a cafeteria, kitchen, print shop, general shop, and storage rooms. On the first floor is an auditorium, gymnasium, 13 classrooms, administration offices, and rooms for bookkeeping and typewriting. On the second floor are 7 classrooms, a library, teachers' rooms, locker rooms, and rooms for physics, chemistry, general science, biology, art, and domestic science. The construction is steel and concrete with exterior walls of brick trimmed with limestone and wood, and the roof is wood, slate-covered. The project was completed in July 1937 at a construction cost of $475,618 and a project cost of $542,039.
This structure replaces an old high-school building which had become inadequate to care for the student body of 1,200. The building contains 32 classrooms, an auditorium, boys' and girls' gymnasiums, administrative offices, a library, domestic science rooms, shops, a study hall, a cafeteria, and rooms for music.

The construction consists of a steel frame, exterior brick bearing walls trimmed with cast stone and reinforced concrete floor slabs on metal lumber.

The structure is three stories and a basement in height and its dominating feature is the tower at the auditorium entrance. It was completed in December 1937 at a construction cost of $789,379 and a project cost of $909,689.
Manhasset is a suburb of New York City located on the northern shore of Long Island. This school is situated on a 22-acre lot, rolling in character, and overlooks Manhasset Bay. The grounds are arranged for football and baseball fields, archery, junior playgrounds, tennis courts, and landscaped areas.

The building is not symmetrical in plan. It contains seven classrooms of the types used in the best modern schools and also a large greenhouse where flowers are grown and transplanted into the school gardens by the pupils.

It is of fire-resistant construction with special interior finish. The exterior walls are brick, trimmed with stone.

Its over-all dimensions are 312 by 144 feet. It was completed in December 1936 at a construction cost of $467,945 and a project cost of $516,736.
This is one of the largest and most modern schools in New York City and has been highly rated by the Municipal Art Commission. It is in a residential district.

It contains the usual administrative offices, service rooms, 84 classrooms, library, commercial museum, 4 gymnasiums, rooms for social activity, homemaking, artcraft, 8 drawing rooms, a swimming pool, and an auditorium. The student capacity is 1,700. The construction is fireproof. Marble and Caen stone are used in the lobby and auditorium.

The building is 362 feet long by 284 feet wide, with a basement, four stories and penthouse, and is 82 feet high. It was completed in March 1938 at a construction cost of $3,274,867 and a project cost of $3,421,830.
South Junior High School

Newburgh, New York

The South Junior High School at Newburgh is one of 2 schools which comprised this project. It is on the highest point of a 12-acre site and commands a superb view of the Highlands of the Hudson. It serves 19 percent of the area of the city and 39 percent of its population. The building is 2 stories in height with a small third story devoted to a band practice room, a choral room, and a room for public speaking. On the first floor is an auditorium seating 500, a gymnasium, 6 classrooms, rooms for special subjects, a lunch room, study hall, library, a small clinic, and administration offices. The second floor contains the domestic-science department, 4 classrooms, 2 art rooms, teachers' rooms, 2 science rooms, and a storeroom. The exterior walls are red brick on a granite base and are trimmed with limestone. The roofs are covered with slate. The project was completed in November 1937. The estimated construction cost of the South Junior High School is $536,905 and the project cost $640,971. The construction cost of both schools was $1,165,110 and their project cost $1,391,341.
Chancellor Livingston High School, *Hudson, New York*

Hudson, New York, is located on the east side of the Hudson River, about 40 miles south of Albany. In 1930 it had a population of 12,357. The former high school, which is now being used as a junior high school, became seriously overcrowded.

The new building contains special rooms for a shop, library, music, art, homemaking, science, and a cafeteria, as well as an adequate number of classrooms. It has a gymnasium and an auditorium.

The construction is fire resistive, with brick exterior bearing walls and interior steel columns and steel joists. The exterior trim is limestone and the roof is covered with slate. The cornices, railings, and the cupola are wood. The classrooms and auditorium have mastic tile floors and the gymnasium has a wood floor with a cork wainscot. All of the principal rooms have acoustic ceilings. The entrance vestibule and lobby have wainscots of marble and the corridors of terra cotta. The over-all dimensions of the building are 215 by 140 feet. It has a basement, three stories, and a storage attic.

It was completed in November 1937 at a construction cost of $456,169 and a project cost of $508,674.
Pierre S. Dupont High School, *Wilmington, Delaware*

This new high school stands on a 25-acre site which is provided with an athletic field, bleachers, tennis courts, basketball field, and a practice field. The building replaced an old structure which was much smaller and in which a half-time program was necessary.

The plan is somewhat irregular with over-all dimensions of approximately 489 by 303 feet. It contains 33 standard classrooms, 46 special rooms, a gymnasium for girls, one for boys, a corrective gymnasium, a cafeteria, auditorium, library, library classrooms, rooms for public speaking, general science rooms, a room for mechanical drawing, laboratories for biology, chemistry, and physics, and rooms for typewriting, bookkeeping, office practice, commercial practice, art, music, and domestic science.

The building is three stories high with a partial basement and is constructed with a skeleton steel frame, brick bearing walls, and floors of reinforced concrete. The exterior walls are faced with red brick and trimmed with stone and terra cotta. The project was completed in September 1935 at a construction cost of $1,619,575 and a project cost of $1,885,444.
The city of Glen Cove is on the north shore of Long Island and is surrounded by one of the fashionable residential areas of the district. In 1930 the population of the city was 11,430. This building replaces an old frame high school built in 1893.

Among the rooms on the first floor are 14 classrooms, a gymnasium, auditorium, offices, music room, and wood and metal workrooms. The second floor has two art rooms, two men teachers' rooms, seven classrooms, a study, lunch room, kitchen, workroom, library, study hall, student activity room, laboratories, and domestic science room.

The building is fireproof. The interior walls are cinder concrete block. The roof framing is of bar joists, covered with 4-inch gypsum plank.

The project was completed in June 1939 at a construction cost of $716,131 and a project cost of $823,342.
The existing high school at Punxsutawney is on the opposite side of the street from this new annex and could not be expanded due to the fact that permanent structures were on each side of it.

This annex is 2 stories and a basement in height with overall dimensions approximately 150 by 150 feet in plan and provides 6 classrooms, an auditorium seating 1,100, a gymnasium with accommodations for 1,000 spectators, medical and administrative offices, and 7 laboratories.

The construction is fire resistant. It is of the wall-bearing type, with steel studs in interior partitions. The gymnasium floor is carried on wood joists. The auditorium floor is a concrete slab laid on earth. All other floor construction is carried on steel joists. The gymnasium and auditorium roofs are carried on clear span trusses. Other roof sections are on steel joists.

The exterior walls are salmon-colored sand-finished brick with Kasota stone for the base, coping caps and part of the door trim. Some Virginia serpentine is also used for the door trim. Glass block panels, which are surrounded with black brick, are used instead of windows on the street front. The spandrels above these panels are black brick with slate caps. The auditorium is mechanically ventilated. The entrance doors are heavy paneled oak, decorated in color and gold leaf. The floors are linoleum in the classrooms, maple in the laboratories, and colored cement in the corridors.

The project was completed in July 1937 at a construction cost of $198,083 and a project cost of $240,768.
This high school occupies a site of 35 acres. Large play areas, 7 fields for games, 6 tennis courts, and 12 handball courts, as well as a stadium seating 2,626 and bleachers seating 1,000, are part of the plant.

The building accommodates 2,500 pupils. The academic, commercial, and science departments are in the wings on the left; and the shops, domestic science, and art departments on the right, with the auditorium and gymnasium between them. There are 52 standard and 30 special classrooms, a library seating 250, and a cafeteria with a capacity of 625.

The construction is fireproof. Exterior walls are red brick with limestone trim and lead-coated copper spandrels between windows. It was completed in February 1938 at a construction cost of $1,166,121 and a project cost of $1,383,020.
Senior High School

Norristown, Pennsylvania

Norristown is near Philadelphia, to the northwest, on the Schuylkill River. In 1930 the population was 35,853.

The building contains 65 rooms, including shops, laboratories, music rooms, an auditorium seating 2,011 people, a cafeteria for 600, a library for 120, and 2 gymnasiums which when thrown together make a room 88 by 112 feet. There is an outdoor theater and stage, with sloping, sodded seats of 3,300 capacity. The building is fireproof. The exterior walls are brick with limestone trim.

It was completed in April 1938 at a construction cost of $1,012,928 and a total project cost of $1,114,009.
Central High School

*Philadelphia, Pennsylvania*

The first Central High School in Philadelphia was built in 1838 and was the oldest high school in the United States outside of New England. It was replaced in 1844 and in 1900. This project replaces that erected in 1900.

The building provides an extensive administration suite including a doctor’s office, an infirmary, 28 classrooms, a lunch room for 1,000, a faculty lunch room for 60, a gymnasium, an auditorium with a capacity of 1,500, a library, and many art and science rooms and laboratories.

The front portion of the building is of structural steel with reinforced concrete floor slabs. The framing of the rear wings is of reinforced concrete construction. The library is finished in American walnut with an ornamental ceiling. The corridors have wainscots of marble or of tile.

The over-all dimensions are 369 by 262 feet. It was completed in September 1938 at a construction cost of $2,072,825 and a project cost of $2,461,444.
The Knoebel School was erected on a site of 10% acres and the project included a road to the school building from the county highway, an artesian well, and a septic tank. The nearest farm house is a half mile distant. The school consolidates and replaces six small schools of the one- or two-teacher type.

The building contains 10 standard classrooms, also rooms for home economics and industrial art and administration offices. The construction is fire resistant. Exterior walls are a random rustic ashlar of local stone and trim. Windows and doors are wood.

The structure has an area of approximately 16,950 square feet. It was completed in September 1935 at a construction cost of $107,186 and a project cost of $115,629.
Silver Spring is a residential suburb of Washington, D. C., and two sides of the property on which the school has been erected adjoin a section of the National Capital park system in which are large playing fields and tennis courts.

The building contains 13 classrooms, a special English classroom with a stage, administrative offices, a conference room, laboratories for science and biology, a library, rooms for music and domestic science, and a cafeteria for the students. The school was named for the Postmaster General of President Lincoln’s Cabinet.

The construction is steel frame with reinforced-concrete floor slabs, exterior walls of red brick trimmed with limestone and wood, and a roof covered with slate. Acoustical plaster is generally used for the ceilings.

The project was completed in September 1935 at a construction cost of $209,234 and a project cost of $275,013.
This senior high school has been built on a plot of ground not only large enough for athletic fields and tennis courts but of sufficient size to allow for future buildings when the school needs to expand. The main building contains 13 classrooms, English classrooms with stages, laboratories for science and biology, rooms for music and domestic science, a library, and a cafeteria. The construction is steel and concrete, with exterior walls of brick trimmed with stone and wood. It was completed in September 1935 at a construction cost of $218,440 and a project cost of $287,419.
Eastern High School for Girls

*Baltimore, Maryland*

This high school, which has a student body of 2,520 girls, occupies a site of 24 acres in Venable Park, which is developed into an athletic field, a quarter-mile running track, fields for archery, handball, tennis, and badminton courts.

Of the 75 classrooms, 25 are equipped for special instruction. There are also a lunchroom, an auditorium seating 2,200, and a gymnasium 80 by 129 feet with folding partition and folding bleachers seating 800.

The building is fireproof of the wall-bearing type. Columns and floor slabs are reinforced concrete and the auditorium and gymnasium roofs are concrete supported on steel trusses. Exterior walls are brick trimmed with limestone. The project was completed in July 1938 at a construction cost of $1,473,981 and a project cost of $1,532,717.
Western High School, Detroit, Michigan

The new Western High School replaced, on a greatly enlarged scale, a high-school building that was destroyed by fire in the winter of 1935. It occupies the same site as this former building.

The building is three stories and a partial basement in height and is approximately 300 feet square. The auditorium, which is 96 by 110 feet, occupies the core of the structure and is entirely surrounded by corridors from which open the classrooms and laboratories.

The auditorium is on the first floor. It seats 1,300 on this floor, and its balcony, which is entered from the second and third floor corridors, accommodates 700 more. The stage is very well equipped. On the first floor are administrative offices, 2 large study halls, a music department, biology department, shop 36 by 110 feet, a large cafeteria, and a garage and repair shop. The second floor is occupied by the library, study halls, laboratories, classrooms, and the gymnasium. The third floor accommodates classes in typewriting, bookkeeping, the arts, mechanical drawing, and the physics laboratory.

The building is fireproof throughout. The exterior walls are red face brick with stone and wood trim.

The project was completed in August 1937. It has a volume of 3,500,000 cubic feet. The construction cost was $1,082,058 and the project cost $1,136,309.
Junior High School, Sheboygan, Wisconsin

This building is approximately 256 by 388 feet. It contains administrative offices, library, auditorium seating 1,000, double gymnasium, and classrooms for art, music, biology, general science, mechanical drawing, printing, woodworking, and metal working; a study hall seating 200, 25 classrooms, and a cafeteria. The building has a volume of 1,900,000 cubic feet. The entire construction is fireproof.

The project was completed in June 1938 at a construction cost of $583,312 and a project cost of $654,468, including about $33,000 for land.
Mariemont High School

Mariemont, Ohio

Mariemont is located on the outskirts of Cincinnati, to the northeast. It was laid out in 1928 as a housing development. About 25 architects were selected from all over the country to participate in the building of the town.

This new combined junior and senior high school serves this town and the adjoining village of Plainville. It has 12 classrooms, a combined auditorium and gymnasium, cafeteria, a manual training department, domestic science room, library, laboratories, and the usual other facilities.

It is fireproof, faced with mottled colored brick, and contains 772,000 cubic feet.

It was completed in July 1939, at a construction cost of $249,196 and a project cost of approximately $292,000.
Macomber Vocational High School, *Toledo, Ohio*

This new vocational high school is part of an extensive school-construction program in Toledo which involved 19 new school buildings and repair work on many others. It is a unit for boys in the upper 3 years of high school, is 3 stories in height and contains an auditorium with a stage, a library, gymnasium, 17 classrooms, 12 laboratories, and 18 shops where students can learn the fundamentals of engineering mechanics by dismantling and assembling standard equipment and in which the essentials of many trades are taught.

The building is fireproof, of structural steel and reinforced concrete. The exterior walls are faced with brick and trimmed with stone. Its volume is 4,270,000 cubic feet and it was completed in July 1939 at a construction cost of $1,545,948 and a project cost of $1,716,838.
Columbia High School, Columbia, Mississippi

Columbia is the county seat of Marion County, in the southern central part of Mississippi. It has had a rapid development. It is the chief trading point of the surrounding section and also a manufacturing center.

The former school facilities consisted of 3 schools for white children and 1 for Negroes, with a total enrollment of 1,330, representing a material increase in recent years. This increase has caused great overcrowding of the high school and other school buildings.

This new building has 9 classrooms, a gymnasium, showers and lockers for the boys and girls, and an industrial shop on the ground floor. On the second floor are a library, eight classrooms, and a study hall.

The construction is of monolithic concrete, fireproof throughout. Glass blocks between piers and running from floor to ceiling are in some of the walls. The finished floors are wood. The ceilings are covered with soundproofing material.

The building was completed in November 1937 at a construction cost of $122,911 and a total project cost of $137,124.
High Schools

Bailey Junior High School, *Jackson, Mississippi*

This school is part of a program carried out by the district which included the construction, repair, or alteration of 15 school buildings.

The building is two stories and a basement in height and, due to sloping site, part of the basement is entirely above grade.

*Continued on following page*
Bailey Junior High School

Jackson, Mississippi

Continued from preceding page

The basement contains locker and shower rooms, a cafeteria, kitchen, club rooms, assembly room, industrial-arts rooms, shops, workrooms, and laboratories. On the first floor are the gymnasium, band room; domestic-science department including an apartment, a sewing room, and a cooking room; also 12 classrooms, rooms for the fine arts and natural sciences, the auditorium with its stage, a clinic, and administrative offices. The second floor contains the bleachers for the gymnasium, 10 classrooms, a science laboratory; and rooms for fine arts, natural science, and music.

Construction is reinforced concrete throughout with structural-steel trusses over the auditorium and gymnasium. Roofs are composition. The project was completed in November 1937 at an estimated construction cost of $317,040 and a project cost of $388,641.
Meridian High School  
*Meridian, Mississippi*

The Meridian Separate School District includes the city of Meridian and 65 square miles of surrounding territory. The school facilities had become entirely inadequate and to remedy the condition, 12 separate buildings were either remodeled or built, one of which was this new high school. It is a 2-story structure and contains on the first floor an auditorium, a cafeteria, 4 laboratories, a model apartment, and 10 classrooms. On the second floor are 2 laboratories, 14 classrooms, a study hall, art room, and a little theater with stage. The gymnasium is a separate building 2 stories in height with bleacher seats on 2 sides. The construction of both buildings is frame except for the exterior walls which are brick trimmed with limestone. The entire project was completed in November 1937 at a construction cost of $591,489 and a project cost of $688,195.
A careful study by the school officials of the inadequate school facilities of Kenton County resulted in the construction of two identical high-school buildings, one of which is considered on this page.

The Independence High School is 2 stories and a basement in height and includes 15 classrooms, a gymnasium, an auditorium, a cafeteria, study hall, library, and the necessary administrative offices.

The building has a frontage of 243 feet and is of fireproof construction. The exterior walls are brick with limestone trim.

The project was completed in December 1937 at a construction cost of $418,153 and a project cost of $456,978.
Miami Beach, with a normal population of 40,000, did not have adequate school accommodations for the children and, with the influx of the winter population, conditions had become so crowded that tent classrooms had to be used. This large extension to the high school and the erection of two elementary schools have relieved this situation. The plans and elevations on this page and the next are of the high school which is a fireproof structure finished in stucco with some brick trim and a tile roof. It was completed in September 1937 at a construction cost of $285,365 and a project cost of $308,229.

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Miami Beach Senior High School, Miami Beach, Florida

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Orange County is located in the central part of the State, and is chiefly an agricultural community. It has had a rapid growth and the schools became inadequate for the population of 22,500 (1930). Four new schools were erected. This school at Chapel Hill contains seven classrooms and an auditorium on the first floor. On the second floor are three classrooms and rooms for home economics, physics, biology, and chemistry. It is 240 by 60 feet in size.

It is of fireproof construction. The exterior walls are brick with stone trim. The portico and cornices are wood.

It was completed in March 1937 at a construction cost of $109,626 and a project cost of $114,189.
Douglasville High School, Douglasville, Georgia

Douglasville, the county seat of Douglas County, is situated about 17 miles west of Atlanta and about 25 miles from the Alabama State line. In 1930 its population was 2,316. The old school building was inadequate and a fire hazard, necessitating the construction of a new one. It is the only high school available for the school district.

It contains 10 classrooms, an auditorium, a library, and other facilities.

The building is not fireproof. The outer walls are cinder block, covered with brick veneer. The interior and roof framing are wood. The auditorium roof is carried on steel trusses supported by steel columns. The upper part of the auditorium is constructed of wood, covered with wood siding.

The project was completed in December 1936. The total cost of construction, including equipment, was $52,038 and the cost of the project was $58,492.
School Auditorium

Hartsville

South Carolina

The city of Hartsville, 70 miles northeast of Columbia in Darlington County, had inadequate school facilities with no means of giving courses in manual training or domestic science and no auditorium. The school authorities secured a grant from the P. W. A. and together with local funds carried out this project which included the addition of two 3-story wings to the existing high school, containing classrooms, a library, and a study hall; a 1-story building for manual training; and an auditorium which has a seating capacity of 500. The auditorium is shown in the illustration with the manual-training building in the background. All the buildings are frame construction but have exterior walls of brick and roofs covered with composition shingles. The auditorium was completed in November 1938 at a construction cost of $22,702 and a project cost of $24,951. The total cost of the entire project was $94,594.
High School, Helena, Montana

In 1935 an earthquake destroyed an elementary school and severely damaged a grade school and this high school.

The high school was rehabilitated and designed to resist earthquakes. The brick walls were removed, and reinforced concrete substituted with special column and beam reinforcing. The building was divided into individual units separated by 4-inch spaces.

The project was completed in January 1938 at an estimated construction cost of $146,476 and a project cost of $157,504.
Taos High School

*United Pueblo, New Mexico*

This is one of the many schools erected by the Office of Indian Affairs. It is built of adobe brick, plastered inside and outside. The roofs are also adobe supported on vegas with the construction showing.

It provides five classrooms, a general science room, shop, home economics room, arts and crafts room, and an auditorium 71 by 30 feet. It has a heating plant.

It was completed in November 1935 at a construction cost of $71,377 and a project cost of $76,353.
This high school is planned so that when the need arises additions may be made. The present building is T-shaped in plan and two stories in height. It provides seven classrooms, teachers' rooms, a principal's office, a chemical laboratory, a library, and a combination auditorium-gymnasium with a stage and bleachers. The auditorium-gymnasium is so arranged that it may be used by the community as well as by the school.

The construction is fireproof throughout. The exterior walls are red face brick with wood trim. The columns at the entrance of the auditorium are limestone.

The volume of the building is 573,780 cubic feet. It was completed in October 1935 at a construction cost of $133,818 and a project cost of $144,915.
High Schools

Between 1929 and 1936 the school population of Santa Fe increased from 15 to 18 percent each year. To remedy the overcrowding that resulted, the Leah Harvey Junior High School was built to accommodate 375 pupils.

It provides 10 standard classrooms, a library, rooms for the sciences, a shop, administrative offices, and a combination auditorium-gymnasium. The construction is fireproof, exterior walls being of hollow tile stuccoed. The project was completed in January 1938 at a construction cost of $132,874 and a project cost of $159,445.
Junior High School, Clovis, New Mexico

The need for a new junior high school at Clovis was due to a considerable increase in population between 1920 and 1930. The building is 1 story in height and contains 13 classrooms, administrative offices, a study hall, and rooms for general science, art, and music.

The construction is fireproof. Exterior walls are brick trimmed with tile, stone, and terra cotta, floors are concrete, and roofs are concrete slabs on steel. Some tile is used for roof covering. The project was completed in September 1936 at a construction cost of $117,240 and a project cost of $123,102.
The Southwest High School is a unit of the large school-building program undertaken by Houston. It is a 3-story building containing 45 classrooms; chemistry, physics, and biology laboratories; library, lunch room, rooms for special courses, a gymnasium, and an auditorium. It is fireproof, with exterior walls of brick trimmed with stone. It was completed in December 1937 at a construction cost of $686,278 and a project cost of $780,507.
Owing to the growth of Port Arthur from a small town of 900 in 1900 to a city of over 50,000 in 1930, the school system was obsolete and inadequate. As part of its development program, the school district erected this modern field house and gymnasium.

The gymnasium floor is 86 by 100 feet, and the playing area, when the spectators' folding seats are in open position, is 58 by 100 feet which is adequate for a regulation basketball court. In the rear of the building are a band room, shower and clothes-drying rooms, and locker and storage rooms.

It is a fireproof building with a Spanish tile roof supported on steel trusses. It is one story in height with brick, cement, and wood finished floors over concrete slabs. It has tile wainscots.

It was completed in January 1937 at a construction cost of $114,064 and a project cost of $121,030.
One of the units of the large school building program undertaken by Fort Worth was the North Side Senior High School which has a student body of 1,000. It is 3 and part 4 stories in height and contains 28 standard classrooms, laboratories, an art room, shops, a target range, library, cafeteria, double gymnasium, and an auditorium seating 1,200. It is fireproof except for the roof, and the exterior walls are a light, cream-colored brick trimmed with cast stone and black brick. It has a total floor area of 91,863 square feet. It was completed in February 1938 at a construction cost of $459,410 and a project cost of $477,181.
High School Stadium and Offices, El Paso, Texas

This Austin High School Stadium was constructed for the use of three high schools and one college. It provided the city with its first enclosed athletic field.

It has a seating capacity of 3,500 spectators and adjoins an auditorium at one end. It is 191 feet long by 59 feet wide. An unusual feature is the incorporation under the seats of a shop, rifle range, classrooms, and locker and shower rooms.

The stadium seats are constructed of reinforced concrete. The wall construction is steel, reinforced concrete, and brick.

It was completed in January 1936 at a construction cost of $67,641 and a project cost of $70,838.
The Daniel Webster High School is a two-story and basement structure which contains 15 classrooms, a library, 2 cafeterias, a lecture room, corrective gymnasium, girls' gymnasium, auditorium seating 400, domestic-science department, 2 manual training rooms, 3 laboratories, offices, swimming pool, dressing rooms. Another adjacent building houses shops, boys' gymnasium, and lockers. Both structures are fireproof. Exterior walls are brick with stone trim. Both buildings were completed in July 1938 at a construction cost of $662,855 and a project cost of $768,257.
Port Allen High School, *Port Allen, Louisiana*

Port Allen is a town of 1,500 inhabitants, across the Mississippi from Baton Rouge. Its new high school is 1 story and part 2 stories in height and contains on the first floor 10 classrooms, administrative offices, and a first-aid room. The second floor has the science laboratories and an office. Connected with the building is the auditorium with a seating capacity of 700, a well-equripped stage and dressing rooms. The wall construction is concrete with a machine-rubbed finish on exterior. The project was completed in July 1938 at a construction cost of $158,795 and a project cost of $169,693.
Hollywood High School, Los Angeles, California

The science building, and the liberal- and household-arts building illustrated on the next page, are two units of this institution constructed with P. W. A. aid. Their plans are similar. The science building contains 11 classrooms, recitation rooms, laboratories for physics and biology, and lecture rooms. The liberal- and household-arts building contains 14 classrooms and special rooms for art and domestic science. Both structures are fireproof, of reinforced concrete, and designed to resist earthquake shocks.

The science building was completed in November 1935 at a construction cost of $186,748 and a project cost of $208,968. The liberal- and household-arts building was completed in March 1938 at a construction cost of $210,838 and a project cost of $230,425. Both structures are outstanding examples of concrete finish.

Continued on following page
Hollywood High School, Los Angeles, California

Continued from preceding page
Palm Springs High School, *Palm Springs, California*

This project consisted of two buildings at Palm Springs and one building at Banning. The illustrations show the south wing at Palm Springs, the other buildings being similar in character. They are all constructed of reinforced concrete designed to resist earthquake shocks. The project was completed during 1938 at a construction cost of $303,282 for all three and a project cost of $331,550.
This building was rehabilitated to withstand seismic disturbances, with the construction of new concrete exterior and interior walls. It is approximately 81 by 150 feet and has a seating capacity of 1,160.

The size of the stage enables the production of major plays. Covered passageways connect the auditorium with the other buildings of the school plant. The inside is finished with acoustical plaster. An organ is installed by the stage.

The project was completed in April 1937 at a construction cost of $113,528 and a project cost of $126,378.
Redlands is approximately 60 miles directly east of the city limits of Los Angeles, near San Bernardino Mountain. In 1930 it had a population of 14,177.

The basement of the old school was formerly used as a gymnasium for the girls. It was intended to accommodate 150 girls and was being used by over 350. Physical education is a part of the required curriculum.

The new building contains 15,867 square feet of usable floor area. The gymnasium is 70 by 100 feet. It has a gallery along the wide side which will accommodate a large percentage of the student body for viewing the many types of competitive athletic sports and games.

In addition to the gymnasium, the building contains a corrective relaxation room, a large locker room, a room for individual showers, and another for open showers, a kitchen with adjoining classroom, three rooms for toilets, two offices and examination room, and a room for storage of equipment. Consideration was given in the design to reduce to a minimum the operating and maintenance cost and to provide sufficient room for future expansion.

The building is constructed entirely of reinforced concrete, except for the roof over the gymnasium itself, which is

Continued on following page
Redlands High School

Girls' Gymnasium

Redlands, California

Continued from preceding page

spanned by lightweight steel trusses. The exterior of the concrete walls is left exposed with form marks showing.

The gymnasium provides two small basketball courts or one large standard court. The walls have a wainscot of wood. The structure was designed to withstand minor and major earthquake disturbances.

This project was completed in December 1936. The cost of construction was $105,496 and the total cost of the project was $115,493.
George Washington High School
San Francisco, California

This building was constructed to reduce overcrowded conditions in other senior high schools. It has 39 classrooms, boys' and girls' gymnasiums, a large auditorium with stage, a small music hall with platform and sloping floor, numerous special service rooms for sewing, cooking, bookkeeping, and other subjects.

It was completed in 1937 and is one of 12 elementary and high-school buildings under this docket. The construction cost of this building was approximately $782,302. The project cost of the 12 buildings was $2,997,302.
High School, Boulder, Colorado

This new two, part three and part basement building replaced an obsolete structure built in 1895 for a student body of 300 whereas the student body in 1935 had increased to 800. The accommodations of the new school may be seen on the illustration of its plans and it may also be noted with what ease future additions can be made when needed. The auditorium will seat approximately 1,500. The construction is fireproof and the exterior walls are faced with a random ashlar of native stone trimmed with rubbed concrete. The project was completed in September 1937 at a construction cost of $475,005 and a project cost of $550,467.
Gymnasium and Shop Buildings, Gilbert High School, *Gilbert, Arizona*

The illustration shows the new gymnasium for the Gilbert High School with the new shop building in the background. The gymnasium provides a playing floor, 45 by 90 feet, and has bleachers along one side underneath which are locker and shower rooms. The shop building provides a classroom and two shops each 25 by 54 feet and each having a storage room for tools and supplies. Construction of both buildings is concrete-block, stuccoed and wood-roof construction. They were completed in March 1938 at a construction cost of $32,554 and a project cost of $34,979.
Gymnasium-Auditorium, Mohave County Union High School

Kingman, Arizona

This combination gymnasium-auditorium has permanent seating at the sides and will accommodate approximately 400 spectators for athletic and dramatic events. Its construction is of interest. The foundations, first-floor slab, and buttresses are concrete, exterior walls of painted brick and the roof of Lamella type, the thrust of which is taken by the buttresses.

The project was completed in March 1936 at a construction cost of $28,237 and a project cost of $30,285.
The airplane view of the Ogden High School shows the entire plant as well as most of its site which is a plot of ground 660 feet square. The figures on the illustration indicate the various parts of the building. No. 1 is the classroom section; No. 2, the auditorium; No. 3, the gymnasium; and No. 4, the shops building and R. O. T. C. headquarters.

It is one of the largest high schools in the State and will care for an enrollment of 2,000 students. The classroom section, which is 4 stories in height, contains 40 classrooms, domestic arts and science rooms, a cafeteria, 69 by 122 feet, physics, chemistry, and biology laboratories, and a library, 60 by 80 feet. The gymnasium section contains a boys' gymnasium, 2 stories in height and 70 by 100 feet, and a girls' gymnasium, 40 by 70 feet, and the necessary locker and team rooms. The auditorium wing is 168 by 105 feet and provides the auditorium with a well-equipped stage and a choral room.

The entire structure is fireproof. The construction consists of a concrete frame, reinforced concrete floor and roof slabs, and exterior walls faced with a light-colored brick trimmed with stone.

The project was completed in November 1937 at a construction cost of $1,028,916 and a project cost of $1,077,568.
The Bellingham High School is one of the largest and finest structures of this type erected recently in northwest Washington. It is 3 stories in height with sufficient basement to take care of the heating system. It provides 20 standard classrooms; laboratories for chemistry, physics, biology, and agriculture; a woodworking shop; a machine shop; an automobile repair shop; rooms for music, arts and crafts, mechanical drawing, domestic science, office practice, typing, and stenography; a band and orchestra room; lunchrooms; a boys' gymnasium; a girls' gymnasium; an auditorium with a stage; a library; conference rooms; study rooms; and administrative offices.

The construction is entirely reinforced concrete with a stucco finish on the exterior walls. The project was completed in May 1938 at a construction cost of $757,678 and a project cost of $856,898.
This building is somewhat removed from the center of the city but is located with reference to the school population and is situated next to the junior high school which is equipped with an athletic field.

The structure is 2 stories in height, with a basement used only for storage purposes and the heating plant. It provides 32 classrooms, a commercial department of 7 rooms, 14 laboratories, a library, an art department of 2 rooms, a music room, 4 administration offices, 5 teachers' rooms, and a clinic of 4 rooms. The auditorium is 88 by 100 feet and seats 1,750 persons; the cafeteria, 78 by 92 feet, is below the auditorium. The gymnasium is 76½ by 122 feet and has a seating capacity of 780, and there is a shop building containing 5 classrooms, 4 shops, and an office. The plant accommodates a student body of 1,800.

Construction is steel and reinforced concrete. The exterior walls are brick backed with tile and trimmed with terra cotta, and the roof is covered with slate.

The project was completed in June 1937 at a construction cost of $670,875 and a project cost of $741,351.
Corvallis High School, *Corvallis, Oregon*

Corvallis is in the middle eastern section of Oregon on the Willamette River. It is the Benton County seat. The population in 1950 was 17,985.

Besides classroom facilities, this senior high school contains a gymnasium and auditorium. The exterior walls are concrete, covered with stucco. The interior framing is concrete, steel, tile, and wood. Sloping roofs are covered with asbestos shingles. It has an adequate heating system and a modern electric school signal system.

The classroom section is approximately 40 by 275 feet and the gymnasium-auditorium is about 100 by 220 feet.

It was finished in October 1935 at a construction cost of $293,250 and a total project cost of $315,860.
The Roosevelt High School Auditorium is one of 10 units included in a single P. W. A. docket. It was constructed as an important element of this institution which is one of the largest high schools in Hawaii.

The building is rectangular, 72 by 150 feet, in plan. The auditorium seats 1,050, and its floor slopes down to the stage which is of sufficient height to provide space for shifting scenery and for lighting. Dressing rooms are provided for the stage and there is a motion-picture projection booth.

The construction consists of reinforced concrete columns and floor slabs, suspended ceilings hung from steel trusses, hollow-tile walls plastered on the inside and stuccoed on the outside, and clay-tile roofs.

The project was completed in July 1935 at a construction cost of $71,821 and a project cost of $77,052.
The town of Richmond had a population of 1,535 in 1930. This school building is an elementary and junior high school located on a lot approximately 8 acres in size, in the general center of the town.

The building has one story and basement. The basement contains a drawing room, woodworking shop, finishing room, cafeteria, cooking and sewing rooms, assembly room with stage, and boiler room. The first floor has nine classrooms and rooms for the principal and for the teachers.

The building is not fireproof. The exterior walls above the concrete basement are constructed with wood studs faced with brick veneer in front and rear and with clapboard wood siding elsewhere. The walls are insulated and on the interior are covered with wallboard or plaster. The doors and windows are generally wood, but are metal where required by code for exits.

The basement has a concrete floor and a plaster ceiling on metal lath. The roof construction is wood and is covered with slate.

The dimensions of the building are 159 by 69 feet. It was completed in April 1935. The total construction cost was $66,654 and the total project cost was $72,098.
The town of Cabot is located in the northeastern part of Vermont, in Washington County. Employment is afforded by wood-working plants producing novelties.

The school is in the residential section of the town and replaces an inadequate two-story condemned wooden building. There are five classrooms, a library, domestic science room, principal's office, and teachers' rooms. The walls are insulated.

It was completed in October 1938. The construction cost was $36,434 and the total project cost was $39,903.
Old Saybrook Consolidated School

Old Saybrook, Connecticut

This town is located near the mouth of the Connecticut River on Long Island Sound. This project replaced an old wooden elementary school and included the construction of a new elementary school building, a combination auditorium-gymnasium, and additions to and refacing the existing high school.

The building accommodates 500 pupils and has a volume of approximately 500,000 cubic feet. It contains 17 classrooms, an auditorium and gymnasium, lunchroom, three workrooms, and offices.

The walls are common red brick, the floors are concrete supported on steel-bar joists, and the doors and windows are steel.

The entire project was completed in February 1937 at a construction cost of $147,724 and a project cost of $159,896.
The village of Mahopac is located on Lake Mahopac in the south-central part of Putnam County. In 1930 its permanent population was 407. It is also a summer resort.

This new school building accommodates 800 pupils from the vicinity. Besides the classrooms, it has a bus garage, bowling alleys, and a combination gymnasium-auditorium. It replaced old frame buildings which have been abandoned.

The construction is fire resistant. It is built with structural steel frame and concrete subfloors. The ceilings are covered with acoustical plaster and the floors in the corridors are finished in terrazzo. The interior doors are oak. The exterior walls are pink and gray granite ashlar, with limestone copings. The sloping roofs are covered with slate. It is located on a 10-acre lot and faces west. There are 33,000 square feet on the ground floor and the volume of the building is 1,300,000 cubic feet.

It was completed in October 1937 at a construction cost of $459,320 and a project cost of $538,643.
The site of this project is a peninsula, locally known as "The Island" and in addition to the school building, there are baseball and football fields, a running track, tennis courts, and a park containing beautiful old trees. The school, which is 2 stories in height, contains 28 classrooms, a combination gymnasium-auditorium, a kindergarten, cafeteria, library, rooms for domestic science, medical and dental clinics, and a garage for 5 school buses. Construction is semifireproof. The exterior walls are brick trimmed with cast stone and the roofs are covered with slate. The project was completed in April 1939 at a construction cost of $582,244 and a project cost of $642,496.
Ho-ho-kus is a residential community composed primarily of commuters to New York City and has grown considerably in recent years. The new building replaces a structure 30 years old which had only four classrooms, necessitating combining the lower grades and sending the seventh and eighth grades to a school in Ridgewood.

The new school occupies the corner of a 7-acre lot, permitting the development of athletic and play fields. It is a combination grade and junior high school and provides an auditorium and gymnasium, as well as the necessary classrooms and special rooms. It is of semifireproof construction and was completed in April 1937 at a construction cost of $198,628 and a project cost of $219,275.
This project consisted of the erection of 9 school buildings and repairs and additions to 4 others. The Carryville School is a combination elementary and high school, one story and part basement in height, and contains 11 standard classrooms, a library, and an auditorium. It is a nonfireproof building, being of frame construction, except the exterior walls which are brick trimmed with wood. The roof is metal. This building was completed in November 1938 at a construction cost of $66,026 and a project cost of $76,930. The entire project cost was $327,875.
This school is for crippled children and for children who are deficient in sight or hearing or who are cardiac cases. A partial basement provides a manual training department, a playroom, and three unfinished rooms. The first floor has four divisions: (a) Administration, library, and assembly rooms; (b) five classrooms and kindergarten; (c) home economics, restroom, and lunchroom; (d) hydrotherapy, physiotherapy, and occupational therapy.

The construction is fireproof. No stairs are used, ramps taking their place. The building will accommodate 125 children. The estimated construction cost was $324,775 and the project cost was approximately $362,396.
Young School for Colored Children

Independence, Missouri

The construction program of the school district at Independence included the Young, Columbian, and Southwest Schools. The Young School, illustrated on this page, is one story in height with a small basement to contain the heating plant and locker rooms for boys and girls. The main floor contains six standard classrooms, two vocational rooms for boys and girls, a gymnasium, and an office. The ground floor slab is concrete, the exterior walls are brick trimmed with cast stone, and the roof is wood, covered with built-up roofing material. It was completed in September 1935, at a construction cost of $25,348 and a project cost of $29,244. The construction cost of all three schools was $245,689 and their project cost $278,739.
This building is a combination elementary and high school erected by the independent school district No. 3 in Carlton County.

It is 2 stories and a basement in height and provides 14 classrooms, 2 libraries; laboratories for science, agriculture, and domestic science; administrative offices, and a combination auditorium-gymnasium.

The building is fireproof with exterior brick walls trimmed with stone. It was completed in April 1936 at a construction cost of $125,047 and a project cost of $130,361.
Before the construction of this school building, the high school students of Hammond were quartered in 15 inadequate, temporary, or portable buildings.

The new structure is 3 stories in height and is built around a court which is landscaped as a formal garden. On the ground floor are 12 classrooms, a band room, shop, kindergarten, 2 museums, girls’ and boys’ shower and locker rooms, lunchroom, and kitchen. The first floor has 12 classrooms, administration offices, an auditorium seating 800, and a gymnasium with bleachers seating 600. On the second floor are a library, 6 classrooms, and rooms for domestic science, sewing, art, physiology, and general science. The boiler room, a separate 1-story building, encloses the court on one side. Construction is fireproof and the exterior walls are faced with pressed brick and trimmed with stone and marble. The project was completed in June 1937 at a construction cost of $543,702 and a project cost of $580,083.
Lander is the county seat of Fremont County and has a population of approximately 12,500. This new building was erected for school district No. 1 and replaces both the old grade school and junior high school which had been condemned for defective construction.

The structure is T-shaped in plan and one story and part basement in height. It contains a combination gymnasium and auditorium with a stage, 12 classrooms, a library, administrative offices, and locker rooms on the first floor. The manual-training and domestic-science departments, music room, and boys' and girls' lunchrooms are in the basement. Bleachers are on each side of the gymnasium, and there is a projection booth opposite the stage above the first-floor corridor.

The building is semifireproof. The floor is concrete and the roof framing is wood. Steel trusses span the gymnasium. The exterior walls are brick trimmed with terra cotta.

The project was completed in February 1938 at a construction cost of $108,505 and a project cost of $119,527.
The illustrations on this page show the old and new schools in the village of Orick and provide a good example of the type of obsolete structure used for school purposes in many places, and the type of modern building that has been made possible with the aid of the P. W. A. The new building contains two large and two small classrooms with a stage at the end of one of the larger classrooms, a typing room, a library, a general laboratory, and a principal's office. It is not fireproof and its plan leaves much to be desired from the point of view of school functional planning. However, it is adequate, sanitary, and provides well lighted and ventilated rooms. It was completed in May 1936 at a construction cost of $25,911 and a project cost of $29,194.
This project consisted of the erection of the Murphy Auditorium, the alteration of an existing school building to provide offices for the principal and nurse, and the equipment for two buildings.

The auditorium is a T-shaped structure approximately 120 by 120 feet in its over-all dimensions. It provides an auditorium 50 by 70 feet with a stage and dressing rooms, and two classrooms each 23 by 32 feet which are connected to the auditorium but not a part of it. These classrooms were added under another P. W. A. docket after the construction of the auditorium.

The construction is semifireproof of brick, concrete, and frame.

The project was completed in March 1939 at a construction cost for both doockets of $49,534 and a project cost also for both doockets of $55,220.
Skagway Public School, Skagway, Alaska

Skagway is in the northwest corner of the first judiciary division of Alaska, which is the southern strip separating the ocean from British Columbia. It is about 100 miles north of Juneau, adjacent to the Canadian line.

This building was constructed for grade and high school pupils from the neighboring community. In the basement are boys' and girls' dressing rooms, showers, and the boiler room. On the first floor are three classrooms, teachers' room, manual training room, and a gymnasium 43½ by 70½ feet without a stage. On the second floor are three classrooms, a library, physics room, and administrative quarters.

The building is fireproof. The structural framing including exterior walls are reinforced concrete. The surface of the exterior walls is covered with stucco.

The project was completed in September 1938. The cost of construction was $59,671 and the project cost was $63,274.
The State Normal School at Bowie is the only school of this character in Maryland. Due to a great increase in the student body the existing plant had become intolerably overcrowded and this project provided two additional wings to the girls' dormitory, each with an area of 4,300 square feet, an addition to the dining room and academic wing of 4,600 square feet, alterations to the boys' dormitory, and an addition to the practice school of 5,800 square feet. It also included the construction of a water tank, a system of fire protection, sewers, and walks. The construction consists of brick exterior walls, wood joists and stud partitions on the interior, and slate-covered pitched roofs and slab roofs on the decks. All stairways are concrete and enclosed in fireproof wells. The project was completed in February 1939 at a construction cost of $272,774 and a project cost of $291,994.
Los Angeles City College, *Los Angeles, California*

This institution covers an area of approximately nine city blocks. The life-science building, the chemistry building, and the library are included in this project. The life-science building contains on two floors two zoology, one anatomy, one biology, one botany, and one physiology laboratory; two lecture rooms, two classrooms, two workrooms, a dark room, and offices, stockrooms, and storerooms.

The construction, of concrete, is fireproof and designed to resist earthquakes. It was completed in May 1938 at an estimated construction cost of $108,667 and a project cost of $119,845.
Field House and Auditorium
Oklahoma Military Academy

Claremore, Oklahoma

These buildings are part of the Oklahoma Military Academy, a State institution since 1919. Increased enrollment necessitated construction of more units, including the field house and auditorium buildings.

The field house contains a gymnasium with a playing area 70 by 100 feet, and a swimming pool 30 by 75 feet, with locker rooms and storage for military ordnance. Three classrooms and two offices are in the small second-floor portion at the front.

The auditorium building has a seating capacity of 600 with an additional 200 in the balcony, which is sufficient to accommodate the student body and faculty and a reasonable number of visitors.

The entire project was completed in November 1936 at a construction cost of $257,128 and a total project cost of $277,399.
Pasadena Junior College, Pasadena, California

The Pasadena Junior College has a student body of 4,300. It occupies an area of nine city blocks and has one of the most beautiful campuses in the State.

This project consisted of the erection of three structures, one of which is the administration building, and two of which are science buildings. The science buildings contain a total of 32 classrooms. The administration building, in addition to administrative offices, has 64 classrooms, a rest room, library, and an auditorium with a seating capacity of 2,500.

The construction is earthquake-resistant and consists of reinforced-concrete bearing walls, foundations, and floor slabs. The exterior walls are finished with stucco and cast-stone trim. The roof is composition on concrete roof slabs. The project was completed in October 1937 at a construction cost of $1,191,030 and a project cost of $1,468,046.
Fullerton is 15 miles south of Los Angeles. Other buildings included in the school plant are those for administration, social science and student body, arts and crafts, and general science.

This junior college also accommodates students from 8 neighboring towns. It has an enrollment of approximately 1,000. The curriculum of the school includes studies in physical and social science, and in business education.

The new Commerce Building has 12 classrooms, 2 offices, a lecture hall, a workroom, a banking room, and 2 rest rooms. The building is 70 by 150 feet and 2 stories high. It is constructed of reinforced concrete designed to resist major seismic disturbances.

It was completed in October 1936. The construction cost was $131,503 and the project cost $144,805.

Continued on following page
Commerce Building, Fullerton Junior College, Fullerton, California

Continued from preceding page
This project consists of three buildings, replacing the former school plant destroyed by earthquake in 1933. The upper illustration is of the physical-science building and the lower of the English building. The former is constructed of steel frame and studding, providing approximately 24,000 square feet of usable floor area; the latter is of wood frame and stucco, with 17,400 square feet of floor space.

The three buildings were completed in 1935. The language and social-science building is not shown. It has 20,700 square feet of floor area and is constructed of wood frame and stucco.

The buildings were erected at a construction cost of $206,477 and a project cost of $225,191.
The Carbon County Junior College is the first institution of this kind erected in this section of the State, as a result of State legislation. The project consisted of the administration building, illustrated on this page, and the industrial-education building, as well as the equipment for both structures. The administration building is two stories in height with a small basement at the rear to accommodate the heating plant. It contains on the first floor administrative offices including an office for the president of the college, a cafeteria with a kitchen, a small clinic, and rooms for the teaching of social science, history, physics, geology, homemaking, foods, and clothing. On the second floor are rooms for the teaching of bookkeeping, typing, stenography, art and chemistry, physics and biology laboratories, three English classrooms, a lecture room, a room for the language department, and a large library with a stack room adjoining.

The building is of fireproof construction with a frame of structural steel, concrete floor and roof slabs, and exterior walls of brick trimmed with stone. It was completed in June 1939 at a construction cost of $178,447. The project, including the industrial-education building, was constructed at a cost of $258,676 and the project cost was $276,019.
Normal School Gymnasium

Lewiston

Idaho

The city of Lewiston is in Nez Perce County in northwestern Idaho and in 1930 had a population of 9,500. The Normal School had an old gymnasium which was inadequate in every way and this project consisted of the erection of a new building to provide for the athletic requirements of the institution. The gymnasium room is flanked on two sides by bleachers and there are additional seating spaces over the entrance lobby and locker rooms. Doors at the rear of the building open directly to the athletic field. The exterior walls are concrete with a rubbed finish and are painted with cement paint as a protection against moisture. Interior partitions are wood. Windows above the bleachers and three skylights provide ample light. The old building was remodeled for use as administrative offices for the school. The project was completed in November 1938 at a construction cost of $74,310 and a project cost of $79,381.
The University of Vermont and State Agricultural College was organized in 1865. Its courses include agriculture, mechanical arts, military science and training, medicine, and general college courses. Its student body increased from 515 in 1910 to 1,266 in 1930.

The Mabel Louise Southwick Building is the women's recreation building at the university. It is T-shaped in plan and is two stories and a basement in height. The basement contains a combination recreation hall and auditorium with a large stage, locker and utility rooms. Lounges and sitting rooms occupy the first floor. On the second floor are meeting rooms and a recreation hall with a small stage.

The structure is fireproof throughout, the exterior walls being red brick trimmed with marble. It has a volume of 458,000 cubic feet and was completed in November 1936 at a construction cost of $263,237 and a project cost of $281,139.
The Virginia Polytechnic Institute undertook an extensive building program with the aid of P. W. A. It included the students' dormitory, a faculty dormitory, a utilities building, and a teaching and administrative building. The four structures were let on one contract and were built at the same time.

The students' dormitory accommodates 276 students in rooms which open off a central corridor, and there are six living rooms, 22 by 44 feet, each with two fireplaces. The building is four stories in height.

The construction is fireproof throughout. The exterior walls are rock-faced native limestone trimmed with sawed limestone and the roof is slate.

The project was completed in May 1937. The construction cost for the four buildings was $1,089,987 and the project cost $1,199,507. The cost of the dormitory was $191,026.
The Virginia Polytechnic Institute has an annual enrollment of 2,400 students.

A number of buildings have been added to its plant with the assistance of the P. W. A. and of these the students’ activity building is perhaps the most interesting. It is three stories in height and provides a large assembly room and dance hall, bowling alleys, a room for pool and billiard tables, a refreshment stand, reading rooms, and group conference rooms.

The building is semifireproof. Foundations, frame, and floors are reinforced concrete, exterior walls are face brick trimmed with cast stone and backed with hollow tile, pitched roofs are slate and flat roofs composition. It was completed in August 1937 at a construction cost of $234,073 and a project cost of $251,717.
The lack of facilities in the plant made it impossible to meet the demand for an increase in the student body until funds appropriated by the State legislature and a P. W. A. grant made possible the construction of several buildings, one of which was this barracks. It is substantially the same both architecturally and as to construction as the Murray barracks which were built in 1926. It is 4 stories in height and is built around an inner courtyard surrounded with balconies. It provides 52 rooms, 2 toilet rooms, 2 dressing rooms, and 2 shower rooms on each floor.

The construction is frame except the outer walls which are brick and tile stuccoed. The project was completed in April 1939 at a construction cost of $254,306 and a project cost of $264,495 for the barracks only.

Continued on following page
Another of the new buildings at The Citadel is the chapel, a pseudo-gothic structure, which is in keeping with the traditional architecture of the school. It can seat the entire student body of 1,000. It is built with tile walls finished with stucco on the outside while the inside is plaster with a wood roof and ceiling of simple beam construction. The chapel was completed in December 1937 at a construction cost of $147,637 and a project cost of $160,596. The total project cost of all the work at The Citadel was $612,996.
Green Hall, State College of Agriculture, Kingston, Rhode Island

The State College of Agriculture at Kingston is a land grant college supported by the State and Federal Governments.

Green Hall forms the focal point of the college and houses the library and administrative offices. The building is T-shaped in plan and the main section is two stories and a basement in height with the rear section three stories high. The offices of the president, vice president, dean, and other administrative offices are on the first floor. The main library, periodical, reading rooms, and offices are on the upper floors, and the rear section is occupied by the bookstacks.

The construction is fireproof. The exterior walls are faced with granite and the roof is covered with slate. Green Hall is one of 10 granite-faced buildings at the college.

The project was completed in September 1937 at a construction cost of $245,927 and a project cost of $255,641.

Continued on following page
State College of Agriculture
Women’s Dormitory
Kingston, Rhode Island

Continued from preceding page

This building is 4 stories and part basement in height with 2 wings, each 1 story lower. It provides quarters for 103 women students in double study-bedroom units and in 43 single rooms. It is completely fireproof and its exterior walls are brick trimmed with stone and wood. The roof is covered with slate. Before its construction there were no adequate quarters for housing the women students. The project was completed in 1937 at a construction cost of $199,408 and a project cost of $207,789.
Brooklyn College

Brooklyn, New York

Brooklyn College is part of the College of the City of New York and is located on a 40-acre plot of ground in the geographical center of the Borough of Brooklyn. It consists at present of five buildings grouped in such a way that they will eventually form part of a much larger group.

The campus is oval in shape. The library with its tower is at one end of the oval flanked by the academic and science buildings and faced at the opposite end by the gymnasium. The heating plant is placed off campus but near enough to be easily connected to each building by tunnels.

The library contains about 125,000 volumes and seats 700 students in addition to rooms for general study. The academic building contains 200 classrooms, offices for the president, the board of higher education, the faculty, the deans, the departments of art and music, four lecture halls seating 800, and a cafeteria seating 1,750 students. The science building is similar in size to the academic building and houses the departments of chemistry, physics, and biology. The gymnasium building has gymnasiums for men and women, four exercise rooms, a hospital, and a swimming pool.

Construction is fireproof throughout, exterior walls being of brick and roofs of slate. The project was completed in December 1937 at a construction cost of $5,450,170 and a project cost of $5,847,776.
Gymnasium Building  
State Teachers College  
Mansfield, Pennsylvania

Three new buildings were constructed for the State Teachers College with P. W. A. aid, one of which is the gymnasium, the other two being the training school and the science and home-economics building.

The gymnasium building is separated into two parts, the front portion containing the gymnasium which has galleries for spectators, and the rear part housing a swimming pool.

It is a fireproof structure with exterior walls of brick trimmed with stone. The project for the three buildings was completed in May 1939 at an approximate construction cost of $497,200 and a project cost of $543,296.
Auditorium

State Teachers College

Lock Haven, Pennsylvania

This auditorium at Lock Haven provides a hall seating 700 people, a well-equipped stage, and dressing and work rooms. It is fireproof throughout with exterior walls of brick trimmed with limestone. It is part of a project that included a library building, a gymnasium and swimming pool building, and a central heating plant to serve the entire college. All these structures are fireproof and are finished, like the auditorium, in brick trimmed with limestone.

The four buildings contain approximately 1,973,106 cubic feet and were all completed in July 1939 at an estimated construction cost of $535,967 and a project cost of $586,698.
Miami University is now 130 years old. It is one of the oldest colleges in the State. It has a 268-acre campus. The students come from every Ohio county and from many neighboring States. Its enrollment at the time of the P. W. A. application was 2,700, with a faculty of 190.

This new freshman dormitory provides living, dining, and social quarters for 220 men. The north wing at the left of the photograph was built before P. W. A. The building is fireproof. Heat and light are from the college central-heating plant.

The project included some reconstruction to the north wing.

This project was completed in June 1936 at a construction cost of $243,043 and a project cost of $250,425.
Agricultural Engineering Building, Pennsylvania State College

State College, Pennsylvania

This is one of the 10 buildings constructed with the aid of P. W. A., as described on page 115. It contains classrooms on the second floor and, on the first floor, rooms for classes and demonstration with a large field-machinery laboratory and a machine shop.

The exterior walls are brick-bearing with limestone trim and hollow tile back-up. The framing is structural steel with reinforced concrete floors and roof slabs. The ceilings are covered with acoustical plaster. The ceilings in the lobbies are ornamental plaster. The lobbies have slate and marble trim with terrazzo floors.

The building was substantially completed in June 1939 at an approximate construction cost of $111,360 and a project cost of $122,490.
Dental College Building
University of Illinois

Chicago, Illinois

The University of Illinois is located at Urbana and has an enrollment of about 14,300. In Chicago, the University, cooperating with the State Department of Public Health, developed a city block as the "Chicago Campus." On this campus it has its medical and dental colleges. This concentration of public health and educational facilities necessitated the tower-type building.

The building is air-conditioned. It has dental chairs to serve 400 dental students. The medical students use the four lower floors. It has a circular amphitheater on the fourth floor and is 9 stories in height and 14 including the tower. The structure is fireproof, is constructed of steel and concrete, and has over 100,000 square feet of floor area.

It was completed in September 1937. The construction cost was $1,353,570 and the project cost was $1,453,221.
The P. W. A. project of which this health-education building is a part, included also a science building illustrated on the next page. The health-education building provides a men's gymnasium-auditorium, a women's gymnasium, a corrective gymnasium, classrooms, and the necessary shower and locker rooms.

The structure is fireproof, with a steel frame and concrete floor slabs, and the exterior walls are a light-colored brick with stone trim. The interior finished floors are wood, terrazzo, or tile according to requirements.

The total project cost of the two buildings was $812,827 and the health-education building cost $463,782.
Eastern State Teachers College, Science Building, *Charleston, Illinois*

Continued from preceding page

This science building represents the other part of the project of which the health-education building was the first. It is 4 stories in height and contains 10 general classrooms, 4 chemistry laboratories, 2 laboratories for zoology, 3 physics laboratories, 6 other laboratories for minor sciences, a general lecture hall, offices, conference rooms, rooms for photographic work, and stock and store rooms.

The construction is fireproof. The exterior walls to the second-story sills are faced with limestone and above this point are brick with a considerable amount of stone in bands and as trim. Sculpture in stone is used over the entrance doors and at the tops of piers. The project was completed in January 1938 at a construction cost of $327,129.
Student Union Building
University of Cincinnati, Cincinnati, Ohio

The University of Cincinnati was one of the first city colleges in the United States and at the time of the construction of this project it had an enrollment of 9,000 students.

This building has a volume of 1,644,000 cubic feet. It contains the University Book Store, a light-refreshment stand, a general lounge, a faculty dining room seating 125, a main cafeteria dining hall seating 700, six private dining rooms, and the necessary accessory rooms.

The building is fireproof and is heated from the central heating plant. The main rooms have been given acoustical treatment and have special ventilation.

The project was completed in October 1937 at a construction cost of $564,005 and a project cost of $599,747.
Field House and Men's Gymnasium
Purdue University
West Lafayette, Indiana

This project as developed provides a compact and complete athletic plant. The gymnasium unit is 210 by 110 feet and contains three basketball courts; arenas for boxing, wrestling, and fencing; courts for squash, racquet, and hand ball; a swimming pool 40 by 75 feet with seats for 500 spectators; and in the basement a rifle range and golf driving nets. The field house unit is 302 by 180 feet. The floor is clay and sawdust and the basketball floor is removable. Permanent steel bleachers seat 3,900 and temporary bleachers can be erected, increasing the capacity to 8,500.

The exterior is brick trimmed with stone and the field house is spanned with welded, haunched, two-hinged steel arches. The project was completed in November 1937 at a construction cost of $681,148 and a project cost of $712,164.
Indiana University
Administration Building

Bloomington, Indiana

Indiana University was founded 119 years ago and occupies a spacious campus in Bloomington, Indiana. Its enrollment was 5,891 in 1930 and by 1938 it had increased to 7,113.

With P. W. A. assistance, the administration building, a laboratory building, a women's dormitory, a medical building, and a music building were added to its plant. The total cost of these five structures amounted to $2,158,277.

The administration building provides approximately 50,000 square feet of floor area and has offices for the president, the trustees, the bursar, the registrar, and the deans, together with the necessary conference and committee rooms. The top floor accommodates the photostat, accounting, and multigraph departments.

The architectural character conforms to many of the earlier buildings of the university. The construction is of reinforced concrete and the exterior walls are faced with a random range ashlar of limestone.

The volume is approximately 600,000 cubic feet and its construction cost was $377,961. The project cost was $401,628. It was entirely completed in December 1936.

Continued on following page
Indiana University
College of Music
Bloomington, Indiana

Continued from preceding page

The new music building is approximately 115 by 130 feet. On the first floor is a practice auditorium, seating 320, with stage and orchestra large enough for symphony rehearsals. On this floor are also 7 practice studios, the music library, instrument rooms, a student lounge room, and the dean's offices. On the second floor are 2 library rooms, 3 classrooms, a phonograph-recording room, record-storage room, and 4 practice studios. A balcony of the auditorium, seating 80, opens off the corridor. The third floor contains 55 practice studios. An elevator is provided to handle pianos.

The building is fireproof, the exterior walls being faced with limestone. The volume is approximately 640,000 cubic feet.

The building was completed in December 1936 at a construction cost of $337,286 and a project cost of $360,471.
Purdue University is a "land-grant college" organized in 1865. It has a 700-acre campus. When the P. W. A. application was made it had an enrollment of about 3,700 students, approximately one-sixth of whom were women.

The building shown is one of two buildings erected in 1934 and 1937 with P. W. A. assistance. They provide for complete living quarters and social activities of the occupants. The picture shows the building constructed in 1934 which accommodates about 240 women.

The exterior walls are variegated red brick. The construction is masonry and reinforced concrete with slate roofs on gypsum slabs. Quarry tile is used in some rooms for floor finish.

This building was completed at a construction cost of $211,618 and a project cost of $223,783. The two buildings have a volume of about 1,160,000 cubic feet and the project cost of the two was $537,874.
In 1930 the College of William and Mary in Williamsburg established the "Norfolk Extension" on a 5-acre tract of land which had been donated to the college by the city of Norfolk. The structure illustrated on this page is a combination lecture hall and gymnasium and includes a swimming pool. Its architectural character conforms to that of the main college in Williamsburg and has exterior walls of red brick trimmed with stone and wood. The floors and roof are bar joist and concrete construction except over the gymnasium where the roof is supported on steel trusses.

The project was completed in July 1936 at a construction cost of $117,826 and a project cost of $127,022.
Western Kentucky State College has an enrollment of about 4,000 students, which is one of the largest student bodies of the State teachers colleges in the country.

This project replaces an old, insanitary building which was a firetrap. The P. W. A. grant enabled the board of regents to finish this project. The front portion is 243 by 57 feet. One wing is 131 by 57 feet, and the other is 77 by 68 feet. There are 12 laboratories, a book store, and post office in the basement. There are 50 classrooms and offices on the first and second floors and 16 on the third floor. The building is fireproof.

It was completed in December 1937. The P. W. A. part of the construction cost was $494,724 with a project cost of $556,266.
This project, known as the “Laboratory Building,” is 2 stories and a basement in height. The basement contains the manual-training department, recreation rooms, an infirmary, a sewing room, kitchen, cafeteria, and the heating plant. On the first floor are 8 classrooms and the administrative offices. The second floor contains 10 classrooms and offices for instructors.

The construction is nonfireproof. The exterior walls are brick trimmed with limestone, and all the rest of the building is wood. The project was completed in January 1939 at a construction cost of $133,634 and a project cost of $137,178.
The College of William and Mary, with the aid of the P. W. A., made several much-needed additions to its plant, among which was the stadium. The original plans called for a students' activity building as well, but investigation of the proposed site showed that this was not feasible on account of soil conditions. The site of the stadium was changed to a much better location but this meant an increase in the cost of the structure.

Two bleacher sections, each approximately 360 by 60 feet, with field rooms and locker rooms underneath, flank the football field on the east and west sides and are connected on the north end by covered arcaded corridors. The bleachers seat 10,000 spectators.

The construction is reinforced concrete with all exterior walls faced with red brick of the type used throughout the college.

The project was completed in January 1936 at a construction cost of $185,585 and a project cost of $196,085.
The University of North Carolina, which is more than a century old, had an enrollment of 2,706 in 1935 and 3,500 in 1938. The facilities for outdoor athletics were ample but the gymnasium was too small and inadequately equipped.

The new gymnasium building has a floor 150 by 250 feet in size, provided with removable bleachers seating 3,000. In front of the playing floor is a 2-story and basement unit providing administrative space. The swimming pool is a separate structure but is connected with the gymnasium at the locker-room level. Both buildings are fireproof.

The project was completed in March 1938 at an estimated construction cost of $508,983 and a project cost of $534,836.
Classroom Building, University of Georgia, *Athens, Georgia*

In 1933 the State legislature made it possible for the University of Georgia to secure grants from the P. W. A. with which to carry out an extensive building program to accommodate its increased student body and to replace obsolete equipment. The classroom building is 3 stories and a part basement in height and provides 15 classrooms ranging from a kindergarten through the sixth grade, shops, a model living room with bath, clothing, food and science laboratories, conference rooms, administrative offices, a library, cafeteria, recreation room, and an auditorium with stage.

The area of the building is 30,700 square feet. The construction is semi-fireproof. Exterior walls are limestone to the second floor level and brick with limestone trim above this. The cornice is wood and the columns are painted metal.

The project was completed in December 1938 at a construction cost of $203,479 and a project cost of $215,880.
Of the 11 experimental stations of the Bureau of Mines, 9 are located at State universities where they have the advantage of educational facilities and cooperation with the State agencies. This one, at Tuscaloosa, was built on a site of 2 1/2 acres donated by the university.

The building is three stories in height and 50 by 159 feet in plan and provides offices, conference rooms, assembly rooms, a library, a machine shop, assay rooms, and several laboratories for many different purposes. These laboratories are so arranged that they may be expanded and all are equipped with the most modern apparatus.

The exterior walls are brick trimmed with limestone. The total floor area is 20,854 square feet and the volume 356,000 cubic feet. The project was completed in March 1936 at a construction cost of $192,734 and a project cost of $200,000.
The University of Alabama has an enrollment of more than 5,000 students. The new engineering building permits it to include in its curriculum a complete course in mechanical arts which had not been possible before.

The new structure is T-shaped in plan, the front portion being 2 stories in height and the rear wing 1 story. On the first floor are hydraulic, fuel, and aviation laboratories together with instrument and storage rooms. On the second floor are 10 classrooms, offices, and an auditorium.

The building is fireproof throughout. The exterior walls are faced with red brick and trimmed with limestone. The pitched roofs are covered with asbestos shingles and the flat roofs with composition. The project was completed in September 1936 at a construction cost of $167,010 and a project cost of $174,205.
Student Activities Building
University of Nebraska
Lincoln, Nebraska

This structure is three stories and a basement in height and approximately 100 by 190 feet in over-all dimensions. It contains a main lounge 45 by 90 feet, a ballroom, a dining room, several private dining rooms, kitchens, a students' lunch room, a library, recreation rooms, and offices.

It is of fireproof construction throughout. The exterior walls are red face brick trimmed with limestone. The pitched roof is covered with slate and the flat roofs are composition.

It was completed in May 1938 at a construction cost of $388,964 and a project cost of $417,908.
The men's dormitory, known as "Pioneer Hall," at the University of Minnesota, is four stories and a basement in height and is built around a central court or quadrangle open to the outside only for a short distance on one of its long sides.

The dining hall is in the basement and is two stories in height and is served from the kitchen in another building through a tunnel. The first floor has a lobby and a commons room as well as offices and living quarters. The upper floors are devoted to living quarters.

Construction is fireproof, the exterior brick walls being trimmed with stone. The project was completed in October 1934 at a construction cost of $314,013 and a project cost of $327,900.
The West Texas Teachers College has adopted this unusual and interesting method of housing its students rather than the customary dormitory. Under conditions of high land values and building costs it would not, as a rule, be possible, but as an exception it has much interest.

Each building provides a living room, kitchen, bathroom, and three bedrooms, and accommodates six students. The rent is $30 per month, or $5 per student if the house is fully occupied.

The foundations are concrete, exterior walls are masonry with a stucco finish, and the balance of the construction is frame.

The 10 units were completed in September 1936 at a construction cost of $36,683 and a project cost of $38,983.
University Theatre, State University of Iowa

Iowa City, Iowa

This structure is devoted to experimental work and teaching of dramatic arts. It consists of an auditorium seating 500, a large stage with a high fly loft and a grid, a revolving stage, 38 feet in diameter, and a well-equipped workshop forming a continuation of the stage. In addition there are classrooms, a sewing room, dye room, dressing rooms, and a large lounge below the entrance foyer.

The building is fireproof. The walls below grade are concrete and brick backed with hollow tile above grade. The floors are reinforced concrete slabs and the roof structural steel framing and gypsum plank.

The project was completed in July 1936 at a construction cost of $166,635 and a project cost of $166,930.
The Fine Arts Building stands on the bank of a stream not far from the University Theatre. It contains a centrally located exhibition hall, 42 by 73 feet and 20 feet high and 10 studios all oriented so that they receive north light through windows or skylights which is supplemented by adjustable reflectors for artificial light. Construction is fireproof of reinforced concrete with exterior walls faced with brick and trimmed with stone. Indirect lighting in the ceiling, lights the exhibition hall. The project was completed in July 1936 at an estimated construction cost of $181,195 and a project cost of $181,489.
The Iowa State College of Agriculture and Mechanic Arts provides courses in veterinary medicine, surgery, and animal husbandry, and this building supplies the necessary plant and equipment for carrying on these studies.

The building is two stories in height and constitutes an addition to existing cow barns and buildings for housing animals. It contains administrative offices and an operating section as well as laboratories and rooms for special work and study.

The construction is fireproof throughout. The exterior walls are faced with brick and trimmed with stone and on the interior, floors are terrazzo, and walls of glazed terra-cotta blocks.

The project was completed in December 1937 at a construction cost of $178,101 and a project cost of $183,910.
The student body of the University of Texas increased from 6,000 in 1920 to 10,000 in 1930, necessitating an extensive building program for the university. Carothers Dormitory for girls was one of the first buildings constructed.

It is three stories and a basement in height and provides 61 double bedrooms, living room, dining room, matron’s suite, staff bedrooms, and the necessary kitchens and service rooms.

The building is semi-fireproof, the exterior walls being of brick trimmed with stone and stucco. It was completed in March 1937 at a construction cost of $250,572 and a project cost of $264,923.
Music Hall, College of Industrial Arts, Denton, Texas

Among several new units constructed by the College of Industrial Arts is the music hall which is an addition to the front of the existing auditorium.

The structure is 3 stories in height and contains 10 standard classrooms, 22 small classrooms, 19 practice rooms, and a small auditorium for group work. A large foyer provides entrance to both the music hall and to the auditorium.

Construction is reinforced concrete, with the exterior walls faced with brick and trimmed with stone.

The project was completed in June 1937 at a construction cost of $160,289 and a project cost of $172,783, both estimated.
This project, in addition to the students' union building, included a central heating plant and irrigation system, a library, and a health laboratory.

The students' union building includes a large central ballroom around which are placed clubrooms, lunch and fountain-service rooms, cooperative stores, and students' offices. The ballroom is large enough to accommodate 250 couples on the floor and the clubrooms can be opened and used as an overflow.

The building is semifireproof. The exterior walls are finished in stucco and its effect together with the architectural design is to give the structure the appearance of an ancient Indian pueblo.

The project was completed in April 1938 at a construction cost of $97,809 and a project cost of $104,355. The cost of the entire project was $694,086.
Administration and Laboratory Building
University of New Mexico
Albuquerque, New Mexico

The new administration and laboratory building for the University of New Mexico is designed in the "Pueblo" style to conform to the other buildings on the university campus.

It consists of a 3-story central unit flanked by two 2-story wings. The first floor contains the administrative offices and the department of anthropology, the latter including a museum and rooms for laboratory and research work. On the second floor are the departments of geology and physics and part of the department of psychology. The third floor accommodates the remainder of the department of psychology.

The construction is semifireproof. The exterior and bearing walls are brick and other walls tile, the exterior finish being stucco and the interior plaster. Exterior trim is wood.

The project was completed in April 1936 at a construction cost of $254,609 and a project cost of $275,796.
Fine Arts Building, State Agriculture College, Monticello, Arkansas

This structure houses the various fine arts departments of the college. On the first floor are the offices, recitation and class rooms, and a small auditorium seating 185. The second floor is given up entirely to recitation and practice rooms.

The building is semifireproof, the exterior walls being faced with random rock-faced stone ashlar trimmed with cut limestone. The plan permits of easy enlargement. The project was completed in May 1935. The construction cost was $94,856 and the project cost $105,897.
School of Medicine, University of Arkansas

Little Rock, Arkansas

The University of Arkansas is in Fayetteville but its school of medicine is in Little Rock, and its new building has been erected on a site adjoining the city hospital, thus affording the students better opportunities for study and for contact with the hospital staff. Formerly the school occupied the old capitol building which had not been sufficiently remodeled to make it practical for school purposes.

The new building is 5 stories in height and provides a clinic, laboratories, a library, an amphitheatre, classrooms, and lecture rooms, and all necessary facilities for the instruction of 500 students. It has exterior walls of brick trimmed with stone. It was completed in February 1936 at a construction cost of $457,633 and a project cost of $506,318.
President's House, Arkansas State Teachers College
Conway, Arkansas

The president's house was one unit of a P. W. A. docket which included the construction and equipment of six separate units for the Arkansas State Teachers College. It is a two-story structure containing a two-car garage, living room, dining and breakfast rooms, library, and kitchen on the first floor; and three bedrooms, a sleeping porch, and baths on the second floor. The design is colonial and is carried out in red brick with wood trim and a slate roof. It was completed in June 1937 at a construction cost of $17,520 and a project cost of $21,498, both estimated.
The new men's dormitory at the University of Arkansas is divided into three separate units, each having its own entrances and stairway.

The building is 55 by 189 feet in plan and 3 stories in height. On the first floor are 19 double rooms, a lobby, and a social room. The second and third floors each provide 21 double rooms, so that the entire building can accommodate 122 students.

The structure is fireproof, with reinforced concrete floor and roof slabs and exterior walls of brick trimmed with stone. It was completed in August 1937 at a construction cost of $143,549 and a project cost of $156,803.
Field House, University of Arkansas, Fayetteville, Arkansas

Previous to the building of this new field house, the old auditorium of this university could not seat more than 650 spectators. It was a frame building unsuited to the needs of the university.

The new building is 3 stories in height. On the ground floor are locker, storage, and utility rooms. The gymnasium and auditorium occupy the entire first floor. A small second floor, across the front of the building, contains offices. There is an additional entrance to the ground floor from the outside. The building is 115 by 169 feet. The playing floor of the gymnasium is 103 by 135 feet, sufficient for 2 practice basketball courts when the bleacher seats are folded. When these seats are open the floor space provides a standard basketball court, and 2,112 spectators may be seated. When used as an assembly hall, it seats 3,250.

The building was completed in August 1937. The construction cost was $152,137 and the project cost $165,505.
The new field house for the University of Colorado is approximately 144 by 296 feet in overall dimensions. The large hall has an earth floor with a cinder running track 12 laps to the mile, and is provided with a removable wood basketball floor, 60 by 90 feet. Permanent bleachers seat approximately 2,000, and removable bleachers on both sides of the basketball court can seat approximately 1,900. There are 2 handball courts as well. The exterior walls are in random ashlar of native stone. The wood roof covered with tile is supported on steel girders and purlins.

The project was completed in September 1936 at a construction cost of $114,156 and a project cost of $122,295.
Before the construction of the new women’s club, the University of Colorado had no suitable facilities for the holding of social functions by women. The building is two stories in height and contains on the first floor a living room, approximately 40 by 25 feet, a dining room, reception room, manager’s office, kitchen, and pantry. The second floor is devoted to bedrooms. Construction is fireproof with a reinforced-concrete frame and floor slabs, exterior walls of native stone, and a roof covered with tile. The building was completed in September 1937 at a construction cost of $65,707 and a project cost of $69,236.
The construction of this building has provided a recreation center for the students as well as releasing space formerly used for such purposes, for classrooms. It is a 2-story structure somewhat irregular in plan and contains an auditorium, seating 1,200 on the floor and 600 in the balcony, and is provided with a well-equipped stage. Adjoining this are a lounge and small clubrooms. On the second floor are the main dining room, a private dining room, and the kitchen. The construction is semifireproof. Exterior walls are faced with brick trimmed with stone and wood. The project was completed in October 1936 at a construction cost of $182,544 and a project cost of $191,834.
Liberal Arts Building, University of Wyoming, Laramie, Wyoming

This building houses the entire liberal arts department of the University of Wyoming.

It is rectangular in plan with an auditorium in the center, surrounded with classrooms, and is four stories and basement in height.

The first floor contains the auditorium and its stage, the entrance lobby, offices, and classrooms. Dressing rooms for the stage are in the basement. The second floor has seven classrooms, offices, two political economy rooms, a lobby, and the balcony for the auditorium. On the third floor are seven classrooms, rooms for English, history, Latin, and offices. On the fourth floor are offices and a lecture room.

The structure is entirely fireproof and the exterior walls are faced with a rough ashlar of local stone obtained in a quarry owned by the university. The spandrels and parapet copings are dressed stone.

The project was completed in June 1936 at a construction cost of $339,311 and a project cost of $366,775.
Auditorium and Gymnasium, Georgia School of Technology, Atlanta, Georgia

The Georgia School of Technology has an enrollment of more than 2,000 students but until the completion of this project had never had a gymnasium or an auditorium.

The building is 105 by 159 feet and provides floor space for basketball and a permanent seating capacity of 2,000. Portable seats placed on the playing floor can increase the seating capacity to 3,000.

The construction is monolithic concrete and due to soil conditions the structure rests on concrete piles. It was completed in January 1937 at a construction cost of $91,196 and a project cost of $92,911.
Swimming Pool Building  
University of Washington  
Seattle, Washington

This structure, housing the swimming pool, was erected as an addition to the physical-education building. The swimming pool is 42 by 75 feet and galleries for spectators are provided to seat 1,000.

The construction is reinforced concrete with exterior walls faced with brick and trimmed with cast stone. The steel roof trusses support a wood roof.

The project was completed in September 1938 at a construction cost of $193,818 and a project cost of $205,887.
The University of Arizona carried out a rather extensive building program with the aid of the P. W. A. The women's building is characteristic of the architecture that was adopted for all buildings and has a somewhat north Italian medieval flavor and blends with the surroundings.

The building is part one and part two stories in height. On the first floor is a women's gymnasium, 61 by 90 feet, with special exercise and locker rooms adjoining. There is also a swimming pool, 30 by 75 feet, furnished with underwater lighting and a modern sterilizing and filtering plant. On the second floor is a recreation hall, 86 by 114 feet, which may be used for dances. The orchestra is provided with a music shell on one side of this room.

The structure is semifireproof, exterior walls being brick trimmed with terra cotta, and the roof, tile. The project was completed in March 1937 at a construction cost of $96,309 and a project cost of $104,316.
The location of the Washington State College Stadium was determined upon after considerable study by the designers of the campus plan. A site was selected where the natural contours of the ground sloped down to the athletic field and the seating was made to conform to these slopes, thus reducing the construction work and the cost.

This project consists of 2 sections, the south stand being rectangular and the east stand in the shape of an arc of a circle. The 2 together seat 21,000 people.

The construction is concrete on natural grade or fill 60 percent of the distance to the top, and frame the rest of the way up. The date of completion was September 1936. The construction cost was $104,062 and the project cost $107,617.
Cranston is the fourth city in size in Rhode Island. It was incorporated in 1910, and in 1930 had a population of 42,910. This pavilion is at the recreation center and replaces portable wooden bleachers. It seats 6,000 people, and a press box enclosed for radio broadcasting surmounts the central section. Below the seat construction are ticket offices, storage for park tools, and sanitary conveniences.

The athletic field is lighted for night use and the pavilion provides seats for spectators for football and baseball games, track meets, band concerts, and pageants.

The entire construction is reinforced concrete. The project was completed in October 1936 at a construction cost of $53,955 and a project cost of $61,321.
Field House and Stadium for the Public Schools, Westfield, New Jersey

This structure supplements an athletic field which had been developed on the grounds of the Lincoln School. It consists of bleachers to seat 788 spectators with a field house underneath providing locker and shower rooms and rooms for coaches and equipment. The construction is reinforced concrete with exterior walls of stuccoed concrete block. The project was completed in September 1936 at a construction cost of $32,283 and a project cost of $35,577.
Mills and Petrie Memorial
Ashton, Illinois

This building constitutes a cultural and recreational community center. It was constructed with a donation of site and of $40,000 by a citizen of Ashton and with the aid of the P. W. A. It provides a public library, a stack room, a combination auditorium and gymnasium with a stage and men's and women's locker rooms, a kitchen, and a room for the American Legion.

It is a fireproof structure and the exterior walls are a light-colored brick trimmed with stone. The auditorium-gymnasium is used by the high school as well as by the public. It was completed in June 1936 at a construction cost of $103,701 and a project cost of $106,702.
Outdoor Swimming Pool  
*Wheeling, West Virginia*

This swimming pool in Wheeling Park is part of a project which included, also, the houses and a small pavilion for a municipal golf course in the same park. It is 80 by 200 feet in size and is surrounded by concrete walks. Facing the deep end of the pool is the bathhouse which contains dressing and shower rooms for men and women, rooms for life guards and for concessions, and the filter room. There is a terrace for spectators on part of the roof.

The project was completed in July 1937 at a construction cost of $90,266 and a project cost of $95,728. The cost of the golf-course pavilion was approximately $8,000.
La Grange is an industrial city of 20,000 population in the western part of the State. It decided to provide a recreation center for its citizens and included in this program a swimming pool which was constructed in a public park which adjoins the residential district.

The project consists of a swimming pool, 75 by 125 feet, a wading pool, and a two-story bathhouse. The locker and shower rooms and the office are on the first floor, and the second floor is used as an observation gallery. The construction is fireproof, and the water for the pools is properly sterilized by filtration and chlorination.

The project was completed in April 1935 at a construction cost of $37,952 and a project cost of $39,594.
Recreation Center

*St. Simons Island, Georgia*

St. Simons Island is a popular resort, and this building was constructed to replace the county-owned casino and pier which were destroyed by fire in 1935. The project consisted of the casino and a swimming pool, 50 by 100 feet.

The building contains an auditorium, bowling alleys, and dance hall, while locker rooms are placed underneath the walks surrounding the swimming pool.

Construction is fireproof. Exterior walls are faced with brick and the roofs are slate. The project was completed in September 1936 at a construction cost of $71,471 and a project cost of $77,275.
The city of Miami had no proper accommodations for spectators at its athletic field except wooden bleachers accommodating 10,000. The demand for a modern field became so great that this development was deemed necessary. The new stadium is called the “Orange Bowl” and has become nationally known in athletic circles. It has a seating capacity of 22,000. It is of steel-frame construction with wooden seats and has a concrete front on the field side and at the 2 ends. It is equipped with all conveniences for athletics and spectators, and is provided with illumination by reflectors on steel towers for athletic events held at night.

It was completed in September 1937 at a construction cost of $306,041 and a project cost of $324,627.
This swimming pool and bathhouse was constructed in the municipal park by the city of Des Moines.

The swimming pool is reinforced concrete, measures 57 by 164 feet, and is provided with a modern filtration, circulating, and sterilizing plant. The bathhouse is two stories in height and contains on the first floor dressing and shower rooms for men and women. On the second floor is a dining room, a kitchen, an observation deck, and a small dance floor. The bathhouse is built of structural tile painted on the outside. The project was completed in June 1936 at a construction cost of $103,565 and a project cost of $109,992.
The word "Sonotorium" is a coined word used to name this open-air theater which includes, in addition to its stage and dressing rooms, park shelters, comfort stations, and a park garage. It is used for radio programs, theatrical productions, and public speaking. The stage and pylons are constructed of reinforced concrete while the shelter houses are frame covered with cement stucco. The stage is equipped with a public-address system, six loudspeakers, and a radio-program pick-up. The project was completed in June 1938 at a construction cost of $11,438 and a project cost of $12,081.
Swimming Pool and Bathhouse
Marshall, Minnesota

The illustration is a view of the new bathhouse constructed in connection with the swimming pool at Marshall. The central pavilion contains attendants' and equipment rooms with a covered bandstand on the second floor. Flanking this are the men's and women's dressing and shower rooms. Over these are open terraces for spectators, approached by stairways at each end. The swimming pool is 60 by 120 feet and is constructed of reinforced concrete and provided with modern sterilizing equipment, diving boards, and guard towers. The walls of the bathhouse are local field stone.

The project was completed in July 1938 at a construction cost of $31,506 and a project cost of $33,741.
Sylvan Lake Hotel
Rapid City, South Dakota

The building contains 29 guest rooms, a large lounge, dining room, and kitchen. The lounge is the equivalent of 2 stories in height with wood walls of random width knotty-pine boards, exposed wood roof trusses, a wood ceiling, and a random width oak-plank floor.

The construction is a combination of native-stone walls and wood frame.

The project was completed in September 1937 at a construction cost of $140,008 and a project cost of $151,628.

The Sylvan Lake Hotel, erected for the Custer State Park Board, is located about 37 miles southwest of Rapid City on the shore of a beautiful lake, surrounded by rugged hills and woods.
The population of this city in 1930 was 13,735, which had increased 9,462 in 10 years. It was necessary to expand all municipal accommodations accordingly.

The swimming pool is 60 by 150 feet, with depth varying from 3½ to 10 feet. The bathhouse has a lobby and locker and dressing rooms for men and women. The caretaker lives on the second floor. The swimming pool is reinforced concrete. The bathhouse is wood frame with brick exterior walls.

The project was completed in October 1935 at a construction cost of $33,023 and a project cost of $35,079.
The evident thought and care exercised in the design and planning of this municipal swimming pool has resulted in a satisfactory architectural composition.

The pool is L-shaped, 50 by 165 feet on the long leg and 15 by 50 feet on the short. The smaller leg is for the use of children. The bathhouses and other necessary facilities are adequate and the most modern methods are used for sterilizing the water of the pool. This project was completed in October 1938 at a construction cost of $70,931 and a project cost of $78,845.
Recreational Building

**Huntington Beach, California**

This project consisted of the erection of the recreational building and improvement of the approaches and beach front. The building is located at the shore end of the existing municipal pier. The beach south of this pier attracts a large number of people as it is especially safe and attractive for bathing.

The recreational building is two stories in height and approximately 75 by 129 feet. The lower floor is used as a lunchroom for picnic parties and on the upper floor is a dance floor, 55 by 75 feet, with a raised platform at one end which may be used for orchestras or for theatrical performances, and also concession space for beverages and refreshment.

The construction is frame and the structure is supported on creosoted wood piles. The exterior finish is stucco with wood trim.

The project was completed in May 1938 at a construction cost of $55,569 and a project cost of $59,998.
Painted Desert Inn, *Petrified Forest National Monument, Arizona*

The building contains a dining room and a sandwich shop with kitchens, an Indian museum, a trading post for products of Indian make, a ranger’s quarters, a naturalist’s office, and eight rooms for lodging tourists. These rooms are on different levels and each has a walled and landscaped terrace.

The over-all dimensions of the structure are approximately 100 by 75 feet. Its walls are rubble masonry with a plaster finish.

The project was completed in April 1939. The P. W. A. allotment, which included the purchase of land, was $130,888.74.
Municipal Park Improvements
Club House
Dorris-Norton Park
Phoenix, Arizona

In order to provide its citizens and its large transient population with better park facilities, the city of Phoenix undertook the rehabilitation and beautification of existing parks and the acquisition of lands for the creation of new mountain and city parks. The type of buildings erected in these parks was similar in all cases and their character and design blend with the brilliant sunshine and the native foliage. The illustration on this page is a view of the club house in the Dorris-Norton Park. It is one and part two stories in height and contains a large public dining room, a lunchroom, living quarters, and an office for the club manager and is connected to the boat house by a pergola. It was completed in June 1937 at a construction cost of $37,000 and a project cost of $45,872, not including equipment.

Continued on following page
Municipal Park Improvements, Boat House and Locker House,

*Dorris-Norton Park, Phoenix, Arizona*

Continued from preceding page

The upper illustration shows the boathouse and dock in the Dorris-Norton Park. It was completed in 1937 at a construction cost of $3,400 and a project cost of $4,850. The locker house (illustrated above) contains locker and shower rooms for men and women. Its exterior walls are painted brick and the roof is covered with Spanish tile. It was completed in June 1937 at a construction cost of $10,500 and a project cost of $13,457. This does not include equipment, electrical work, sewer, or water connections.

*Continued on following page*
The revival of interest in listening to music out of doors has not been overlooked by the city of Phoenix in its park improvement program, and this band shell in the Dorris-Norton Park provides a place where the bands and orchestras of the city can play. The shell is constructed entirely of wood covered with stucco and has been designed to reflect and amplify the sound over a large area of the park. It was completed in June 1937 at a construction cost of $5,400 and a project cost of $6,731 which did not include electrical connections for lighting or amplifiers.

The entire docket included improvements in 14 different parks and provided for tennis courts and other recreational areas, grandstands, paths, landscaping, water and sewer lines, and various appurtenant buildings. One unit of the park system, the archaeological development, consisted of the construction of laboratory facilities, archaeological excavation, and reconstruction of ruins for which work $15,000 was authorized. All improvements were completed in May 1937 and involved a total project cost of $923,041.
This clubhouse was built by the city of Seattle in connection with one of its public golf courses that are included in the city park and recreation areas.

The building has a small basement, a first floor, and a partial second floor. The heating plant occupies the basement; the first floor contains a spacious living room, locker rooms for men and women, a dining room, lunchroom, and kitchen facilities; and the second floor has quarters for the custodian.

The basement and first floors are concrete, but otherwise this building is frame with exterior brick veneer walls.

The project was completed in September 1936 at a construction cost of $29,225 and a project cost of $31,037.
Bluebeard Castle Hotel

*St. Thomas, Virgin Islands*

Among the several projects in the Virgin Islands was the Bluebeard Castle Hotel. The group of buildings was erected on the summit of a hill 200 feet above the sea. An ancient stone tower with walls 5½ feet thick, is supposed to have been the watchtower of the famous legendary pirate, Bluebeard. The building on the right in the larger illustration contains the lobby, administrative offices, dining room, bar, kitchen, and service rooms. A detail of its entrance portico is illustrated on the right side of this page. Terraces planted with palms, tropical flowers, and foliage surround all the buildings. The building in which Bluebeard's tower is incorporated is one of the guest houses and, with other guest houses and cottages, provides accommodations for 100. Much of the construction is concrete or stone, some is frame, and the roofs are mostly metal. Since no well water is available it is necessary to catch all rain water which is stored in large cisterns under the buildings. The project was completed in May 1938 at a total cost of $271,842 of which amount the P. W. A. appropriated $133,644, the Virgin Islands $20,000 for the land, and the W. P. A. $118,198.
The Jewish Memorial Hospital

New York, New York

This project is one of two of a semiprivate nature, other than housing developments, to which the P. W. A. made a loan.

The structure is L-shaped in plan and eight stories and a basement in height. On the lower floors are administrative offices, examination rooms, out-patients clinic, pharmacy, and quarters for 15 resident physicians. The upper floors have wards and private rooms to accommodate 125 adult and 25 children patients, 50 maternity cases, modern nurseries, 2 major and 1 minor operating rooms, 2 delivery rooms, laboratories, and a solarium.

The building is fireproof with exterior walls of brick trimmed with limestone. It was completed in October 1937 at a construction cost of $754,853 and a project cost of $1,002,501.
Welfare Island, formerly known as Blackwell’s Island, was used until recently as a site for penal institutions but has been changed to a large hospital. The nurses’ home, which is one unit of this development, provides 600 single bedrooms. It contains also a dining room, a cafeteria, lounge rooms, and a library. It is eight stories, a basement, and a penthouse in height, and is completely fireproof being constructed of steel and reinforced concrete with exterior walls faced with brick in two colors. It was completed in December 1937 at a construction cost of $1,666,110 and a project cost of $1,766,921.
Nurses’ Home
Kings County Hospital
New York City

The nurses’ home for the Kings County Hospital has a central unit 12 stories high with 2 wings, each 9 stories high. The architectural character of the building conforms to that of the other institutional structures.

The basement contains a swimming pool, 20 by 60 feet, dressing rooms, the kitchen, and other facilities. The first floor has the entrance hall, living rooms, bedrooms, and the main and staff dining rooms. On the second floor are an assembly hall seating 650 with a well-equipped stage, classrooms, laboratories, and lecture rooms. The rest of the building contains quarters for the 679 members of the nursing staff.

Construction is fireproof with exterior walls of brick and spandrels of lead. The roof is covered with tile. The illustration shows the rear facade of the building. The project was completed in April 1939 at a construction cost of $2,074,450 and a project cost of $2,178,301.
This hospital comprises four groups surrounding the central dining hall and kitchen buildings. The capacity of each group is 1,500 patients. The utility group is of sufficient size to enable the hospital to expand up to 10,000 patients. Quarters are provided for nurses, single and married employees, and for all married physicians.

This project consisted of the construction of an infirmary building (3,695,000 cubic feet), four employees' buildings (total 1,424,000 cubic feet), a non-medical building (722,200 cubic feet), a railway station, powerhouse equipment, service connections, and the assembly hall here illustrated. The project was completed in April 1937 at a construction cost of $2,456,966 and a project cost of $2,464,899.
Surgical Operating and Ward Building
Boston City Hospital, *Boston, Massachusetts*

This building is part of a large hospital plant. It is part 6 and part 10 stories in height and is U-shaped in plan with a rear wing in addition. It contains beds for 300 patients and has 2 emergency operating rooms, eye operating room, amphitheater operating room 2 stories in height, 12 major operating rooms, and 5 regular operating rooms, as well as the necessary service rooms.

The construction is fireproof throughout and the exterior walls are brick, trimmed with stone. The project was completed in October 1937 at a construction cost of $1,464,394 and a project cost of $1,564,952.
Mitchell Memorial Hospital
Rockingham County Farm
Brentwood, New Hampshire

This building replaces a 60-year-old, 20-bed hospital with totally inadequate facilities.

It is two stories and a basement in height and contains six 4-bed wards, two semiprivate rooms, four private rooms, one nursery, an operating suite, an X-ray suite, three diet kitchens, an office and reception room, four nurses' rooms, an autopsy room, a pharmacy, and a linen room.

The construction is semifireproof. The exterior walls are brick, backed with hollow tile, floors are bar-joist construction, and roof is wood, covered with asphalt shingles. It was completed in December 1936 at a construction cost of $54,940 and a project cost of $59,999.
The new nurses' home for the Norfolk County Hospital was constructed to relieve a serious condition of overcrowding at the institution. It is 2 stories and a basement in height, and contains 53 bedrooms, an assembly hall, and sitting and reception rooms.

The construction is semifireproof. Foundations are concrete, exterior walls are brick trimmed with stone and wood, and the roof is covered with slate. The project was completed in October 1936 at a construction cost of $92,830 and a project cost of $99,900.
Administration Building
Walter E. Fernald State School
Waverley, Massachusetts

The Walter E. Fernald State School is located on a large reservation at Waverley and is for the feeble-minded.

This structure is one story and a basement in height and contains an office and work space for the chief clerk, two social-service rooms, two school testing rooms, three psychology rooms, photography room, offices for the chief of clinics and head of school clinic, examination rooms and a pharmacy, offices for the school administration, and a board room.

The construction is semifireproof. Exterior walls are brick trimmed with cast stone and wood, and the roof is covered with slate. The project was completed in October 1936 at a construction cost of $103,867 and a project cost of $112,850.
The nurses' home is 1 building of a group, constructed by the Veterans' Administration at Togus, which includes the administration building, dining hall, and 2 barracks. It is a rectangular 2-story structure with accommodations for 42 nurses.

The building is fireproof. It has a skeleton concrete frame, floors and roof of concrete pan construction, concrete basement walls faced with stone above grade, brick walls above the first floor backed up with hollow tile and trimmed with limestone, and has a composition roof. It is characteristic of the architecture of the other buildings but is simpler in detail. It was completed in June 1936 at a construction cost of $97,526. Its volume is 260,800 cubic feet.
Naval Hospital, Philadelphia, Pennsylvania

The Naval Hospital at Philadelphia was authorized by an act of Congress in 1931, but as insufficient funds were appropriated the buildings were completed with the aid of P. W. A.

The site is a 22-acre plot north of League Island Park and the Philadelphia Navy Yard. The project includes the main hospital building, a nurses’ home, corpsmen’s quarters, four officers’ quarters, a garage, film-storage building, greenhouse, and the necessary services, roads, and walks.

The main hospital building is 13 stories in height. It has a normal capacity of 650 patients in 30-bed wards and single rooms, but could accommodate many more if necessary. There are two main operating rooms, several small rooms for minor operations, and numerous solaria, together with all the necessary service rooms. The structure is fireproof throughout, of steel and reinforced concrete, and the exterior walls are brick. The project was completed in February 1935 at a project cost of $3,188,927.04, of which the P. W. A. supplied $2,346,866.73.
The construction of this hospital plant was begun in 1929 but work was discontinued in 1931 due to financial difficulties. It was resumed in 1935 with the aid of the P. W. A. and when completed covered most of a site of 4½ acres and included a 20-story hospital building, a 9-story nurses' home, and a powerhouse supplying the entire institution.

The hospital building contains 1,200 rooms of which 162 are for private patients, and it increases the total bed capacity of the institution by more than 50 percent. In the plan, all of the departments which are related in service permit unobstructed access from one to the other. Unrelated departments have free access to the general services of the building. The hospital is also equipped with an out-patient department, providing ambulatory medical care to indigent patients up to 150,000 a year. About 64 percent of the hospital services is given free.

The building is fireproof with a structural steel frame and reinforced concrete floor slabs. The exterior walls are brick and most of the roofs are covered with promenade tile. The project was completed in July 1936. The total cost, including P. W. A. participation, was approximately $8,500,000.
Hospital for Crippled Children

*Elizabethtown, Pennsylvania*

This hospital is for the treatment of nonchronic cases. The project consisted of two additions to the existing hospital building, an addition to the nurses' home, and alterations to an existing wing to provide doctors' quarters and offices. The added facilities consist of space for 168 additional beds for patients, a swimming pool, hydrotherapy, physiotherapy, heliotherapy, and a kitchen and laundry.

All new structures are completely fireproof with steel and reinforced concrete framing and walls of brick. The design conforms to the existing building. The project was completed in August 1939 at an estimated construction cost of $485,362 and a project cost of $530,386.
Laurelton State Village was formed in 1913 by the State to segregate and care for mentally defective women. When finally completed it will care for 3,000 inmates. This project called for the construction of two cottages, buildings for administration, recreation, and hospital purposes, and improvements and extensions to the existing plant. The administration building contains in the basement a garage, psychological laboratory, a post office, and various service and storage rooms. On the first floor are board and staff rooms and a number of offices. The second and third floors are devoted to living quarters for the staff and officials.

The building is reinforced concrete with exterior walls of local stone, wood trim, and a slate roof. It was completed in May 1939 at an estimated construction cost of $178,550 and a project cost of $201,314.
State Tuberculosis Sanitarium  
_Mont Alto, Pennsylvania_

This project was undertaken to replace about 60 frame buildings which had been constructed at Mont Alto since 1907 and which were obsolete as well as fire hazards. Four new fireproof structures had already been built by the State with the assistance of the P. W. A. This program included the main hospital, the nurses' home, a women's-help dormitory, a garage, a kitchen and dining-hall building, the children's hospital, alterations and additions to the powerhouse, the steam distribution system, sewers, and the sewage disposal plant. The main hospital is six stories and a basement in height with a partial seventh story. It has a volume of 3,260,000 cubic feet and accommodates 350 men and 350 women patients. The nurses' home has a capacity of 125 nurses, the women's-help dormitory holds 125 and the children's hospital accommodates 300 patients. All the buildings are fireproof and have exterior walls of red brick trimmed with stone. The main hospital was completed in August 1939 at a construction cost of $1,832,123 and a project cost of $2,056,868. The estimated construction cost of the entire project was $4,070,939 and its project cost was $4,425,371.
Institutions at Howard, State Hospital for Mental Diseases, Cranston, Rhode Island

Three institutions were combined under this project, the State Hospital for Mental Diseases, the State Infirmary, and the Sockanosset School for Boys. The project included 25 buildings for the first of these institutions, 3 for the second, and 3 for the third. The drawings and specifications for the 25 buildings for the State Hospital for Mental Diseases were produced by the offices of 16 architects and engineers in the extraordinary time of 25 days.

The illustration on this page is of the administration building of the State Hospital for Mental Diseases. It is a two-story and basement structure and contains the administrative offices of the institution, a medical library, and vaults for records and case histories.

The building is fireproof and, like all the other structures at the institution, has exterior walls of red brick trimmed with

Continued on following page
Institutions at Howard, State Hospital for Mental Diseases, Cranston, Rhode Island

continued from preceding page

The building for disturbed men is illustrated on this page. It is one of two identical buildings, the other being for disturbed women. It is T-shaped in plan and 3 stories in height and accommodates 240 beds. There are 96 single rooms, 6 day rooms, 6 shower rooms, 6 open porches, a cafeteria, 9 clothes rooms, pack rooms, and baths for continuous water treatment. The construction is fireproof, exterior walls being of brick trimmed with stone and wood. Both of these buildings were completed in January 1938 at a construction cost for the two of $676,854 and a project cost of $741,414. The State Infirmary at Howard adjoins the Hospital for Mental Diseases, and three buildings were constructed for it under this P. W. A. docket. The infirmary formerly had a capacity of 250 patients, and some patients had to be housed in hospital wards. The institution is for indigent patients of all ages as well as for cripples.

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The new hospital building has a capacity of 100 beds and quarters for doctors, nurses, and employees. Most of the surgery for the entire State Social Welfare Department is performed here. It is the only State institution equipped for X-ray therapy. It is 4 stories in height and is a wall-bearing, fireproof structure, the exterior walls being red brick trimmed with limestone. The roof is slate. It was completed in January 1938 at a construction cost of $464,950 and a project cost of $509,645. The three new buildings now give the infirmary a capacity of 300 beds, 10 cribs, and 21 bassinets.

Work on the 31 buildings for the institution was begun in February 1936 and was completed in March 1938. The total construction cost for all of them was $5,287,223 and the project cost $5,782,169.
Wallum Lake House

Wallum Lake Tuberculosis Sanitarium

Burrillville, Rhode Island

Wallum Lake House is the main building of this sanitarium and is one of 11 construction projects carried out with P. W. A. aid at Wallum Lake. It consists of three sections, one of which provides quarters for all of the administrative officers, and another which contains an auditorium seating 1,200 and a kitchen to prepare food for 1,000 patients. The third and central unit provides hospital facilities for 372 patients as well as a chapel.

The construction is fireproof and consists of a steel frame, exterior walls of brick trimmed with stone, pitched roofs covered with slate, and flat roofs of composition.

The project was completed in February 1938. It has a volume of 1,831,920 cubic feet and was built at a construction cost of $1,465,173 and a project cost of $1,608,889.
The Jersey City Medical Center occupies a plot of ground of over 13 acres overlooking the Hudson River on the south and west. There is a difference in level of approximately 70 feet between the north and south property lines which nearly all occurs at the south line in the form of a ledge of rock.

The tuberculosis hospital, one of several new structures built with P. W. A. aid, is on the edge of this ledge of rock and adjoins the maternity hospital. It is a 22-story building providing under one roof facilities for clinical and laboratory work, hospitalization, nursing, recreation, administration, and other facilities. This includes an auditorium, a chapel, dining rooms, recreation rooms, accommodations for 498 patients, 3 doctors, 18 interns, and 97 nurses. The set-backs on the wings above the seventh floor are paved with promenade tile and provide sun decks for the patients. The orientation of the building was carefully studied to provide sunlight in all patients’ rooms.

The construction consists of a steel frame encased in concrete, resting on either solid rock or piles driven to rock. The floor slabs are reinforced concrete, the exterior walls are brick backed with hollow tile and trimmed with terra cotta, and the roofs are covered either with slag or promenade tile.

The project was completed in August 1937 at a construction cost of $2,677,888 and a project cost of $2,992,257.

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Jersey City Medical Center

Medical Building

Jersey City, New Jersey

Continued from preceding page

The medical building is another unit of the Jersey City Medical Center and occupies a site on the northeast corner of the property, 175 feet back from the north property line and 125 feet from the east line. To the north the ground slopes gently to the street while to the east the slope is more pronounced.

The building is 22 stories in height and has a capacity of 675 beds disposed in 75 wards and 65 private rooms. Seven laboratories, 3 classrooms for convalescent children, an auditorium, a lecture room, a chapel, and the necessary utility rooms, diet kitchens, and administrative offices complete the facilities of the structure.

The construction is a steel frame encased in concrete with foundations on bed rock or on piles driven to rock. The floors and roof slabs are reinforced concrete and the exterior walls, as on all the buildings of the group, are brick backed with hollow tile and trimmed with terra cotta.

The project has a ground-floor area of 17,478 square feet and was completed in August 1939 at a construction cost of $2,282,369 and a project cost of $2,560,559.
Tuberculosis Hospital

Middlesex County

New Jersey

This tuberculosis hospital and sanitarium is 4½ stories in height and contains 350 bedrooms, a main kitchen, 2 diet kitchens, a cafeteria, dining rooms on each floor, an auditorium with a stage, a complete X-ray, fluoroscope, and radiograph department occupying 4 rooms, operating rooms, sun porches, and open decks. The over-all dimensions of the main building are 228 by 141 feet. The construction is fireproof throughout. The load-bearing exterior walls are faced with red brick trimmed with terra cotta and wood, the frame is steel, floors are reinforced concrete, and the roof is framed with steel, supporting precast concrete slabs which are slate covered on pitched roofs. The heating and power plant is housed in a separate building connected to the hospital by a tunnel. The project was completed in March 1937 at a construction cost of $737,513 and a project cost of $798,981.
This school provides an academic course, including kindergarten, as well as vocational courses in cabinetmaking, wood carving, carpentry, sign painting, and house painting for boys, and courses in dressmaking, cooking, and housekeeping for girls.

The building is two stories and a basement in height and provides classrooms, a gymnasium, eight woodworking rooms, and nine domestic-science rooms. The construction is fireproof with exterior walls of brick trimmed with limestone, a wood cornice, and a slate roof.

The project was completed in August 1936 at a construction cost of $116,671 and a project cost of $123,216.
Dormitory Building, Springfield State Hospital, Sykesville, Maryland

This building was badly needed by the epileptic colony at the Springfield State Hospital on account of an overcrowded condition. It is 2 stories and a basement in height and provides 2 large exercise rooms in the basement in addition to the utility rooms. On the first floor are dining rooms and 2 dormitory sections, 1 for 26 patients and the other for 23. The second floor has similar accommodations.

The structure is semifireproof. The exterior walls are brick with limestone quoins, a wood cornice, and a slate-covered roof. The central motif is painted white. Floors are reinforced concrete and roof construction wood. The project was completed in May 1936 at a construction cost of $119,792 and a project cost of $124,626.
Hospital Building

Dayton, Ohio

This "cottage" at Dayton is part of a P. W. A. docket which included seven improvements to State institutions. It houses 80 tuberculosis patients and stands on a wooded site in the spacious grounds of the institution. It is a fireproof building, exterior walls being of brick trimmed with stone, and the roof is covered with slate. It was completed in August 1937 at a construction cost of $76,668 and a project cost of $79,856. The entire project cost was $874,987.
The hospital site, in a remote and relatively high mountain area, is an 800-acre farm, about 50 acres being set aside for the buildings; 150 patients can be accommodated in cottages and 250 in hospital buildings. This new building provides 49 additional beds.

On the first floor are administrative offices and the receiving department. The second floor has two 5-bed wards, consultation rooms, a library, and staff living quarters. The third floor contains 20 private rooms and the fourth floor 16 more, together with the major operating room and the maternity department. The circular wheel-chair ramp connects all floors. The building is fireproof with exterior walls of brick. It was completed in February 1937 at a construction cost of $201,739 and a project cost of $213,590.
This new 54-bed hospital is part of a 10-year plan for the development of the Indiana State Sanitarium. It is used for nonambulant cases and permits the segregation of advanced cases of tuberculosis.

The building is 2 stories and a basement in height and 60 by 291 feet in plan. The necessary utility rooms occupy the basement, and the first and second floors, which are similar in plan, have a central corridor from which open single bedrooms. Outside of these bedrooms are porches 12 feet wide where the patients are placed for air and sunshine. Large sun porches occupy one end of the structure and on the roof is a sun terrace large enough to accommodate 40 cots. An elevator serves all floors and the roof.

Construction is fireproof throughout and the exterior walls are brick with terra-cotta trim. The volume of the building is approximately 700,000 cubic feet and it was completed in January 1937 at a construction cost of $257,056 and a project cost of $271,790.
The Joel Pomerene Memorial Hospital, *Millersburg, Ohio*

This structure provides 24 beds and is a well-equipped unit of the county hospital. The basement contains an X-ray laboratory, nurses' dining room, kitchens, and an autopsy room. On the first floor are operating rooms, private rooms, men's and women's wards, a maternity ward, and nurses' quarters. The second floor has a children's ward, an isolation ward, and nurses' quarters. The building is fireproof with brick walls faced with Ohio sandstone. It was completed in May 1937 at a construction cost of $67,534 and a project cost of $75,096.
Administration Building, Chicago State Hospital, *Dunning, Illinois*

This State hospital occupies a 238 acre tract of land on the western edge of Chicago and houses approximately 4,500 adult insane patients. The administration building is one unit of a long-range plan to expand and improve the facilities of the State for the care and treatment of the mentally deficient. It combines administrative facilities with hospital space, providing 804 beds for male and female patients. It is fireproof, except the roof, and has exterior walls of light-gray brick with a small amount of stone trim. Decoration is confined to a varied handling of brick work. The project was completed in March 1937 at a construction cost of $567,906 and a project cost of $569,059.
Nurses' Home, Cook County Hospital, Chicago, Illinois

This project called for the completion and equipment of this structure, which had been begun before P. W. A., and which had its foundations and substructure to the first floor finished at a cost of approximately $254,467 when work was stopped. It occupies an entire city block, being 178 by 202 feet in plan and 17 stories in height and is in reality a hotel plan, being H-shaped above the third floor. On the ground floor are demonstration, anatomy, and chemistry and bacteriology laboratories, 3 lecture rooms, and a natatorium. The first floor contains graduate and student nurses' dining rooms, the kitchens, and 8 administrative offices. On the second floor are student and graduate nurses' lounges, 2 lecture rooms, and a library. Above this are 12 floors containing 817 bedrooms for nurses, with a sitting room and a "laundriette" on each floor. The fifteenth floor contains an 18-bed hospital, and on the sixteenth floor are quarters for the dean, the night supervisor, and 2 associate directors. The structure is fireproof, exterior walls being faced with brick and trimmed with stone. It was completed in June 1935 at a construction cost of $1,647,300 and a project cost of $1,713,382.
Class Room and Dormitory Building, Illinois State School for Deaf Children

*Jacksonville, Illinois*

This building is part of an institution which had an enrollment of 670 boys and girls in 1935 and which is complete in itself, having its own power plant, laundry, bakery, and refrigeration system. The structure is 2 stories and a basement in height and contains 4 playrooms in the basement. Eight classrooms, an office, 2 day rooms for boys and 2 for girls, 8 bedrooms and 2 attendant’s rooms for boys, and the same number for girls are on the first floor; and on the second floor are 8 classrooms, 16 rooms for boys, and 16 for girls. Each room accommodates 3 children. The structure is fireproof with exterior walls of brick trimmed with stone and has a tile roof. The project was completed in June 1937 at a construction cost of $329,466 and a project cost of $330,690.
County Asylum Hospital for the Chronic Insane

Green Bay, Wisconsin

This new structure at Green Bay replaces an old, inadequate, and nonfireproof building. It consists of a central administrative section connecting 2 wings, one for men and the other for women. The wings accommodate 250 beds. On the first floor are 10 eight-bed wards, 26 semiprivate and private rooms, the main dining hall, and the kitchen. The second floor has beds for 140 patients in wards, private and semiprivate rooms, and also has 4 isolation rooms and a surgery.

The building is fireproof and has a volume of 880,000 cubic feet. It was completed in October 1935 at a construction cost of $302,569 and a project cost of $317,023.
This laundry building is part of a P. W. A. docket which included also additions to the tuberculosis sanitarium, construction of a garbage incinerator, renovation of the county hospital building, and reconstruction of a former nurses' home for use as an isolation unit.

The laundry building serves the whole institution. It contains space for laundry equipment, general and private offices, and a dining room. The construction is fireproof, of reinforced concrete, steel-truss roofs covered with cork insulated steel decks, with composition roofing, and exterior walls faced with brick. It was completed in March 1937 at a construction cost of $253,753 and a project cost of $269,426.
Psychopathic Building, South Carolina State Hospital, Columbia, South Carolina

This building is part of a P. W. A. docket which includes a large number of structures for South Carolina institutions. It is 2 stories and a basement in height and contains 12 wards, 58 private rooms, 14 special-treatment rooms, operating rooms, radiographic and metabolism rooms, as well as all of the utility rooms and special rooms needed for an up-to-date psychopathic hospital. Construction is fireproof with exterior walls of brick and stone.

The project was completed in August 1937 at a construction cost of $679,008 and a project cost of $718,443.
This new hospital building for the Florida State Prison is 2 stories in height. On the first floor are two 11-bed wards, four 4-bed wards, six 2-bed wards, and a number of special-treatment rooms. The second floor contains eight 2-bed wards, 14 private rooms, an X-ray room, and 2 operating rooms with the necessary sterilizing and anaesthetizing rooms.

The building is fireproof throughout, the construction being of monolithic concrete.

The entire project consisted of this building, two ward buildings, and power-plant equipment. It was completed in January 1938 at a total project cost of $339,851. The construction cost of the hospital building was $130,620 and its project cost was $144,195.
The Florida State Hospital, which is in the northwestern part of the State, cares for both white and colored feeble-minded and insane patients.

Among the additions to its plant, provided with P. W. A. aid, was the general hospital which is 2 stories in height and provides on both floors 28 private rooms, four 4-bed wards, four 5-bed wards, four 10-bed wards, and 8 disturbed-patient rooms, as well as rooms for special treatment and the necessary utilities.

The construction is fireproof, the exterior walls being finished in stucco.

The project, which is one of a docket involving the expenditure of $670,428, was completed in January 1938 at a construction cost of $107,903 and a project cost of $118,313.
Nurses’ House and Doctors’ Quarters, Florida State Hospital, *Chattahoochee, Florida*

This project consisted of the construction of a 12-unit apartment building, chief surgeon’s residence, a male attendants’ dormitory, bachelor doctors’ quarters, and a nurses' house to accommodate 200 nurses. The nurses’ house is typical of the character and construction of these units and contains 203 rooms, including a matron’s office, classroom, library, reception room, laundry, and kitchen. The type of construction is slow burning, and the exterior walls are masonry. The nurses’ house is under docket Fla. 1372 and was completed in July 1938 at a construction cost of $247,692 and a project cost of $263,396. The project cost for all the buildings was $358,843.
Hospital Building, La Grange, Georgia

The city of La Grange and Troup County combined their available funds and with the aid of the P. W. A. carried out this project which consisted of the hospital building and a nurses' home.

The hospital is a 3-story and basement structure accommodating 60 beds and equipped with the necessary labora-

tory, X-ray, and operating facilities to make it a thoroughly up-to-date institution.

The building is fireproof throughout with exterior walls of brick trimmed with stone and wood. The roof is slate, and the cupola wood. It was completed in May 1937 at a construction cost of $167,479 and a project cost of $193,642.
This project consisted of the construction of a three-story fireproof hospital building, a one-story brick veneer nurses' home, and the purchase of the site. The ground floor of the hospital temporarily contains only the heating plant and some storage space. The first floor has offices, kitchen, dining room, a waiting room, X-ray rooms, and two wards for colored patients. The second floor contains two six-bed wards, one four-bed ward, five two-bed wards, and operating rooms. The nurses' home accommodates seven nurses. The project was completed in September 1935 at a construction cost of $48,724 and a project cost of $57,159.
Infinmary Building, State Hospital No. 2, St. Joseph, Missouri

This infirmary is X-shaped in plan and four stories high. It has a capacity of 576 beds, which are in wards and rooms in the ends of the wings, the central portion of the X being devoted to the necessary utility rooms and treatment rooms. Connection with the psychiatric clinic, main hospital, and ward building is by tunnel. The construction is fireproof with exterior walls of brick trimmed with stone. The project was completed in June 1939 at a construction cost of $572,756 and a project cost of $651,435.
Jefferson is the county seat of Greene County, Iowa, near the Raccoon River, and in the middle of the State, about 60 miles northwest of Des Moines. In 1930 it had a population of 3,431.

In the basement of the new hospital are two isolation wards, an X-ray room, a laboratory, a plaster-cast room, emergency and examination rooms, a dining room, kitchen, and laundry. The first floor contains the administrative offices, two semiprivate rooms, four private rooms, and two 4-bed wards as well as two solariums. On the second floor are two 4-bed wards, one semiprivate room, two private rooms, one delivery room, one nursery, one major operating room, and one minor operating room. This makes a total accommodation of 28 beds.

The building is fireproof throughout. The exterior brick walls are trimmed with stone. It was completed in January 1938. The construction cost was $99,008 and the project cost was $107,769.
Administration-Medical Building and Receiving Wards
Minnesota State Hospital for Mental Diseases, Moose Lake, Minnesota

This project consisted of an administration-medical building with receiving ward wings, dormitories, a power plant, industrial and service building, and other structures which were carried out at a cost of approximately $2,419,000.

The main portion of the building shown is the administration-medical section, and the two wings are the men's and the women's receiving wards. The building is part two, part four, and part five stories in height with a basement. The basement of the administration-medical section contains an autopsy room, morgue, telephone and radio room, storage space, and record vaults. On the ground floor are seven doctors' rooms, conference rooms, general offices, stewards' offices, a technician's office, record vaults, and storage rooms. The first floor houses examination rooms, rooms for a pharmacy, two 3-bed wards, offices for the supervisors, the housekeeper, dietician and head nurse, a lounge, and dining rooms for the nurses, the doctors, and the staff. The second floor has waiting, treatment, and recovery rooms; operating rooms; refraction, diathermy, and deep therapy departments; and accessory rooms. On the third floor are wards, major and minor operating rooms, general utility and accessory rooms. The fourth floor comprises guest rooms with connecting baths.

The two receiving ward wings accommodate 150 men and 150 women respectively. On the first floor of each are therapy rooms, recreation, and dining rooms. The upper floors provide patients' single rooms, and three- and four-bed wards.

The construction is fireproof, of reinforced concrete, and the exterior walls are faced with brick and trimmed with stone. The roof is composition. The building was completed in April 1939 at an estimated construction cost of $802,160 and a project cost of $931,700.
This illustration shows the 2-story and basement addition to the City Hospital at Brookings. An emergency operating room is in the basement. The first floor contains the waiting room and office, one 4-bed ward, and 10 semiprivate and private rooms. On the second floor are four semiprivate rooms, four private rooms, an operating room, a delivery room, and a nursery. The old part of the building was remodeled to provide nurses' quarters and service rooms. The structure is fireproof and exterior walls are brick trimmed with stone. It was completed in January 1937, at a construction cost of $80,564 and a project cost of $87,813.
Charity Hospital, *New Orleans, Louisiana*

Continued on following page

FIRST FLOOR PLAN
Charity Hospital, New Orleans, Louisiana

Continued from preceding page

When entirely completed this project will include the construction and equipment of the main hospital, the nurses' home, an ambulance house, a laundry building, incinerator and repair shops, additions and extensions to the boiler and power plant, and alterations, repairs, and additions to several buildings of the existing plant, at an estimated construction cost of $11,976,166 and a project cost of $12,588,166.

The main hospital has a ground floor area of approximately 90,000 square feet, is 12 and 14 stories high in part with a main portion 20 stories high, and will have a capacity of 2,589 beds of which 1,413 are for white patients and 1,176 for colored. There are also 102 beds for the medical staff, admitting, emergency, and clinical rooms, complete provision for operating, laboratories, and special-treatment rooms.

The building rests on wood piles and is constructed with a steel frame, reinforced concrete floor, roof slabs and foundations, and has exterior walls of brick faced with stone.

The nurses' home, shown at the right, is 15 stories in height and of the same construction as the hospital except that it is faced with brick and trimmed with stone. The main hospital building has been carried out at an estimated construction cost of $8,974,452 and a project cost of $9,233,452.
This building at Jamestown is a combined medical unit for diagnosis and treatment, and a men’s ward for care of the insane. It is an E-shaped structure, 6 stories in height, with a capacity of 410 beds and provides private rooms, wards, consultation rooms, operating rooms, and provisions for complete examination of the mentally disturbed.

Construction is fireproof with concrete foundations, a skeleton steel frame, and exterior walls of face brick trimmed with stone. The building is connected to the powerhouse and to other buildings of the institution by a concrete tunnel. It was completed in November 1936 at a construction cost of $304,626 and a project cost of $320,692.
The National Leprosarium, on the Mississippi below Baton Rouge, is the best-equipped leper colony in the world.

The new infirmary, designed and carried out by the Public Buildings Branch of the Procurement Division of the Treasury Department, provides 65 bedrooms, 4 double sets of officers' quarters, and a single set of quarters for other personnel. The treatment facilities make it possible to do much to check or prevent the crippling of limbs which had previously been impossible. In addition there have been provided modern general and research laboratories, and departments of pharmacy, electrotherapy, and hydrotherapy.

The building is fireproof throughout. Construction is steel frame with load-bearing brick walls. The exterior finish is stucco trimmed with stone.

The project was completed in November 1934 at a construction cost of $279,381 and a project cost of $340,843.
The group of hospital buildings erected by the Office of Indian Affairs is the largest hospital group in the Indian Service. It consists of a general hospital with a capacity of 71 beds, ambulatory hospital with a capacity of 96 beds, a dining and recreation hall, garages, nurses' quarters, and 3 doctors' houses. The upper illustration and the plan show the 3 doctors' houses, each one providing a living room, dining alcove, kitchen, laundry, 3 bedrooms, and a bath. The lower illustration shows the nurses' home, which provides quarters for 36 nurses. Native stone is used for the construction of all buildings. The project was completed in January 1938. The P. W. A. allotment for the entire project was $942,900.
Dormitory, State School for the Deaf

Olathe, Kansas

This new dormitory for the State School for the Deaf replaces old buildings constructed more than 60 years ago which were greatly in need of repair and lacked modern and sanitary conveniences.

It is three stories and a basement in height and contains in the basement, dining rooms, kitchen, playroom, a lounge, Boy and Girl Scout meeting rooms, and some bedrooms. On the first floor are two dormitories, bedrooms, administrative offices, reading rooms, and an auditorium. The second floor is occupied by single and double bedrooms and large study halls.

The construction is semifireproof. Exterior walls are brick backed with tile and trimmed with stone, floors are bar-joist construction, and the roof is tile.

The project was completed in November 1935 at a construction cost of $190,649 and a project cost of $190,819.
This project consisted of the construction of an 11-story and basement outpatient and ward building, a 7-story nurses' home, and a power plant.

The outpatient and ward building has a capacity of approximately 500 beds. The lower floors are given up to operating rooms, examination and conference rooms, and laboratories, in addition to the outpatient department. The wards and private rooms with their necessary services are on the upper floors.

The building is fireproof throughout. The frame is reinforced concrete and the exterior walls are faced with brick and trimmed with stone.

The project, consisting of the three buildings, was completed in December 1937 at a construction cost of $2,148,281 and a project cost of $2,388,686.
Municipal Hospital, Sweetwater, Texas

The population of Sweetwater increased from 4,000 in 1920 to 10,000 in 1930, thus entirely outgrowing its hospital.

The new structure is 1 story and part basement in height and contains private rooms and wards to care for 35 patients, an operating suite, a nursery, a dining room, general and diet kitchens, offices, and waiting rooms. The building is semifireproof. The exterior walls are brick trimmed with limestone and the roof is covered with tile. It was completed in May 1936 at a construction cost of $81,322 and a project cost of $86,884.
This project included the construction of several cottages and a dining hall, the latter being the subject of this illustration. It contains the general and staff dining rooms with their services, laundry, garage, and shop. The construction consists of concrete floors, masonry walls stuccoed on the exterior, and wood roof framing. Eight buildings were included in this project. They were completed in July 1938 at a construction cost of $205,909 and a project cost of $216,691.
Elmwood Tuberculosis Sanitarium, *Fort Worth, Texas*

This recently completed tuberculosis sanitarium is 2 stories in height and T-shaped in plan, with over-all dimensions of 202 by 78 feet, and has a capacity of 75 patients.

The front of the building faces south and has continuous screened porches to which entrance from the bedrooms is provided by means of triple-hung windows so that the beds may be wheeled directly from each room to the porch. Other facilities are dining room, kitchen, treatment room, and recreation room. Operating rooms are in the city-county hospital, with which this building is connected.

The construction is monolithic concrete. The project was completed in February 1937 at a construction cost of $101,734 and a project cost of $107,309.
Administration and Classroom Building

New Mexico Asylum for the Deaf and Dumb

Santa Fe, New Mexico

The administration and classroom building is the second unit to be constructed in the program to modernize this institution. In addition to the administrative offices it provides 24 classrooms for the teaching of deaf pupils, vocational shops, and in the third-floor tower, a room for the teaching of special subjects where more area is required than in the standard classroom. Two bedrooms and a bath are provided for resident instructors.

The construction is fireproof. Exterior walls are load-bearing tile with a stucco finish. Foundations and floor slabs are reinforced concrete and the roof is bar-joist construction. The project was completed on December 1936 at a construction cost of $136,228 and a project cost of $145,378.
State Hospital for the Insane

Pueblo, Colorado

This project for the State Hospital for the Insane at Pueblo included the construction of 3 dormitories, a dining hall, and an addition to the nurses' home. The dormitories are 2 stories in height and will accommodate approximately 300 patients. The dining hall (shown in the upper illustration) is T-shaped in plan with over-all dimensions of 131 by 135 feet and contains separate dining halls for men and women. The nurses' home addition provides 38 bedrooms, lounges, administrative offices, and sitting rooms. All of these buildings are fireproof with concrete floor slabs, exterior walls of brick, and roofs either of concrete slab or steel construction. The project was completed in July 1937 at a construction of $400,418 and a project cost of $424,771. The construction cost of the dining hall was $81,018 and its project cost $85,914. Each of the 3 dormitories was erected at a construction cost of $60,110 and a project cost of $63,742. The costs on these individual buildings are estimated.
Camarillo State Hospital for the Insane, Camarillo, California

Ventura County is filled with tradition of the Spanish era in California and this hospital group suits the climate and the location. This project added several buildings to those already constructed and the plant, when finally completed, will house and care for 6,000 patients. In accordance with modern practice, which attempts to rehabilitate the mentally deficient, the buildings provide a maximum of sunshine and ventilation which, together with the landscaped courts and patios, produce an atmosphere of cheerfulness. All construction is reinforced concrete designed to resist earthquake disturbances. The project was completed in May 1936 at a construction cost of $639,836 and a project cost of $670,156.
Children's Tubercular Preventorium

*Atwater, California*

This structure is a combined preventorium and children's hospital, the two units being connected by a large recreation room. The preventorium consists of two dormitories, one for boys and one for girls, separated by a nurses' station, each dormitory accommodating 20 beds. The hospital has an X-ray and an examination and treatment room, three wards, eight single rooms, and the dining room and kitchen. The entire lay-out has a usable floor area of 13,750 square feet.

The construction consists of reinforced-concrete footings, wood frame with stucco finish on the exterior walls, and a mission tile roof. The nurses' home is a separate building illustrated above on the left.

The project was completed in December 1936 at a construction cost of $84,060 and a project cost of $91,584.
This new hospital replaces a wooden structure erected 45 years ago. It is a one-story building and provides an operating department of six rooms, an X-ray department of three rooms, a maternity unit of 10 rooms including two wards, a children's ward, a dental department of three rooms, nine men's wards, two solariums, an observation room, a mortuary, and kitchen and dining rooms for the staff and help. The structure is reinforced concrete with a wood truss roof covered with Spanish tile and is designed to resist earthquake shocks. The project was completed in December 1935 at a construction cost of $90,837 and a project cost of $98,119.
This little hospital is connected to the existing building by a covered passageway. It contains a maternity ward, 11 private rooms, wards for 8 patients, a surgery, two delivery rooms, an X-ray room, other necessary facilities, and doctors' and nurses' quarters. It is semifireproof with exterior walls of cement block painted. It was completed in July 1937 at a construction cost of $45,910 and a project cost of $49,684.
This general hospital building for the State Hospital for the Insane at Phoenix, is 1 story in height and provides 38 patients' rooms and 2 wards. It also provides 2 isolation rooms for violent cases, an operating room, rooms for special treatment, X-ray rooms, a dentist's room, offices for doctors, a kitchen, and dining rooms.

The construction is fireproof. The exterior walls are concrete on concrete foundations, the roof is supported on steel trusses and is covered with tile. The windows are the steel detention type of sash.

The project was completed in April 1939 at a construction cost of $104,729 and a project cost of $111,929.

Continued on following page
The Women's Ward Building is 1 story in height and is T-shaped in plan. Along the front, on either side of the entrance bay, is an enclosed porch 10 feet wide extending the full length of the building. The center wing extending back at the rear contains the dining room flanked by 2 wall-enclosed courts each 85 by 45 feet. The building provides beds for 216 patients, 40 beds being enclosed in diamond mesh-wire partitions in which patients are detained for complete examination before assignment to wards. The project was completed in May 1939 at a construction cost of $85,011 and a project cost of $88,561.
State School for the Blind, *Vancouver, Washington*

This structure is one of a group of buildings occupying a beautiful site overlooking the Columbia River, and is designed to accommodate children.

It is 2 stories in height and contains on the first floor 10 bedrooms, 2 playrooms, 2 classrooms, living and dining rooms, and the matron's quarters. The second floor provides 3 wards, examination rooms, and nurses' rooms.

The construction is fireproof, the frame, floors, and roof being of reinforced concrete, and the exterior walls of brick trimmed with stone. Interior partitions are hollow tile.

The project was completed in September 1936 at a construction cost of $63,646 and a project cost of $68,538.
This building was constructed on a site facing a city park 10 acres in extent. It is part one story and part two stories in height with a complete basement. It contains play rooms and storage rooms in the basement, wards, reception rooms, and attendants' rooms on the first floor, and wards and isolation rooms on the second floor. Since many of the children have partial vision, special attention had to be paid to the lighting. The floors, walls, and piers are concrete, and the walls are faced with brick.

The project was completed in September 1936 at a construction cost of $76,156 and a project cost of $82,283.
Bronx County Jail, New York, New York

The Bronx County Jail occupies a piece of property with a frontage on the street of 275 feet and a depth of 200 feet, and it replaces an inadequate and obsolete structure. It has 222 cells for men and 21 for women and has an average occupancy of 175 prisoners daily. It is equipped for special multiple and individual cell operation and has police signal alarms, a gun-detector unit, and other electrical devices. A special lecture and reception room is on the top floor. The construction is fireproof, the frame of steel and floor slabs of reinforced concrete. The exterior walls are brick. Its volume is 1,326,300 cubic feet and it was completed in October 1938 at a construction cost of $1,366,974 and a project cost of $1,424,264, including equipment.
This building replaces on the same site the old jail which had several times been condemned by the State Commission of Correction. It is most irregular in plan due to the shape of the property. It is the first unit of a proposed combination jail and county office building and is near the county courthouse, the city court building, and the present county office building.

The accommodations consist of a main lobby, the sheriff’s offices, visiting rooms, a chapel, complete kitchen facilities, a laundry, clinic, hospital, morgue, 168 separate cells, and an exercise court on the roof.

The building rests on steel H piles driven to bed rock. It is fireproof with a steel frame and reinforced-concrete floors and roof and the exterior walls on the main facades are faced with sandstone, other walls being brick.

The project was completed in October 1938 at a construction cost of $701,945 and a project cost of $753,407.
State School for Girls
Infirmary and Dormitory
Hallowell, Maine

This combination infirmary and dormitory is the equivalent of 3 stories in height. The dormitory section provides quarters for 140 delinquent girls and the infirmary section has modern hospital rooms, an operating room, a dental clinic, and a sunroom. The building is fireproof throughout, the exterior walls being faced with red brick and trimmed with stone. It was completed in September 1937 at a construction cost of $111,630 and a project cost of $120,294.
This building replaces an old structure which was a firetrap and which could not be properly heated in severe winter weather. It is 2 stories and a basement in height and contains in the basement a dining room, kitchen, laundry, 13 detention rooms, a hospital ward, and an isolation room. On the first floor are offices and a reception room, a matron's suite, a ward, 14 bedrooms, a children's playroom, a girls' playroom, and a boys' playroom with a stage. On the second floor are 16 private rooms, one 6-bed ward, and a nursery. The building is fireproof. The exterior walls are faced with red brick and trimmed with stone and wood. The roof is covered with slate. The volume of the structure is 210,000 cubic feet. It was completed in September 1937 at a construction cost of $110,007 and a project cost of $117,006.
Recreation and Academic Buildings
Sockanosset School for Boys
*Cranston, Rhode Island*

This school is a State institution for educating, training, and disciplining wayward or delinquent boys.

The Recreation Building has a swimming pool 25 by 60 feet, a gymnasium, and an auditorium which seats 260 on the floor, 45 in a balcony, and is equipped with a stage and facilities for sound motion pictures.

The Academic Building, illustrated in the smaller picture, has eight classrooms and shops for the teaching of printing, tinsmithing, tool and machine work, cobbling, and barbering. Both buildings are semifireproof and have exterior walls of brick trimmed with stone.

They were completed in March 1938 at a construction cost for both of $373,350 and a project cost for both of $419,100.
This project consisted of additions to the courthouse and the construction of this two-story reinforced-concrete jail. The jail contains the warden's quarters, dayroom and two cells each for white and colored women, two day rooms and four felony cages for men, isolation wards, and two juvenile cells. It was completed in November 1937 at a construction cost of $43,776 and a project cost of $46,864.
Prison Farm, Tattnall County, Georgia

This up-to-date prison was constructed. The project includes the administration building, 3 dormitories for white and 3 for colored prisoners, dining room, kitchen, laundry, refrigerating plant, commissary, and a group of manufacturing units. In addition there are dairy and farm buildings, a powerhouse, waterworks, and a sewage-disposal plant. The entire area is enclosed in a substantial wire fence.

Under Georgia law, convicts are classified as felony and misdemeanor prisoners, the former being wards of the State, and the latter of the counties in which they were sentenced. The only facilities at the disposal of the State Prison Board for confining the 5,000 felony prisoners, were the antiquated buildings at Milledgeville and the jails of the 158 counties of the State. Accordingly, the State purchased the 7,000-acre Tattnall County farm and an additional 900 acres to be used as a building site, and with a loan and grant from the

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Watch towers are provided at strategic points so that the entire property is under observation. The construction is reinforced concrete throughout, except the dairy and farm buildings, which are frame. The window and door guards and the cell blocks are toolproof steel. With the agricultural and manufacturing work carried on, it is anticipated that the farm will very soon become self-sustaining. It was completed in November 1937 at an approximate project cost of $1,579,118.
The old jail at Talladega was a fire hazard and had been condemned by the State authorities as being inadequate for the safeguarding of prisoners.

The new jail is two stories in height. On the first floor it has an office, a hospital, matron’s room, white and colored women’s wards, and a kitchen. The second floor has cell blocks for white and colored prisoners, day rooms for exercise, and two rooms with cells for white and colored women.

The construction is fireproof with brick exterior walls. The project was completed in June 1935 at a construction cost of $53,263 and a project cost of $64,669.

Talladega County Jail, Talladega, Alabama
Jackson County Parental School  
*Kansas City, Missouri*  

This detention home for delinquent children is a five-story and basement structure. The basement contains some playrooms. The first floor has receiving and conference rooms, the probation officers' rooms, and administrative offices. The courtroom and offices for the judge and court officials occupy the second floor and the third floor has day rooms, dormitories, and playrooms divided for white and colored girls. The fourth floor contains dining rooms, kitchen, and schoolrooms, and the fifth floor is similar to the third floor except that it is for boys.

The construction is reinforced concrete and the exterior walls are faced with limestone. The project was completed in March 1936 at a construction cost of $252,667 and a project cost of $304,025.
The State Penitentiary included in its rehabilitation program Cell House No. 3 which contains four tiers of modern, interior-type cells. On the floor below the cell block are facilities for recreation and a dining room. All the cell blocks are constructed of steel and are arranged to have proper ventilation and the maximum of sunlight. Normal accommodations with one prisoner in each cell give a capacity of 384 prisoners.

The structure is fireproof. Foundations are concrete, exterior walls brick backed with hollow tile, floor and roof slabs are concrete supported on structural steel. The project was completed in April 1939 at a construction cost of $606,258 and a project cost of $686,100.
Warden’s Residence, Federal Detention Farm, *La Tuna, Texas*

Improvements carried out at the La Tuna Detention Farm by the Department of Justice, Bureau of Prisons, included this warden’s residence of painted brick with wood trim and a tile roof. The basement has the heating plant and a recreation room. A living room, study, dining room, breakfast room, kitchen and a bedroom and bath are on the first floor; and three bedrooms and two baths are on the second floor.

It was completed in February 1934 at a construction cost of $12,500 and a project cost of $13,850. The allotment for all the work at La Tuna was $37,000.
State Custodial School

Buckley, Washington

The structure illustrated on this page is the administration building on the left connected to the hospital by a covered arcade. The institution has several other buildings which were built under this docket, all of which are grouped more or less around a quadrangle and will ultimately be tied together by walks, terraces, and planting. The hospital is one story in height and is well equipped to care for the sick inmates of the school.

The exterior walls of all the buildings of the group are concrete, waterproofed and painted; floors are concrete, and roofs are tile on frame construction. The entire project was completed in March 1939 at a construction cost of $560,157 and a project cost of $592,985.
Jail Building
San Juan, Puerto Rico

This structure is one story and part two stories in height and is built around two patio exercise courts, the larger for men and the smaller for women. The first floor provides warden’s, doctor’s, and keeper’s offices, two men’s and two women’s wards, cells, kitchen, pantry, and storeroom. The second floor contains offices for the marshal and living quarters for officers and attendants and one cell. Reinforced concrete is used throughout. This project also included an Industrial School and two grade schools. The entire project was completed in July 1937 at a construction cost of $329,856 and a project cost of $336,248.
This project consisted of dredging for berths, the construction of a stone bulkhead and wharves, an ice-making, freezing, and cold-storage plant, ship chandlers' and outfitters' stores, and an administration building. The owner is the Department of Public Works of the State of Massachusetts.

The wharf has a frontage of 250 feet on Parker Street, a length of approximately 1,100 feet and a width of about 310 feet. Two minor wharves extend 150 feet southeast into the harbor and are 25 feet wide. The construction consists of a granite retaining wall on one side and the end, the other side being protected by rip-rap, and the whole surface is paved. The ice-making, freezing, and cold-storage plant is 230 by 70 feet and three stories in height and has a cold-storage room with a capacity of 1,000,000 pounds of fish and an ice-making plant with a capacity of 55 tons per day. The stores consist of two identical buildings each 270 by 60 feet, two stories in height with a 40-foot passage between them. The ship chandlers' and outfitters' stores are in one building 100 by 40 feet and two stories high. All these structures are fireproof. Ships can berth alongside the buildings in water dredged to 20 feet at mean low water. The project was completed in September 1938 at a construction cost of $1,099,471 and a project cost of $1,173,711.
This structure is used for the storage of food, clothing, and miscellaneous equipment, and is a unit of this institution which cared for 10,000 indigent and infirm wards of the county in 1934.

It is a three-story building of flat-slab reinforced-concrete construction, and is supported on pile foundations. The cold-storage unit is 17,600 square feet in extent and the total volume of the structure is 750,000 cubic feet. It was completed in December 1936 at a construction cost of $304,568 and a project cost of $313,793.
Warehouses
Passenger Station
and
Harbor Improvements

Miami
Florida

The harbor facilities at Miami before the completion of this project consisted of three piers approximately 1,000 feet long, a turning basin, and a channel to the sea with a depth of 25 feet. This project included widening and dredging slip No. 3, enlarging the turning basin, replacing sheet piling of slips 1 and 3, various repairs to other piers, and the construction of two warehouses and terminal buildings. These buildings are fireproof, their masonry walls being stuccoed, and they are fully equipped to handle all types of merchandise delivered at the port. The project was completed in November 1937 at a construction cost of $957,024 and a project cost of $1,014,000.
The port of Mobile is furnished with modern docks and harbor facilities owned and constructed by the State of Alabama. To supplement these facilities the city of Mobile constructed this plant. The project consisted of a slip 800 feet long by 175 feet wide, a pier with necessary tracks, a fruit terminal, and the cold-storage plant, which is a five-story reinforced concrete structure resting on piles. The outside walls are brick backed with hollow tile and the first floor, outside walls, and roof slab are insulated with 6 inches of cork.

The ice plant has a capacity of 50 tons daily. The fruit terminal has all necessary conveyor equipment. The project was completed in August 1937 at a construction cost of $800,802 and a project cost of $878,358.
There had been no accommodations for small craft in the harbor. The project was completed in September 1937 at a construction cost of $384,671 and a project cost of $408,787.

The facilities provided for ocean-going vessels consisted of

Continued on following page

The city of Gulfport undertook a considerable program of improving its waterfront facilities and harbor for small craft, including slips and pier with recreational features, a clubhouse, swimming pool, and tennis courts. Previously
Waterfront Facilities

Gulfport, Mississippi

Continued from preceding page

a wharf 45 by 1,790 feet with three lines of railroad tracks, and the warehouse 122 by 1,760 feet composed of eight compartments. The deep-water channel extending 9 miles to the Gulf had been of no value before this construction was carried out. The project included some dredging beyond the end of the wharf. It was completed in July 1936 at a construction cost of $1,075,507 and a project cost of $1,148,462.
In January 1929 the Brownsville Navigation District was organized to secure a channel up the Rio Grande, 100 feet wide and 25 feet deep from the Gulf to a port near Brownsville. Work was started at the mouth of the channel in December 1933 and the entire project, including the terminal facilities, was substantially completed in August 1937. The project consisted of heavy rock jetties, a dredged channel 16¾ miles long leading to a turning basin 7¾ miles from the city of Brownsville, a concrete wharf, transit sheds, a separate oil dock, and rail and highway connections.

The turning basin is 1,000 feet wide and 1,300 feet long with a uniform depth of 25 feet and almost the entire north side is occupied by the wharf with the transit sheds, each 120 by 400 feet, separated by fire walls. The P. W. A. participated in the project which was carried out at a construction cost of $2,382,292 and a project cost of $2,830,457.
Pier Sheds, Embarcadero, *San Francisco, California*

This project at the port of San Francisco includes two passenger piers, each 161 by 840 feet, with railroad tracks on each side connecting the piers with the railway yards, a transit shed on each pier, and a connecting wharf between piers 35 and 37 for the handling of coastwise cargoes.

All the buildings are constructed of reinforced concrete and steel and are designed architecturally to conform to the other pier sheds and terminals at the Embarcadero. The berth space will care for the largest passenger and coastal boats. The buildings and piers replaced original structures which were erected in 1900 and which had become unsafe for use.

The project was completed in May 1938 at a construction cost of $1,368,476 and a project cost of $1,410,235.
The passenger terminal at the port of Los Angeles consists of a reinforced concrete wharf and a transit shed, 120 by 440 feet, providing 26,000 feet of roofed cargo area. The passengers are separated from the cargo handling and trucking section by means of an elevated corridor 18 feet wide on the ship side of the terminal. An electrically operated, automatically adjustable, traveling passenger landing stage and gangplank serves to connect vessels with the corridor. Ample baggage inspection space is provided next to the second-floor passenger corridor and after inspection, the baggage is transported across the shed on a conveyor to an hydraulically operated elevator which carries it to the rear loading platform. The fruit terminal is used primarily for unloading bananas arriving on vessels in the South American trade. It consists of a creosoted-timber landing wharf upon which are erected three gantry cranes with mechanically operated marine legs which can be lowered into the holds of ships. The bananas are loaded into pockets of continuous conveyors which carry them to the wharf level where they are loaded into refrigerator cars.

The project was completed in January 1938 at a construction cost of $1,086,324 and a project cost of $1,152,156. The steamship company operating the fruit terminal provided the gantry cranes.
The port of Oakland is one of the largest ports of call in northern California. The P. W. A. assisted the State and the Port Authority to enlarge the wharfs and the outer harbor terminal. The project included reinforced concrete and creosoted pile wharfs, 850 feet of berthing space, 123,500 square feet of wharf area, 201,000 square feet of paved area on fill, 5,800 feet of railroad tracks, 114,300 square feet of roadway, and a reinforced-concrete transit shed with 49,100 square feet of storage area.

The three projects were completed in May 1937 at a total construction cost of $583,978 and a project cost of $610,825.
This new disposal plant is located just outside of the city limits of New Britain in the town of Berlin and replaces nine sand-filter beds. The sewage in this community contains large quantities of industrial waste which were difficult to treat, with the result that the beds became clogged soon after they were put into operation and gave a great deal of trouble. In the new plant the sewage is treated by the Guggenheim method which is a patented process requiring primary settling tanks, dosing and aeration tanks, and final settling tanks. The sludge from the latter is pumped through the service building where it is chemically treated, vacuum filtered, and finally incinerated. The results have been most satisfactory. The project was completed in July 1937 at a construction cost of $354,661 and a project cost of $437,036.
Middlesex is an industrial and residential community on the Raritan River about 5 miles from New Brunswick. Before the construction of this plant there was no public sewer system and raw sewage in general found its way into the river. This project consisted of the construction of a complete system of sanitary sewers and of the treatment plant. The plant includes a control building, clarifiers, two flocculators, a sludge-digestion tank, and drying beds, and the process consists of one-course screening, chemical treatment, sedimentation, sludge digestion, and dehydration in glass-enclosed drying beds. The tanks are concrete and the control building is brick with a slate roof. The project was completed in March 1938 at a construction cost of $488,035 and a project cost of $553,738.
The fishing village of Hampton with a normal population of 1,500, becomes in summer a resort center for a population of 40,000. The construction of this plant ended a nuisance on the ocean beaches as well as a danger to health, since formerly sewage had been discharged directly into the sea. The new work included intercepting sewers to conduct the sewage to a pumping station from whence it was carried to the new plant on an inland site. The treatment consists of two-stage sedimentation and digestion. Digested sludge is pumped to drying beds while the effluent from sedimentation passes over trickling filters, is chlorinated and discharged into a tidal estuary. The project was completed in June 1935 at a construction cost of $144,193 and a project cost of $166,020.
Sewage Disposal Plant

St. Albans, Vermont

Before completion of this project all the sewage of St. Albans, a city of about 8,000 population, was discharged untreated into a water course flowing into Lake Champlain.

The new plant provides treatment at three points. At plant A a grit chamber was provided and an overflow lagoon was built to hold back the storm flow and to feed it to the treatment plants below at a regular rate. Sludge from this lagoon is pumped to a digestion chamber and the digested sludge is pumped to drying beds. Plant B, a mile west of plant A, passes the sewage through an aeration tank from where it proceeds a mile farther on to plant C where it receives final treatment before discharge into a watercourse. The illustrations shown are of plant A.

The project was completed in August 1935 at a construction cost of $91,792 and a project cost of $112,766.
The original disposal plant at Pittsfield treated sewage collected in underground reservoirs which acted as sedimentation tanks from which it was pumped to sand filter beds covering 41 acres. This project consisted of installing a trickling filter next to the sand beds, extending the force main across these beds to supply the trickling filter through proper dosing tanks, the erection of a control building, a laboratory and garage, a mechanical screen near the pumping station, water and power supply for the plant, and hard surface drives from the highway. The trickling filter is of crushed rock, is 10 feet deep, has a surface area of 1½ acres and a capacity of 4,000,000 gallons per day.

The project was completed in August 1937 at a construction cost of $259,552 and a project cost of $284,017.
Sewage Treatment Plant

Stroudsburg
Pennsylvania

The erection of this sewage treatment plant at Stroudsburg put an end to the undesirable practice of discharging raw sewage directly into Pocono Creek, a tributary of the Delaware River. The project included the construction of intercepting sewers leading to a site below the city and of the treatment plant on this site. The process consists of coarse and fine screening, sedimentation, and sludge digestion. The digested sludge is pumped to glass covered drying beds and is later marketed as low-grade humus or top dressing. The effluent from the sedimentation basins passes to the cylindrical trickling filters where biochemical action breaks down the dissolved and minute suspended organic matter into harmless compounds. The effluent from these filters is chlorinated and discharged into the stream. The process represents the ultimate in purification. The buildings and tanks are constructed partly of concrete, partly of brick, and partly of native rubble stone. The project is part of a long-range plan of the Pennsylvania State Board of Health to restore the rivers and streams of the State to their original unpolluted condition. It was completed in June 1937 at a construction cost of $157,371 and a project cost of $173,266.
The Metropolitan District Sewage System, South Meadows, Hartford, Connecticut

The sewage-treatment plant at Hartford occupies a site of approximately 14 acres on the south end of South Meadows, about 3 miles south of the city hall. The plant construction included a rack house, two gate houses, an administration building, eight reinforced-concrete sedimentation tanks, a pumping station, a storage building, four sludge-digestion tanks, a gas control house, four elutriation tanks, and a filter house. The plant has a capacity of 40,000,000 gallons per day, based on a 2-hour detention period which can be increased to 80,000,000 gallons per day by halving the detention period without impairing efficiency. The effluent is discharged into the Connecticut River and the dried sludge cake is removed to a dump. All the buildings at the plant are fireproof and of similar design. The project was completed in August 1938 at a total construction cost of $3,147,804 and a project cost of $3,718,671.
This sewage-treatment plant is large enough to care for all the sewage from an area of 1,700 acres, the population of which is 300,000. It is the first of 4 similar units which will be built on the city-owned site and which, when completed, could care for a population of 1,200,000.

The illustration shows one of the four large concrete sedimentation tanks. Behind it is the chemical building in which are storage bins for the chemicals used in the treatment process, machines and other equipment used in applying the chemicals, and the laboratory for chemical analysis. The gas generated in the digestion tanks is used to generate heat and electric power for the entire plant, and the sludge residue is discharged at sea.

The project was substantially completed in April 1937 at a construction cost of $1,764,473 and a project cost of $1,873,798.
Sewage Disposal System, *Milford, Connecticut*

The Milford sewage-disposal project consisted of the construction of tanks, drying beds, a power-plant building, and a sludge-pump house. It is designed for a population of 5,000 people. There are no sewers in the outlying districts. The process consists of primary sedimentation, aeration, final settling, sludge digestion, sludge drying, and chlorination and discharge of the effluent into Milford Harbor. The power-plant building is concrete and brick and rests on piles. Its roof is covered with asbestos shingles. It was constructed, together with the superstructure of the sludge-pump house, on a separate contract about a year after the rest of the plant was done. The project was entirely completed in August 1936 at a construction cost of $397,571 and a project cost of $462,846.
This project consisted of extension of the general sewer system, construction of intercepting sewers, the purchase of a site, and construction of the treatment plant and of several small pumping stations.

The treatment plant has a capacity of 1,000,000 gallons per day and includes screening and scum collection, primary treatment by sedimentation, sludge digestion, sludge drying under glass, chlorination of the clarified effluent, and its discharge into the Raritan River. Gas from the digestion process is used for heat.

The project was completed in March 1938 at a construction cost of $253,778 and a project cost of $292,841.
Sewers and Sewage Treatment Plant, Highland Park, New Jersey

The borough of Highland Park, across the Raritan River from New Brunswick, was formerly served by sewers which discharged directly into the river.

The new disposal plant is located on meadow land on the north bank of the river and consists of two units of settling tanks including mechanical sludge removers, two sludge digestors, glass-covered sludge beds, a one-story control building, 12,700 feet of 8- to 30-inch intercepting sewers, and a pumping station and siphon chamber. The treatment consists of one course of screening, sedimentation, separate sludge digestion, and drying.

The control building contains a laboratory, an office, a pump room, and an operating floor. The exterior walls are red brick with terra-cotta and wood trim. The project was completed in October 1936 at a construction cost of $228,401 and a project cost of $266,373.
Rahway joined with several other towns to eliminate the obnoxious condition existing due to sludge deposits caused by discharge of raw sewage into the Rahway River. The sewage-treatment plant, together with intercepting sewers, now cares for the sewage of all the towns which joined to form the Rahway Valley joint meeting. A pumping station collects and pumps the Rahway sewage into a trunk sewer by which it passes to the treatment plant. The design of the whole system is based on the expected increase in population over a period of 35 years. It has a capacity of 4,000,000 gallons daily and was completed in January 1938 at a construction cost of $400,277 and a project cost of $452,810.
Blower House and Control Building

Back River Sewage Treatment Works

*Baltimore, Maryland*

The Back River Sewage Treatment Plant cares for approximately 1,000,000 gallons of sewage a day for the city of Baltimore. It is situated 2 miles from the eastern boundary of the city on Back River, which flows into Chesapeake Bay.

It consists of two aeration tanks, an activated sludge station, two final settling tanks, mechanically operated sludge-removal mechanism, two mechanically operated sludge-concentration tanks, sludge-thickener mechanism, a control building, and a sewage influent and effluent conduit system. The upper illustration is of the blower house. Work is still in progress at the plant. The blower house was built at an approximate cost of $159,200 and the control building and grit removal chambers were completed in November 1938 at a cost of $148,108.
Boyetown which has a population of approximately 6,000 is one of the largest boroughs in Bucks County and has a considerable number of manufacturing plants. Before the completion of this project, sanitary and industrial waste was disposed of by means of cesspools, by surface drainage, and by discharge into storm-water sewers, as a result of which the streams of the vicinity had become polluted. The project consisted of the construction of the sewage-treatment plant, a trunk-line sewer, outfall sewers, and an uplift pump station. The new sewer system included approximately 15 miles of vitrified terra-cotta pipe with service connections on laterals to each building in the town and additional branches to care for future development. The quantity of sewage handled daily varies from 400,000 to 1,000,000 gallons per day. The process of sewage treatment consists of metering, primary sedimentation, activation, final clarification, sludge digestion, sludge drying in open beds, and chlorination of the effluent. The plant is of concrete construction throughout and is equipped with the most modern machinery. It was completed in June 1939, the estimated construction cost being $287,228 and the project cost $328,672.
This new sewage-treatment plant serves a suburban area of Philadelphia which includes the villages of Wayne, Saint Davids, Radnor, Ithan, and parts of Villanova, Rosemont, and Bryn Mawr.

The process of disposal consists of screening, primary and secondary sedimentation, activated-sludge treatment, followed by sludge digestion. After digestion the sludge is mechanically dewatered and finds a market as humus or park top dressing. The effluent is chlorinated before discharge into natural watercourses.

The buildings are constructed of native stone in the style common in this district. The project was completed in July 1938 at a construction cost of $347,476 and a project cost of $364,001.
The Buffalo sewer and sewage treatment project was undertaken because of an international treaty with Canada which required all of the cities on the Great Lakes to stop discharging untreated sewage into boundary waters. The sewage-treatment plant is on an island in the Niagara River and is fed by 13 miles of interceptors along the waterfront. Treatment consists of clarification by sedimentation, chemical treatment of the effluent before its discharge into the Niagara River, partial digestion of sludge, dewatering of the sludge in vacuum filters, and its incineration in furnaces at a high temperature to completely destroy all organic matter. A gas with high thermal value is a byproduct of the sludge digestion. The buildings are constructed of steel and concrete and have white brick exteriors trimmed with stone. During construction the contractor developed power-operated structural steel sweeps for shaping the bottoms of the settling tanks. The project was completed in March 1939 at an estimated construction cost of $13,394,906 and a project cost of $15,152,597.
If one looks down from a train crossing the Hell Gate Bridge, a group of buildings with landscaped grounds may be seen on Wards Island. This represents the sewage-disposal plant that now treats all the sewage on the east side of Manhattan Island from Seventy-second Street to One Hundred and Seventy-eighth Street. Ultimately it is intended to enlarge the plant to take all the sewage from the West Side from Forty-third Street to the north end of the island at the Harlem River.

This project involved the construction of 13 miles of interceptors along the East River and the Harlem River and two deep-rock inverted-siphon tunnels between Manhattan, the Bronx, and Wards Island. The most modern methods of sewage treatment are provided and the sludge is periodically removed and dumped by an ocean-going tank scow far out at sea.

Most of the work is underground. The buildings are simply sufficient to house the mechanical equipment and to provide offices for administration. The walls are brick trimmed with stone and the construction is steel and reinforced concrete. The project was 98 percent complete in September 1939 at an estimated construction cost of $21,536,200 and an estimated project cost of $24,720,263.
This project included the completion of, or addition and improvement to, three sewage-treatment plants known as the Easterly, Southerly, and Westerly plants which had been begun before the creation of P. W. A. The larger illustration shows the Easterly plant and the smaller the Southerly plant. The property at the Easterly site was not of sufficient size for a complete plant, as a result of which 13 miles of pipe were laid to the Southerly plant, through which the sludge is pumped for digestion and incineration.

The work carried out in the Easterly plant included construction of detritors and grit chambers, grease catchers, presettling tanks, aeration tanks, secondary settling tanks, blower equipment and building, administration building, conduits, etc.

The funds made available by the P. W. A. were a loan and grant of $9,436,000. $4,019,000 was spent for construction work at the Easterly plant, $3,736,000 at the Southerly plant, $756,000 at the Westerly plant, and $494,000 on the sludge main. The total approximate construction costs for the three plants, including expenditures prior to P. W. A., were $12,245,-000, and the total project costs were $14,964,000. The entire project was substantially completed and in operation in September 1938.
This sewage-treatment plant put a stop to pollution of the Scioto River, into which sewage was being discharged, thus ending a serious menace to public health. The plant is of the "activated-sludge" type and includes screens, pumps, blowers, grit chambers, sedimentation, sludge digestion, vacuum filtration, aeration, and final settling. The buildings which house a portion of the mechanical equipment, are reinforced concrete faced with stone. The project was completed in September 1938 at a construction cost of $3,633,962 and a project cost of $3,945,805.
The project for sewage collection and treatment for the sanitary district of Chicago is one of the largest single projects of the P. W. A. It involves many miles of intercepting sewers, some of which are the largest size sewers ever built. The treatment of the sewage is carried out at several points and one of these, known as the Calumet plant, is herewith illustrated. It consists of a pumping station and the treatment plant in which the process is rapid sedimentation, sludge treatment and disinfection of the effluent which is then discharged into the Chicago drainage canal away from Lake Michigan, through the Calumet-Sag Canal.

The building, shown in the illustration, houses the low-lift pumps and the chemical control and auxiliary departments. Its plan was determined entirely by the mechanical and hydraulic requirements. It is fireproof, constructed of steel and reinforced concrete, and the exterior walls are faced with brick and trimmed with stone. It stands alone in a large, level, and landscaped area, and its massive contemporary style of architecture seems well suited to its purpose.

This part of the project was completed in August 1939 at a construction cost of $3,997,249 and a project cost of $4,077,535. The cost of the entire project up to December 31, 1938, was $56,144,963 at which time the project was 94 percent complete.
This sewage-treatment plant replaces three small detached plants which served the city inadequately. It is designed to care for all the sewage for a population of 21,000 people and the process consists of primary sedimentation, activated sludge treatment, and chlorination of the effluent.

The project included construction of more than 2 miles of intercepting sewers, a low-lift pumping station, sedimentation basins, sludge tanks, and necessary piping. The pumping station, built of local stone and with a slate roof, is illustrated above. The project was completed in October 1937 at a construction cost of $394,438 and a project cost of $422,501.
Before the completion of this plant, the city of Laporte discharged raw sewage and industrial waste directly into a drainage ditch which had a very small dry-weather flow with the result that an intolerable nuisance was created. The new plant represents almost the ultimate in sewage purification. The process consists of grit separation, sedimentation, and treatment of the sludge and effluent. The sludge is conditioned, dewatered, and incinerated, and the effluent is passed over trickling filters before discharge into a water course. The plant is designed for a daily capacity of 2,870,000 gallons, a capacity which allows for considerable increase in population. The project was completed in September 1937 at a construction cost of $228,561 and a project cost of $251,152.
Sewage Disposal Plants

Project 4741 (Ind.)

Sewage Treatment Plant

_Goshen, Indiana_

The completion of the new sewage-treatment plant at Goshen ended the practice of discharging raw sewage into the Elkhart River.

The project consisted of the construction of about 5 miles of interceptor sewers, the treatment plant, and about 1,200 feet of out-fall sewer.

The process consists of low-lift pumping, screening, grit separation, primary sedimentation, and sludge digestion. The gas generated by the sludge digestion is used for heat and power. The digested sludge is pumped to drying beds and later disposed of as humus or low-grade fertilizer. The effluent from primary sedimentation is chlorinated and discharged into the river, but the lay-out and site are so arranged that secondary and final treatment may readily be provided when required.

The buildings, faced with limestone, and the planting, give the whole plant the effect of a park.

The project was completed in May 1936 at a construction cost of $385,794 and a project cost of $449,785.
Virginia Beach has a normal population of 3,000 which increases to 15,000 during the summer months. The obsolete sewage-disposal system of the city has been modernized by the construction of this treatment plant of the activated-sludge-process type, the capacity of which cares for the needs of the summer population. The building shown is the control house. The project was completed in January 1939 at a construction cost of $155,792 and a project cost of $171,472.
Sewage Disposal Plant

Atlanta, Georgia

Atlanta includes an area that consists of four separate watersheds which necessitated the construction of four sewage-disposal plants. The South River plant is herewith illustrated. Raw sewage from its district, amounting to 3,000,000 gallons per day, was formerly discharged directly into a small watercourse.

The South River plant operates on the basis of primary and secondary sedimentation, sprinkling filters, digestion tanks, sludge-drying beds, and final chlorination of the effluent. The plant is so built that it may be easily expanded to care for a daily flow of 6,000,000 gallons. At the present time it is capable of caring for 4,500,000 gallons a day.

The small building illustrated contains offices and laboratories and is constructed of brick with stone trim and a slate roof.

The project was completed in January 1938 at a construction cost of $1,305,495 and a project cost of $1,424,500.
This enormous project was divided into three parts and its completion provides complete sewage disposal for the cities of St. Paul and Minneapolis. The larger illustration is an aerial view of the disposal plant on the bank of the Mississippi River and the smaller is a view of the filtration and incineration building at this plant. The equipment at the plant includes grit chambers, flocculating and settling tanks, effluent filters, concentration tanks, vacuum filters, and incinerators. The capacity is 150,000,000 gallons daily. A brush-mattressed riprapped dike about 3 feet higher than grade protects the plant from high water in the river. The buildings are fireproof, simply designed, and faced with brick trimmed with stone. More than 9 miles of interceptor sewers were constructed in the three parts, and the system was ready for use in May 1938. The construction cost was $14,874,692 and the project cost $15,802,765.
This structure houses the two primary settling tanks of the round radial flow type, each 60 feet in diameter, and is an important unit of this treatment plant. Its frame is reinforced concrete, the exterior walls are tile, and the roof is covered with composition shingles.

The entire project is part of a plan of Fargo and other towns in its vicinity to stop the discharge of sewage into the Red River of the North. It was completed in May 1936 at a construction cost of $708,096 and a project cost of $766,856.
Sewage Disposal Plant, *Sioux Falls, South Dakota*

This project consisted of the addition to the existing sewage-disposal plant at Sioux Falls of a flocculator, activated-sludge tanks, clarifiers for treatment of filter effluent, necessary pumps, air blowers, auxiliary equipment, and buildings.

The illustrations show a general view of the plant and the interior of the blower-plant building with the motor-driven blowers.

The project was completed in February 1936 at a construction cost of $213,833 and a project cost of $236,912.
The site of this plant is a 23-acre tract of land on the banks of the Colorado River.

It is an activated-sludge type of treatment plant and includes a Venturi meter for measuring flow, automatic mechanical screens for removing rubbish, preliminary settling basin, aeration tanks, and is otherwise equipped to handle a peak load of 12,000,000 gallons of sewage per day. The tanks, buildings, and underground tunnels are constructed of reinforced concrete, and piping of all kinds is cast iron enclosed in spacious tunnels to make it readily accessible.

Gases, which are a product of sludge digestion, are used for heating buildings and water. The sludge is dried, pulverized, and used for fertilizer.

The grounds surrounding the plant, including the outer slopes of the protective levee, are planted with a thick sod of Bermuda grass which is a protection against erosion during floods of the river.

The project was completed in June 1937 at a construction cost of $939,954 and a project cost of $979,500.
Sewage Disposal Plant

Pueblo, Colorado

The city of Pueblo formerly discharged its sewage into the Arkansas River, which greatly endangered the health of many communities in Colorado and Kansas and which depended upon this river for their water supply. The State board of health required this condition to be remedied and this was done with P. W. A. aid.

The equipment at the new plant consists of two digestion tanks each 65 feet in diameter, seven trickling filtration units each 160 feet in diameter, two 80-foot primary clarifiers, and two 80-foot final clarifiers. The sewage volume of Pueblo is abnormally large, considering its population of 50,000, but the plant constructed has extremely low maintenance and operating costs.

The project was completed in December 1938 at a construction cost of $468,089 and a project cost of $503,148.
Sewage Treatment and Disposal Plant, San Francisco, California

The Richmond-Sunset sewage-treatment plant is in the Golden Gate Park, San Francisco. The entire project, known as "the sanitary program for the city and county of San Francisco," consisted of reconditioning and rebuilding existing sewer lines together with the erection of necessary pumping stations and sewage-disposal plants. The old system consisted of a network of sewers throughout the thickly populated section of the city which discharged raw sewage directly into San Francisco Bay. With the construction of this and two other plants, the contamination of the bay waters was eliminated. The process consists of screening, sedimentation, sludge digestion, sludge drying and chlorination, and discharge of the effluent into a sewer. The buildings at the Richmond-Sunset plant are constructed of reinforced concrete. The project was completed in January 1939 at a construction cost of $2,377,034 and a project cost of $2,581,277.
Laguna Beach is a residential community, on the coastal boulevard midway between San Diego and Los Angeles, and is very popular with artists, writers, and musicians. The sewage-treatment plant, here illustrated, cares for the sewage from the south district of the settlement, and the process consists of primary sedimentation, aeration, secondary sedimentation, and chlorination. The project included also a main intercepting sewer. The character of the concrete structures is a departure in the design of a treatment plant. The project was completed in 1935 at a construction cost of $165,838 and a project cost of $195,643.
Sewage Disposal Plant, *Newport Beach, California*

This treatment plant is one unit of a project which also included three pumping stations and several miles of sewers. The plant comprises the two concrete Imhoff tanks, the gas tank, and one pumping station illustrated above. It was completed in 1937 at a construction cost of $328,574 and a project cost of $359,472.
The Federal Government located one of its subsistence homestead projects in the El Monte community. As a result, so much interest was aroused in the development of subsistence farms that approximately 2,000 acres of farm land was subdivided and settled by residents of the metropolitan area of Los Angeles, who built their homes along the banks of the Rio Hondo River which was badly polluted by the existing El Monte sewage system. To overcome this condition, which was a serious menace to the health of the community, the new disposal plant was constructed which consists of a primary clarifier, a trickling filter, two digestion tanks, and a sludge bed. The efficiency of the plant is high, and the effluent now emptying into the Rio Hondo River is clear and odorless.

The project was completed in October 1936 at a construction cost of $56,014 and a project cost of $65,084.
Medford Sewage Disposal Plant, Medford, Oregon

Oregon is doing much to eliminate the pollution of its streams, and Medford was one of the first towns to provide itself with a sewage-treatment plant. The process consists of preliminary sedimentation, sludge storage, sludge digestion, chemical treatment of the effluent and its discharge into Bear Creek, and sludge drying. The small structure illustrated is one of the two buildings in the project, and as no inflammable materials are stored in it, the construction is entirely of frame except the concrete floor and foundation walls. The basement houses controls, valves, etc. The project was completed in July 1936 at a construction cost of $105,628 and a project cost of $120,946.
Completion of this sewage-disposal plant was the final step in the program of cleaning up the Potomac River front at Washington, and was much needed since the river is almost entirely lined with parks, and the discharge of untreated sewage into it had created an intolerable condition.

The project provides a low-lift pumping station which discharges effluent by gravity to the treatment plant. The functions of the plant include primary screening, grit collection, grease and scum separation, sedimentation with treatment of sludge by the activated-sludge process, and sludge dewatering.

The buildings to house the machinery are of brick. The pumping station is shown on the left and the power station on the right.

The project was completed in September 1938 at a construction cost of $3,805,829 and a project cost of $4,076,304.
This project consisted of the construction of two incinerator buildings, one at 56th Street and 12th Avenue, one near the approach to the new Whitestone Landing Bridge in Queens, the reconstruction of the Bergen Landing and Betts Avenue incin erators, and the construction of a garage for the department of sanitation. The 56th Street plant and the garage, which are illustrated on this page, have a skeleton steel frame, floors and walls of reinforced concrete, and the exterior walls faced with a black-brick base, bands of buff brick, and steel sash. It is the largest incinerator in the project and has a capacity of 750 tons daily. The garage houses 350 large garbage trucks. The project was completed in January 1939 at a construction cost of $3,536,933 and a project cost of $3,816,413.
This project is one of several built with the aid of P. W. A. which provided Frederick with sewers, a modern sewage-treatment plant, and the incinerator building illustrated on this page. This structure contains a pump room, a concentrated-sludge well, a raw-sludge well, a sludge-pump well, and the incinerator which burns the sludge and the city garbage and refuse as well. The building is fireproof. All construction below ground is reinforced concrete, the exterior walls are brick and all doors and sash are steel. The incinerators are rated at 60 tons per day. The building was completed in March 1938 at a construction cost of $128,916 and a project cost of $147,554.
The new incinerator at Morgantown replaces a structure built in 1912 on a 29-acre site across the Monongahela River from the city. The project included demolition of the old plant and the construction of a storage building and a new incinerator with a capacity of 80 tons of refuse per day. It also included construction of a 20-ton truck scale and a garage in the city, as well as the purchase of two standard rubbish trucks.

Construction is fireproof. Foundations, floors, and roof slab are reinforced concrete, the roof slab being supported on steel trusses. Exterior walls are brick with concrete copings.

The project was completed in April 1936 at a construction cost of $89,798 and a project cost of $96,577.
Incinerator No. 1  
*Columbus, Ohio*

The incinerator illustrated herewith is one of two units constructed by Columbus to handle mixed rubbish and garbage. It is part of a general plan to improve the sanitary conditions of the metropolitan district comprising the city and adjoining areas.

The building is merely a shell to house the necessary equipment and is an example of the strides that have been made in this type of structure. The construction is steel and reinforced concrete, exterior walls being faced with brick and trimmed with terra cotta.

The project was completed in February 1937 at a construction cost of $201,112 and a project cost of $217,712.
Northwestern Incinerator

Detroit, Michigan

Four similar garbage incinerators were constructed in Detroit under this project and they are so located that the hauling of garbage in the city streets is reduced to a minimum. The loaded trucks enter an enclosed space and rear dump into a concrete bin from which the mixed garbage and rubbish is transported by a traveling crane equipped with a clamshell bucket, into hoppers from where it is introduced into the furnaces and burned at high temperatures. The northwestern plant, illustrated on this page, has a daily capacity of 350 tons and all four plants have a capacity of 1,400 tons. The buildings are fireproof. The project was completed in December 1938 at a construction cost of $1,312,363 and a project cost of $1,343,323.
A serious menace to health and falling property values caused the rapidly growing city of Shreveport to discontinue depositing garbage and rubbish on dumping grounds and to build this modern incinerator.

Trucks dump the refuse into large receiving bins from which it is carried by overhead cranes to hoppers on the second floor and fed into the incinerators. The basement is used for ash removal and truck storage.

The plant has a capacity of 150 tons per day and serves approximately 100,000 people. The exterior walls are faced with white brick trimmed with stone and dark brick. It was completed in July 1935 at a construction cost of $170,763 and a project cost of $183,008.
Lawrence Waterworks Improvements, Lawrence, Massachusetts

This project consisted of additions and improvements to the city's water-purification plant comprising a coagulation basin, chemical and filter building, low- and high-lift pumping stations, aerator, dike, yard piping, grading, and driveways.

Filter alum, soda ash, and activated carbon are added to the raw water in the mixing tanks. Sediment is discharged into the river below the intake and the water passes to the 10 rapid filters, each of which has a capacity of 1,000,000 gallons per day. For aeration, the water flows to a spray pond from which it is delivered to the three covered sand filters. The structure illustrated is the filter building.

The project was completed in April 1939 at a construction cost of $625,997 and a project cost of $674,771.
Filter Plant Building, Norwalk Water System

Norwalk, Connecticut

One of these projects consists of the dam and reservoir at Silvermine and the other includes a new intake structure, a 5 m. g. d. filtration plant, a 20-inch transmission main with additions and alterations to the distribution system, and a treatment plant in the city of Norwalk.

The illustrations show the filter-plant building, which was so designed to overcome zoning restrictions. The two-story head house is in front, the filter house is at the rear, the settling basin is underground, and the aerator is on the roof of the settling basin. The filter plant was completed in July 1937 at a construction cost of $217,605 and a project cost of $278,311. The dam and reservoir was completed in May 1935 at a construction cost of $181,651 and a project cost of $192,725.
Coney Island Fire Service Pumping Station

_Coney Island, Brooklyn, N.Y._

This interesting structure is approached by a wide walk between lawns which leads to the main entrance flanked by sculptured twin representations of Pegasus. The main floor is 12 feet below grade to permit the pumps to be placed below the intake water level, and at the grade level is a gallery extending around the entire building. An overhead traveling crane serves the five electrical pumps which are capable of discharging 13,500 gallons of water per minute at a pressure of 200 pounds per square inch.

The construction is fireproof, of steel and concrete with exterior walls faced with stone. The masonry above the continuous windows is suspended from the cantilevered ends of the roof girders. The windows can be protected from fire by water curtains. The project was completed in July 1937 at a construction cost of $437,574 and a project cost of $452,804.
Reservoir and Auxiliary Water Supply

*Mamaroneck, New York*

The auxiliary water supply for the towns of Harrison, Mamaroneck, and the village of Mamaroneck consists of an intake line, a pumping station, 5½ miles of 20- and 24-inch cast-iron pipe including the necessary valves and hydrants, two underground reservoirs, and the elevated water tank illustrated on this page. The pumping station is at Rye Lake, from which point the water is elevated about 100 feet through 4,000 feet of pipe after which it flows by gravity 4 miles to the water tank. The tank is 43 feet in diameter, 51 feet 5 inches in height, and has a capacity of 400,000 gallons. Each of the underground reservoirs has a capacity of 340,000 gallons. The new system replaces a wasteful method of supplying water from New York City through open channels, which not only required repurification and excessive pumping but entailed a loss of from 30 to 50 percent through evaporation and seepage. The project was completed in October 1938 at a construction cost of $397,129 and a project cost of $457,986.
This project increased and improved the existing water supply of Reading. It included the construction of a 20,000,000-gallon per day filter plant, a 2,000,000-gallon steel standpipe, the rebuilding and covering of a 30,000,000-gallon reservoir for storage of filtered water, the construction of intake works, the construction of a 2,800-foot supply tunnel, the building of a dam 2,900 feet in length, and the construction of a reinforced concrete bridge 550 feet in length with approach roads. Above is an illustration of the Lake Ontelaunee spillway and below is one of the Maiden Creek filter plant. This filter plant is a fireproof structure with walls of rubble stone trimmed with limestone and slate-covered roofs. It contains laboratories as well as all facilities for treatment of the water. The entire project was completed in October 1936 at a construction cost of $2,343,321 and a project cost of $2,537,335.
This standpipe is part of a large project which included replacements to high-service pumps, a filtration plant, a settling basin, and nearly 4 miles of cast-iron pipe lines with service connections and hydrants. The filtration plant is rated at 1,000,000 gallons per day and takes the water from Lake Marshall, which is an artificial lake.

The standpipe has a capacity of 300,000 gallons. It is constructed entirely of steel and as it stands on a height of ground in a park of great natural beauty, considerable thought was given to its design. Its flat roof was turned into an observation platform reached by an exterior spiral stairway and covered by a domed roof, the underside of which is painted blue and decorated with constellations of stars. The entire project was completed in November 1937 at a construction cost of $177,064 and a project cost of $193,546. The approximate cost of the standpipe was $23,000.
Masonry Enclosed Standpipe

Bureau of Water Supply

Baltimore, Maryland

The McIlvin Avenue Reservoir is in Catonsville, a part of the metropolitan area of Baltimore. It serves as a balancing reservoir for a somewhat isolated portion of the distribution system of the city and is a steel standpipe with a capacity of 4,000,000 gallons. The brick wall trimmed with limestone surrounds the tank at a distance of 3 feet from it, to allow space for maintenance and inspection of the tank. The steel roof of the standpipe gives the appearance of being the roof of the enclosure.

The project was completed in May 1938 at a construction cost of $140,728 and a project cost of $142,420.
This project consisted of remodeling an existing office wing of the pumping station for use as part of the boiler house, and the construction in front of the group of this new office building. This structure is three stories in height and provides the usual facilities for storage of records and accommodation of customers and the operating force.

It was completed in October 1935 at a construction cost of $255,998 and a project cost of $291,011.
These two P. W. A. projects increased the capacity of Cincinnati’s plant from 80 m. g. d. to 240 m. g. d. The aerial photograph shows the plant after all the work was completed and the other illustrations show the character of design of the brick and stone buildings.

The clear-well cover was completed in July 1936 and the filtration plant in June 1938. The construction cost of both was $2,947,743 and the project cost $3,131,990.
Hammond's water supply is taken from Lake Michigan and, before the completion of this new plant, was drawn into settling basins and after chlorination was pumped directly into the distribution system. The new plant provides 20,000,000 gallons per day of filtered water and includes a new low-lift pumping station of 35,000,000 gallons per day capacity, mixing chambers, chemical equipment, sedimentation basins, filter units, and a 6,000,000-gallon clear-water storage reservoir. The plant is located on land reclaimed from Lake Michigan by sand pumping, and the project included the necessary sea walls to hold this sand fill. The illustration shows a view of the filter building and the sedimentation basins. The project was completed in May 1938 at a construction cost of $892,351 and a project cost of $970,910.
This project consisted of the construction of a complete filtration plant, including a low-lift pumping station, dosing and sedimentation basins, filters, a clear-water storage reservoir, new high-lift pumps, and improvements to the distribution system.

Before its construction, Muskegon drew its water supply from an intake crib in Lake Michigan about 7,000 feet off shore by a system of direct pumping and chlorination which was unsatisfactory, due to increasing contamination of the lake water.

Most of the construction of the new project is below ground. The main building has exterior walls of brick with stone trim and the sedimentation basins are under the terrace. The project was completed in June 1937 at a construction cost of $614,756 and a project cost of $656,202.
Water Filtration Plant, Milwaukee, Wisconsin

Due to increasing pollution of Lake Michigan the amount of chemicals required to make the water safe for use had become excessive. The city constructed this new plant on "made land" on the shore and it has a capacity of 200,000,000 gallons daily. It consists of a low-lift pumping station, mixing and coagulating basins, filters, a clear-water reservoir, and appurtenances. The buildings are fireproof, the exterior walls being of quarry-faced random ashlar native stone.

The project was completed in January 1938 at an estimated construction cost of $4,642,135 and a project cost of $5,130,000.
The old filtration plant at Rocky Mount consisted of a number of pressure filters which were obsolete and of insufficient capacity to supply the growing demand. The new plant has a daily capacity of 3,000,000 gallons and includes a 1,000,000-gallon elevated steel tank and a 10-inch connecting main. The filtration plant consists of four filters, reinforced-concrete coagulation basins, pumps, valves, etc. The building to house the equipment is fireproof, with brick exterior walls trimmed with stone.

The entire project was completed in December 1935 at a construction cost of $334,952 and a project cost of $356,192.
This project consists of a screen chamber at the Ohio River intake, the construction of twelve 1.6 m. g. p. d. units with space for four more, a 3,000,000-gallon equalizing reservoir in one section of the city and a 1,000,000-gallon equalizing reservoir in another section, and an extension to the existing distribution system. The illustrations are of the filtration plant which is a fireproof structure with exterior walls of brick and stone.

The project was completed in December 1937 at a construction cost of $758,787 and a project cost of $808,965.
Filtration Plant and Pumping Station, *Aberdeen, South Dakota*

The building illustrated houses the mechanical equipment for filtering and softening the water, a high and low pumping station, and a water tank in the tower. The capacity of the plant is 4,000,000 gallons per day. The building is reinforced concrete with exterior walls faced with brick and trimmed with stone. The entire project was completed in May 1935 at a construction cost of $586,441 and a project cost of $656,538.
As a result of increased pollution from mine water and untreated sewage, the cost of purifying the water supply for Fort Smith had become so excessive that the correction of this condition had become imperative. The Fort Smith waterworks district therefore undertook the construction of a large project to provide the city with a proper water supply by gravity. The items included the construction of an 80-foot earth dam, clearing a 650-acre reservoir site, construction of a filter plant with a capacity of 8,000,000 gallons per day, an equalizing reservoir and 20 miles of pipe. The illustration is of the filtration plant, which is a fireproof structure having reinforced concrete foundations, concrete floor supported on steel beams, a roof consisting of steel members supporting gypsum slabs and covered with composition roofing, and exterior walls faced with a random ashlar of stone. The project was completed in December 1936, at a construction cost of $1,583,338 and a project cost of $1,709,439.

Waterworks Improvements, Fort Smith, Arkansas
Denver City Water Supply System, *Denver, Colorado*

Five years of drought from 1931 to 1935 reduced the water in Denver's reservoir to a few months' supply and accordingly it was decided to seek a supply from the Fraser River on the western slope of the Continental Divide where the rainfall was greater than on the eastern slopes. Water is collected from Jim Creek, the Frazer River, and the two Vasquez Creeks, is diverted under the Continental Divide through the Moffat Tunnel, and collected in reservoirs northwest of Denver.

Continued on following page
Denver City Water Supply System, Denver, Colorado

Continued from preceding page

The Moffat Water Tunnel is 6.3 miles in length and passes under James Peak Mountain. At its eastern portal the water enters South Boulder Creek down which it flows a distance of 23 miles where it enters the south boulder diversion conduit which carries it 9.7 miles further to the Ralston Dam and Reservoir. A portion of the water from the south boulder diversion conduit is impounded in the Ralston Reservoir as an operating supply for the Moffat filter plant 3½ miles west of Denver. The remaining flow is discharged into Clear Creek and other streams of the eastern slopes above the storage reservoirs. Conduits conduct the water from the filtration plant to the city reservoirs and distribution system. The entire project, including all the different units, was completed in January 1938 at a construction cost of $9,015,490 and a project cost of $9,670,177.
This project consisted of the construction of an impounding reservoir on the Saline River, 40 miles from Little Rock, a 40-mile transmission line, and the filter plant illustrated on this page. The plant, constructed at an approximate cost of $225,000, has a capacity of 15,000,000 gallons per day. The filter building is a fireproof structure faced with brick laid in a diamond pattern and trimmed with stone.

The entire project was completed in February 1938 at a construction cost of $3,120,760 and a project cost of $3,477,788.
The illustration is of one of a pair of the largest reinforced-concrete elevated water tanks ever constructed. Each one has a capacity of 3,000,000 gallons and both are in the city of Sacramento.

Each tank is 146 feet in diameter and 124 feet in over-all height, and only the upper 25 feet is used to contain the water. The construction consists of an exterior fluted cylindrical concrete wall which supports the water tank with the assistance of 44 interior columns arranged in concentric rings. The tank is lined with steel which varies in thickness from \( \frac{3}{8} \) inch at the bottom to \( \frac{1}{4} \) inch at the top and which is mechanically bonded to the reinforced-concrete exterior wall. The tank floor is unlined. This construction resists earthquake shocks very well. The roof of the tank is redwood sheathing covered with asbestos roofing paper. The project, which included work on the entire water-supply system for the city, was completed in July 1937. The construction cost of the two tanks was $368,195, the total construction cost was $636,702 and the project cost was $703,554.

Municipal Water Supply

Sacramento, California
The Pulgas commemorative water temple stands at one end of the Crystal Springs Reservoir, 5 miles west of Redwood City, in San Mateo County, and is the western terminus of the Hetch Hetchy Aqueduct, which supplies water to San Francisco and its environs. It is constructed of reinforced concrete except the columns, their capitals, and the ornament, which are cast stone. It was completed in July 1938 at a project cost of $46,900.
This new reinforced-concrete reservoir replaces a privately owned and outmoded 15,000-gallon tank which had become insanitary and which was at an insufficient elevation to serve the community at a proper water pressure. The new structure is approximately 38 feet in diameter, averages 50 feet in height, and houses the reservoir in the upper 21 feet. Underneath the reservoir are booster pumps, pipe lines, and other appurtenances for the distribution of the water. It was completed during 1934 at a construction cost of $17,849 and a project cost of $17,961.
This project consisted of the concrete reservoir with a capacity of 50,000,000 gallons and the filtration plant with a capacity of 8,600,000 gallons per day from which the filtered and softened water is pumped into the distributing system of Santa Barbara. Monolithic concrete is particularly well done in California and this plant is no exception. It was completed in 1937 at a construction cost of $347,322 and a project cost of $380,613.
Reservoir and Water System, *Los Angeles, California*

This reservoir, part of the Los Angeles water-supply system, is in the Hollywood Hills and is entirely surrounded by a drainage channel 3.6 miles in length which consists of a paved roadway and a concrete retaining wall preventing any danger of pollution from surface water.

The lower illustration on the left shows the Fletcher Drive pumping station and the lower on the right is the Van Nuys construction office and meter-repair shop. Both of these buildings are reinforced concrete and are designed to resist earthquake shocks. The project, which included some other work, was completed in 1938 at a construction cost of $4,682,661 and a project cost of $5,156,778.
This building, which is strictly utilitarian and requires few openings, is designed with patterned brick walls, resting on a rusticated concrete base. The main floor is placed 9 feet below grade and the equipment of the plant consists of turbines, pumps, motors, washers, and chlorinators.

Two stations were constructed on this docket in Spokane at a total project cost of $361,136. This one was completed in February 1938 at a construction cost of $205,248 and a project cost of $218,084.
Makiki-Manoa Reservoir

and

Pumping Station

Honolulu

Territory of Hawaii

This reservoir and pumping station is only one unit of an extensive water-supply system which has been provided for the city of Honolulu to replace a totally inadequate plant. It consists of a cylindrical reinforced-concrete reservoir and a rectangular pumping station of the same construction which serve the residential section of Manoa, Honolulu. The landscaping and small pool are worthy of note particularly as the plant is in a residential area. The entire project was completed in February 1937 at a construction cost of $602,849 and a project cost of $635,325.
This plant supplies power for the Chronic Diseases Hospital and the newly constructed nurses' home. Oil is used as fuel but the provision of an overhead coal bunker makes it possible to change to coal at any time that a change becomes desirable. The structure is four stories and a basement in height with a penthouse in addition. It is fireproof and the exterior walls are faced with buff brick and trimmed with limestone. Utility tunnels connect it to the hospital buildings. It was completed in September 1938 at a construction cost of $593,241 and a project cost of $648,139.
The city of Vineland has owned and operated its electric power plant, to supply light and power to 42 square miles of city and suburban area, since 1900. Only one extension to the plant had been made since then and this project provided much-needed extra facilities. It consisted of the building illustrated on this page together with equipment which constituted much the larger part of the cost. For operating economy the waterworks pumping station is combined with the power plant. The old plant appears in the background with the new building attached to it in front. The project was completed in July 1937 at a construction cost of $672,107 and a project cost of $731,640.
Power Plant
Southern Indiana Hospital for the Insane
Evansville, Indiana

This structure is the major part of a P. W. A. docket which also included an addition to the hospital kitchen and new kitchen equipment. It contains a boiler room, 43 by 84 feet and 56 feet high, and a pump room, 26 by 84 feet and 35 feet high. Some of the equipment from the old power plant was reused. Three new 420 hp. bent-tube boilers and three forced-draft traveling grate stokers of the same capacity had been acquired and these were used in the new building. In addition, boiler-feed equipment, water softeners, soot cleaners, feed regulators, piping instruments, coal-handling equipment, and accessories were included in the equipment contracts.

The building has a braced steel frame, reinforced concrete floors, a precast concrete flat-deck slab roof, and exterior walls of brick trimmed with stone.

The entire project was completed in June 1937 at a construction cost of $169,727 and a project cost of $180,264.
Hydroelectric Power Plant

*Allegheny, Michigan*

The Allegan power project involved the completion of a dam on the Kalamazoo River, the construction of a powerhouse at the dam, the installation of 2 vertical water-wheel generators of a total capacity of 1,500 kva with space provided for a third generator of 1,500 kva, the construction of a 6-mile power transmission line to the city, and the construction of a complete distribution system of poles and wires together with service connections and meters within the city to serve approximately 1,000 customers. The project was roughly parallel to the privately owned utility which formerly served the city. The dam had been begun several years earlier, but litigation and lack of funds prevented its completion until P. W. A. assistance was secured. The whole project had received popular approval in the city.

The illustrations show the exterior of the powerhouse with its brick walls, terra-cotta trim, and concrete foundations, and the interior of the building with the two generators.

The project was completed in June 1937. Exclusive of $285,622 which had been previously expended, the construction cost was $363,474, and the project cost $470,150.
In September 1935 the city of Memphis applied to the P. W. A. for a loan and grant of $10,000,000 with which to build a complete electric distribution system to compete with the existing private utility, the Memphis Power & Light Co. It was proposed to purchase power from the Tennessee Valley Authority and to serve the city by 154 kv transmission lines from the Pickwick Landing Dam. Subsequently, the city requested a grant only as its bonds were sold privately. On October 23, 1936, the P. W. A. approved an allotment of $3,092,000 as a grant, based upon an estimated cost of $6,872,000, with which to build a distribution system to serve approximately half the number of customers. Construction was delayed by litigation until the spring of 1938. Early in 1939 an agreement was reached whereby the city paid the Memphis Power & Light Co. $13,500,000 for the existing distribution system, and the city then amended its application to the P. W. A. and obtained a grant of $9,420,574 to cover the cost of a new distribution system and its interconnection with the old system. When the entire system is completed the city will receive power from the Tennessee Valley Authority over 154 kv lines into substation A from where a 110-kv ring will feed the city through substation B. The estimated construction cost of substation A was $746,376 and its project cost $876,749. For substation B these estimated costs were $419,500 and $492,330. It is estimated that the project will be completed in June 1940. Illustrations are of Substation A.
Powerhouse, Loup River Public Power District, *Columbus, Nebraska*

This powerhouse is one unit of an extensive project which consists of diversion of water from the Loup River, through a desilting basin and a canal, to the Monroe powerhouse, thence to a reservoir with 4,000 acre-feet of storage from which it is released as needed to the Columbus powerhouse, after which it proceeds to the Platte River.

The Columbus powerhouse contains three vertical-shaft, 18,000 hp. Francis turbines direct-connected to 14,000 kva rated generators. There is an operator's room at one end of the structure and equipment for the control of both the Monroe and Columbus plants.

The building is constructed entirely of reinforced concrete except the roof, which consists of steel trusses and pur- lins. The generator room has a clear height of 115 feet. The Columbus plant was completed in July 1938 at an approximate construction cost of $1,842,434 and a project cost of $2,334,657. The estimated cost of the entire Loup River project is $12,641,929.
Powerhouse and Tailrace Bridge, *North Platte, Nebraska*

This powerhouse is one unit of a large project constructed for the Platte Valley Public Power and Irrigation District. The upper illustration shows the powerhouse with the surge tank in the background, and the lower illustration is of the bridge across the tailrace.

The powerhouse contains two 18,000 h. p. generators coupled to turbines with facilities for the future installation of two similar units. The structure is reinforced concrete throughout and has a clear height above the generator floor of 44 feet. There is a control room in the rear. The bridge is a rigid frame type of three spans, with a length of 146 feet and a roadway 24 feet in width. The project was completed in April 1939 at a construction cost of $771,642 and a project cost of $950,506. The entire project cost was $10,864,411.
At a special election, Cushing rejected an ordinance proposing a 25-year extension of the franchise of a privately owned power plant and then proceeded to erect this municipal power plant and a distribution system. The building illustrated contains a large generator room, offices, and a locker room. It is fireproof with exterior walls of brick, and concrete floor and roof slabs. The project was completed in March 1936 at a construction cost of $341,709 and a project cost of $360,225.
Electrical Substation and Fire Alarm Headquarters, Alameda, California

The illustration shows the electrical substation with the fire-alarm headquarters in the background. Both structures occupy one plot of ground thus making for economy of maintenance and operation. Housed in the substation are banks of 4,000 to 11,000 volt transformers, high-velocity blowers and cooling radiators, voltage regulators, master-metering panels, and cubicles for incoming and outgoing feeders. The fire-alarm headquarters provides a junction point for all fire-alarm circuits of the city.

Both structures are fireproof, of steel and reinforced concrete, with the type of exterior concrete finish that seems to be outstanding in California. The project was completed in 1936, at a construction cost of $201,996 and a project cost of $217,671.
This project consists of a dam, a powerhouse, limited alterations to existing work, and three new generating units. The system as constructed is almost entirely automatic in its operation, with adjustment wheels to take care of varying heads, and requires only periodic supervision and adjustment. The new plant is in the building illustrated on this page. Its foundation, floors, and structural frame are reinforced concrete, the exterior walls are light-colored brick with darker brick to bring out the pattern, and the roof is covered with tile. It was completed in March 1937 at a construction cost of $803,683 and a project cost of $822,756 for all the work.
The principal purpose of this project was the control of floods on the Walhonding River and its tributaries. The most important units of the plan are the intake towers and operating houses on Wills Creek near Maysville (upper illustration) and at the Mohawk Dam on the Walhonding River near Coshocton.

The dams in both cases are earth, surfaced with rock and surmounted by roadways, while the intake towers are reinforced concrete. Within the substructures are six gate-controlled outlets each 8 by 17 feet, leading to twin tunnels through the dam abutment. The superstructures contain machinery and equipment for the control gate operation. One is 88 by 35 feet and has a ceiling height of 36 feet; the other is 74 by 29 feet with a ceiling height of 27 feet. The dams and towers were designed by personnel of the Corps of Engineers of the War Department.

The entire project was completed in October 1937. The allotment for the project was $27,190,000, the cost of the Wills Creek tower was $24,800, and that of the Mohawk Dam $43,700.
The Upper Mississippi navigation project is one element of the system of inland waterway improvements to link the agricultural Middle West with the industrial East, and the Great Lakes with the Gulf of Mexico.

Dam No. 5-A is typical of several under construction or completed which will maintain water levels during periods of low-stream flow at a minimum depth of 9 feet throughout the length of the Mississippi River from Minneapolis to the mouth of the Ohio River. The dam is approximately 580 feet in length and each gate is 80 feet long by 20 feet high. The maximum height from foundation to service bridge is 62 feet. The gates are steel and the electrically driven operating machinery is housed in the structures on top of the piers.

The control-gate section occupies the entire width of the low-water channel and sections of fixed dam extend on either side of it to the bluffs. An overflow spillway section is provided to aid the passage of flood water. A lock section is provided at one of the river banks to accommodate navigation. The entire dam, with the exception of the steel Tainter gates, is constructed of reinforced concrete and was designed by the Corps of Engineers of the War Department with the advice of a consulting architect.

The project was completed in August 1936 and the P. W. A. allotment for Dam Number 5-A was $2,406,000 which covered its entire cost.
Fort Peck Dam, *Fort Peck, Montana*

The Fort Peck Dam on the Missouri River in northeastern Montana, approximately 20 miles southeast of Glasgow and near the town of Fort Peck, is being constructed by the Army Engineers under the supervision of the District Engineer.

The primary purpose of the project is to improve navigation on the river below Sioux City, Iowa, to its junction with the Mississippi, a distance of 764 miles. Secondary and resulting purposes are flood control, prevention of bank erosion, hydroelectric power, and irrigation. In addition, the project was undertaken at a time when it was imperative to provide work for the unemployed and 47,000,000 man-hours of work were expended on the project up to July 1, 1938.

The maximum height of the dam will be 250.5 feet and its length between bluffs will be about 2 miles with an additional section about 2 miles in length extending along the west bank of the river. The maximum width of the base is 3,150 feet and the top, on which there will be an asphalt-paved road, will be 50 feet. The dam will contain 109,000,000 cubic yards of earth, 4,000,000 cubic yards of gravel, and more than 1,000,000 cubic yards of rock. The reservoir created will have a surface area of 245,000 acres, a length of 189 miles, a width of 16 miles, and a shore line 1,600 miles in length.

Construction of the earth dam is being carried on by the hydraulic-fill method, employing four electrically-operated dredging units. Essentially it consists of two pervious sand shells with a dense, relatively impervious, "core" of fine material between them. Up to July 1, 1938, 95,500,000 yards of earth had been placed, and it is estimated that the entire project should be completed by the end of 1939.

The spillway of the Fort Peck Dam has been constructed on an arm of the reservoir, about 3 miles east of the earth dam. It is designed to discharge a maximum of 250,000 cubic feet of water per second, and this capacity, together with tunnels built in connection with the earth dam, will protect the dam against a maximum estimated flood.

The spillway consists of a wide approach channel, a concrete gate structure mounting 16 vertical lift gates each 25 feet high and 40 feet wide, a concrete-lined channel a mile in length at the end of which is a concrete cut-off structure, and an unlined stilling section from which the discharged water will return to the Missouri River at a point approximately 8 miles below the dam.

The spillway construction involved the excavation of 14,000,000 yards of earth and shale and the placing of 560,000 cubic yards of concrete and 55,000,000 pounds of steel. The estimated cost of the entire project will exceed $100,000,000. The spillway and gate structure were completed in September 1938 at a cost of approximately $7,468,000.

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Fort Peck Dam, *Fort Peck, Montana*

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The Buchanan Dam is a large flood-control, water-conservation, and power project. It was originally a power project of a utility company but was taken over by the Lower Colorado River Authority in 1936 after the utility company had abandoned it. The total length of the dam is 8,400 feet and its height is 143 feet from bed to parapet. It develops a reservoir of 23,500 acres.

Continued on following page
The power plant has a capacity of 22,000 kilowatts. The project was completed in November 1938 at an estimated construction cost of $7,093,098 and project cost of $8,298,957. Included in this cost is $1,654,061 paid for construction work done before the P. W. A. allotment was made.

The Austin Dam project consists of the rebuilding and restoration of a dam originally constructed in 1893 which had been partly destroyed by floods and eventually abandoned.

The construction consists of a curtain wall on the upstream side of the dam to prevent percolation of water under it, to increase the mass of the dam by adding concrete to the old stone dam, to repair the foundation of the toe of the dam, and to construct and equip a new powerhouse. The project will probably be completed in December 1940 at an estimated construction cost of $3,166,032 and a project cost of $3,415,069.
Roller Gates at Head Works, Imperial Dam, All-American Canal Project

*Colorado River, Arizona and California*

The recently completed Imperial Dam and desilting works, a unit of the All-American Canal project, is approximately 250 miles downstream from the Boulder Dam on the Colorado River. The primary purpose for the dam is the diversion of approximately three-fourths of the water released from the Boulder Dam into the new All-American Canal. At the head of the canal are a series of massive concrete gate towers, between which are the steel roller gates illustrated on this page.

The roller gates are mechanically operated from the towers to permit the passage of water which is not to be diverted into the canal, so that it may be used for irrigation purposes downstream in the vicinity of Yuma, Arizona. The operating towers are connected by an overhead bridge extending the entire length of the dam.

The All-American Canal is 200 feet wide with a water depth of 21 feet. It will be used to convey water a distance of 100 miles to irrigate approximately 1,000,000 acres of land in the Imperial and Coachella Valleys. At some points the channel cut will be 100 feet deep. Several power drops are being installed on the canal as there is a difference of level between the head and the Imperial Valley of 450 feet.

The estimate of cost of the project is $35,000,000 of which $10,000,000 was allotted by the W. P. A. The Imperial Dam and desilting works were designed in the Denver office of the Bureau of Reclamation and were completed in July 1938.
Willow Creek Dam and Reservoir, Chino Valley, *Prescott, Arizona*

The upper illustration shows the Willow Creek Dam where the impounded water forms the reservoir, and the lower illustration is of the Willow Creek Dam spillway. The dam is constructed of concrete, 6 feet thick at the base, 2½ feet thick at the top, 85 feet in height, and is built on a radius of 102 feet. The reservoir has a capacity of 8,000 acre-feet. The project included, as well, a small diversion dam on Granite Creek with a diversion canal to Willow Creek and repairs to the main canal. It was completed in April 1939 at a construction cost of $101,165 and a project cost of $127,752.
This project, carried out by the Bureau of Reclamation of the Department of the Interior, has for its purpose the conservation of important water resources in the Southwest and the creation of power supplies for large areas of country. It is estimated that the construction of this dam will make it possible to double the population of the area served by the Colorado River by opening new territory to irrigation and by providing a continuous water supply for areas now under cultivation. The illustration above is a view of the dam looking upstream and gives some idea of its enormous size, especially if it is realized that the powerhouses at the base of the dam are 245 feet high or the equivalent of a 20-story office building. The dam itself has a height of 726.4 feet and its width at the crest is 1,282 feet. The smaller illustration shows two of the elevator towers emerging from the face of the dam at the top.

Continued on following page
Boulder Canyon Project

Boulder Dam—Intakes and Spillway

Colorado River

Arizona and Nevada

Continued from preceding page

The illustration on the left shows two of the four huge intake towers located above the dam through which water is conducted to the turbines which provide power for the electric generators in the powerhouse at the base of the dam on the downstream side. The entire height of these towers is shown, as the picture was taken before the rise of the water in the reservoir. In the other illustration their tops may be seen above the water of the reservoir. Beyond the tops of the intake towers may be seen the spillway on the Nevada side of the reservoir. From this spillway the overflow water is conducted through massive concrete channels and tunnels, bored through solid rock, to the river below the dam. The reservoir, known as Lake Mead, extends 115 miles up the Colorado River through Boulder Canyon, Virgin Canyon, Iceberg Canyon, and Travertine Canyon, with a width varying from several hundred feet to a maximum of 8 miles. It has a water surface of 146,500 acres at maximum capacity and this capacity is 9,500,000 acre-feet. It is estimated that in 50 years silting will reduce this.

Continued on following page
Boulder Canyon Project, Boulder Dam—Spillway Channel and Powerhouses

*Colorado River, Arizona and Nevada*

Continued from preceding page

The larger illustration on this page shows the extent of the powerhouse, at the base of the dam, which is designed for an ultimate installation of 15 main generating units of 115,000 horsepower capacity each, making a total generating capacity of 1,725,000 horsepower. The initial installation in the powerhouse is composed of four 115,000-horsepower units and one 55,000-horsepower unit. The powerhouse is a U-shaped structure 1,650 feet in length. Each wing, housing the power-plant equipment, is 650 feet long and is 150 feet above the normal tailrace water surface. The smaller illustration shows one of the concrete spillway channels which conducts overflow water from the reservoir to the tunnels. The larger illustration shows water discharging from one of these tunnels.

Continued on following page
Boulder Canyon Project
Boulder Dam—Flagstaff and Powerhouse

Colorado River, Arizona and Nevada

Continued from preceding page

The larger illustration shows the two huge bronze "Figures of the Republic" on their black granite bases flanking the 125-foot flagpole at Boulder Dam. The inscription between them gives due honor to the men who conceived and carried out this great project. The smaller illustration shows a group of the circuit breakers and transformers along the exterior of the Nevada powerhouse. The deck alongside is provided with railroad tracks. Power is now being furnished to Arizona, Nevada, and California and the revenue will repay the entire cost of the dam with interest in 50 years. The project is now substantially completed at an expenditure of nearly $140,000,000 toward which amount $38,000,000 was contributed by the P. W. A.
The Alcova Dam is designed for storage and diversion of the river flow into an irrigation canal which irrigates the land around Caspar, Wyoming. The dam is earth fill with a rock surface on the reservoir side. Its height above the foundation is 265 feet, its base thickness 1,250 feet, its crest thickness 40 feet, and the crest length 763 feet. The reservoir formed by the dam has an area of 2,200 acres. The gate structure contains three gates, each 26 by 40 feet, and electrically operated. The project was completed in July 1938 at a construction cost of $2,754,698 and a project cost of $2,779,199. The work has been done under the Bureau of Reclamation.
In 1923, the Public Utilities Commission of the city and county of San Francisco expended $8,300,000 on the construction of the O'Shaughnessy Dam, which was a gravity-type arched dam, rising to a height of 226 feet above the bed of the stream.

Between 1923 and 1936, due to increased population and water consumption in San Francisco and its environs, a reservoir of greater magnitude became necessary and this project was undertaken with the aid of the P. W. A. It consisted of increasing the height of the dam from its original 226 feet to a height of 312 feet, an increase of 86 feet, and in doing this the volume of concrete was practically doubled. From the greatly enlarged reservoir, three 48-inch subterranean aqueducts carry approximately 40,000,000 gallons of water per day to San Francisco.

The enlargement of this dam was completed in 1938 at a construction cost of $3,623,634 and a project cost of $4,279,049.
Parker Dam on the Colorado River
for the Metropolitan Water District

Near Parker, Arizona

The metropolitan water district includes the cities of Los Angeles, Pasadena, San Marino, Santa Ana, Santa Monica, Torrance, Long Beach, Glendale, Fullerton, Compton, Burbank, Beverly Hills, and Anaheim, with a total population of approximately 2,000,000. The city of Los Angeles obtained water from local sources and also had a supply from the Owens River 250 miles to the north, but the supply was insufficient and it became necessary to seek an additional source.

The Colorado River aqueduct supplies water to the 13 cities of the metropolitan water district in sufficient amount, not only for their present needs, but also for their future growth, and for development of adjacent areas. The main features of this project are as follows: Water released from the Boulder Dam into the Colorado River is diverted at a point on the California side of the river near Parker, Arizona, and is conducted through the main aqueduct to a terminal south of the city of Riverside, at which point a storage basin has been provided to control the flow into the distributing lines for delivery to the 13 cities.

The diversion of the water from the Colorado River is made by the Parker Dam which raises the water level in the river 72 feet to the first pumping plant. The main aqueduct consists of 91 miles of tunnel, 55 miles of cut and cover conduit, 65 miles of lined canal, and 27 miles of various kinds of pressure pipe, making a total of 238 miles of aqueduct. The total pump lift, after diversion is completed by the Parker Dam, is 1,614 feet.

The Parker Dam is a reinforced-concrete structure provided with five Stoney gates each 50 feet square, which are operated vertically from the structure above the crest of the dam. The project was completed in December 1936 at a project cost of $6,825,000. Although funds were allotted as Non-federal, the project was constructed under the Bureau of Reclamation of the Department of the Interior.

Continued on following page
Parker Dam on the Colorado River for the Metropolitan Water District

Near Parker, Arizona

Continued from preceding page
Bonneville Dam Project, Columbia River, Washington and Oregon

The Bonneville Dam project, carried out by the Corps of Engineers of the War Department, is located on the Columbia River, about 40 miles east of Portland, Oregon, and is one of the principal features of a plan for the improvement of the river above tidewater.

At the site chosen, the Columbia River flows westward in two channels separated by Bradford Island. The dam is in the north, or main, channel and the powerhouse and navigation lock in the south channel.

The dam has a concrete gravity base above which rise reinforced concrete piers 10 feet wide, spaced to provide 18 gates each 50 feet wide, making the total length of the dam proper 1,090 feet. The width at the base is 200 feet and the height above the lowest foundation is 170 feet. The dam is surmounted by a service roadway. The spillway is designed to pass a flood of 1,600,000 second-feet. The steel gates are structural steel riveted construction with roller bearings and are operated by either of two 350-ton gantry cranes which travel on top of the dam.

The powerhouse, situated near the lower end of the island, is constructed of reinforced concrete and houses six hydro-electric generating units of 43,200 kilowatts each and a 4,000-kilowatt service unit.

The lock in the south channel is designed to accommodate ocean-going vessels and is 76 feet wide by 500 feet long and has a depth of 26 feet over the lower sill at low water. The vertical lift at low water is 66 feet which is the greatest of any lock yet built, and the lift at extreme high water is about 30 feet. The mitering lock gates are structural steel faced with plates. The lower gate is 102 feet high, each leaf weighing 525 tons, and the upper gate is 45 feet high. The gate operating the electrically driven machinery is in the lock wall.

The entire project, which is, however, only one element in the improvement of the river, was completed in May 1938 at a cost of approximately $52,000,000 of which the P. W. A. provided $32,200,000.

Continued on following page
Bonneville Dam Project, Columbia River, Washington and Oregon

Continued on following page
Bonneville Dam Project, Fish Ladder and Elevator

*Columbia River, Washington and Oregon*

One of the problems connected with the construction of the Bonneville Dam was how to permit the salmon to gain access to their spawning grounds far upstream from the dam. The Bureau of Fisheries of the Department of Commerce cooperated with the Corps of Engineers of the War Department and designed the fish ladders and fish elevators which are illustrated on this page and which were built at the same time as the dam.

The ladders consist of a series of pools each one foot above the other down which the water flows and the salmon and trout have no difficulty in passing to the top. The fish elevator operates on the same principle as the lock. Both have proved highly successful. The fishways were a part of the Bonneville Dam project which was financed in part by the P. W. A.
This Coast Guard air station is on the southern end of Winter Island, near Salem. The project provided a hangar, a seaplane ramp, a sea wall, the radio building, and the fueling system. The hangar is 100 feet square and contains, besides the storage space for planes, machine and work shops. It is built of brick and hollow tile with a stucco finish and has a steel-truss roof. The project was completed in October 1935 and the P. W. A. allotment was $142,744.28.
The State airport at Hillsgrove is one of the most up-to-date in the country. The development included 2 P. W. A. projects, the first of which was improvement of the flying field and the second the erection of the hangar. The work on the airfield consisted of the construction of 3 intersecting runways with a total length of 3,000 feet and widths of 150 feet each, together with a drainage system. The hangar provides storage for 100 planes and includes also an office-

building section, 50 by 80 feet 2 stories and a basement in height, and secondary hangars with repair shops. The buildings are fireproof and are faced with brick. Work on the airfield was completed in August 1936 at a construction cost of $477,566 and a project cost of $498,180. The hangar was completed in June 1939 at a construction cost of $304,903 and a project cost of $331,540.
Seaplane Terminal, Municipal Airport, *Baltimore, Maryland*

This new hangar at the Baltimore Airport is attached to a brick building which contains ticket offices, baggage rooms, offices for the operation of the air lines, maintenance, meteorology, and United States Government offices.

The foundation for the hangar consists of piles driven within the diameter of large steel cylinders, the space between the piles being filled with sand and gravel to resist lateral movement of the soft fill. Four steel columns, each 5 feet square, support four main roof trusses which are cantilevered to give a clear space around all the walls.

The exterior piers and the band at the top of the building are covered with sheet-steel siding. Two of the walls consist of rolling doors which have a vertical clearance of 35 feet. The roof is suspended from the bottom chords of the trusses to protect them from fire inside the building, and rainwater is disposed of through downspouts inside the columns. The interior finish of the hangar is galvanized sheet steel, aluminum-painted structural steel, and painted insulation board. The project was completed in March 1939. The hangar cost approximately $252,389 and the total project cost of the airport was $2,825,950.
The National Advisory Committee for Aeronautics constructed this 8-foot high-speed wind tunnel for test purposes. It is the largest structure of this kind in the world and is built of reinforced concrete throughout except that the air passages are lined with steel plates.

Large-scale airplane models and full-sized airplane parts are investigated for the effects of air velocities varying from 85 miles per hour up to the speed of sound. The tunnel is equipped with an 8,000-horsepower motor which drives an 18-blade propeller 16 feet in diameter.

The working space in the dome is at a negative pressure, while tests are being made, to simulate an altitude of 12,000 feet at full speed. To withstand these pressures, when operating at high speed, the test chamber is dome-shaped and the operating personnel enter and leave through air locks. The building was designed and constructed under the supervision of members of the Committee staff at a cost of $474,000 and it was completed in March 1936.

Other facilities at Langley Field, available to the Committee, are a 24-inch wind tunnel capable of producing wind velocities of 750 m. p. h., a free-spinning wind tunnel, and an engine research laboratory, all of which were constructed with P. W. A. funds at an approximate cost of $200,000.
One of the units constructed by the Navy Department at Corry Field was the administration building shown in the upper illustration. It is a two-story structure and contains offices, employment rooms, and an infirmary on the first floor, and offices and instruction rooms on the second floor. The control tower for the airfield is covered with aluminum. The building is fireproof and is faced with brick trimmed with stone. It was completed in December 1934 at a construction cost of $62,760 and a project cost of $70,000.

The hangar is one of four similar units constructed on a line with the administration building. Each hangar has a storage area of 18,000 square feet and also an annex for shops, offices, and locker rooms. The walls are brick trimmed with stone, and the floors and aprons are concrete. The four hangers were completed in June 1934 at a construction cost of $318,802 and a project cost of $327,000.
Administration Building

Municipal Airport

*Fort Worth, Texas*

The increase in air travel through Fort Worth had increased to such an extent that the facilities at the airport had to be increased, and this administration building was constructed with the aid of the P.W.A.

On the ground floor are a large waiting room two stories in height, ticket offices, a manager's office, a restaurant, baggage room, and post-office station. The second floor provides offices for the various air lines using the field. The building has an area of 20,100 square feet. The exterior walls are cor- dova cream limestone backed with brick, and the observation tower is of steel covered with aluminium. The waiting room contains a large mural showing air lines and the principal airports throughout the world. The project was completed in 1937 at a construction cost of $130,079 and a project cost of $138,052.
The larger illustration shows one of the units of a double airplane hangar, representative of several which were constructed by the Quartermaster Corps of the Army at Hamilton Field. Each double hangar consists of two main units each 121 by 240 feet, a connecting bay 81 by 66 feet, and a one-story annex on either side, each 20 by 218 feet. The foundations of the buildings are composite piles, the frames structural steel, walls and floors concrete, and the roofs over the main units asbestos protected steel. The project was completed in November 1934 at a construction cost of $1,008,804 and a project cost of $1,022,000.
Airplane Hangars
Treasure Island, San Francisco, California

These twin hangars were constructed for permanent use to be part of a future flying field but were made available for temporary use by the exposition. Each structure has mechanically operated doors 200 feet wide and 40 feet high with a possible increase in height to 65 feet at the centers. A one-story shop wing 40 feet wide extends along one side of each building. The two structures were completed in June 1938 at a total cost for both of $709,239.
Felts Field is in the Spokane area and provides training facilities for the Forty-first Division of Aviation. This hangar is 102 by 201 feet with exterior walls of brick. The roof is supported by steel trusses running the short way which are in turn supported by a master truss and steel columns. This diverts the loads to the corners and makes possible an unobstructed opening toward the field which is closed by glazed-steel hangar doors that fold into pockets at the sides. The floors are concrete, and a concrete balcony at each side provides space for storage, locker rooms, work and parachute-repair rooms. The ceiling is covered with a fireproof insulating material.

The project was completed in July 1934 at a construction cost of $98,181 and a project cost of $102,715.
Deer Island Bridge, *Sedgwick, Maine*

This toll bridge crosses Eggunmeggin Reach and connects Deer Isle with the mainland. It is about 25 miles southeast of Belfast by road and about the same distance southwest of Ellsworth. It replaces a ferry communication which was antiquated and dangerous in stormy weather.

The bridge is of the high-level suspension type with a main span of 1,080 feet and two side spans of 484 feet each. Its total length, exclusive of the fill approaches, is 2,509 feet or nearly half a mile.

The roadway is 20 feet wide and attains an elevation of 98.7 feet above mean high water where it crosses the 200-foot channel. The roadway has a 15-inch timber emergency walk supported on the steel roadway curb. Work was begun on the substructure in January 1937. The project was completed in August 1939 at an estimated construction cost of $834,668 and a project cost of $970,208.
Dover Point Bridge

Dover Point, New Hampshire

This new toll bridge carries U. S. Route 4 over the Piscataqua River between Dover and Portsmouth and replaces an old wooden bridge which had become inadequate for modern traffic.

The new steel bridge is 1,528 feet long and is of the multiple-span, continuous-truss type. The channel span is 275 feet long and has a clearance of 55 feet at mean low tide. The bridge has a 24-foot roadway and two sidewalks. The masonry pier foundations reach a depth of 60 feet below mean low tide. Due to tidal currents that sometimes attain a velocity of 15 m. p. h., the two spans adjacent to the central span had to be erected on barges and floated into position at high tide.

The project was completed in July 1935 at a construction cost of $543,680 and a project cost of $735,841.
MacGregor Bridge
Manchester, New Hampshire

This new high-level bridge over the Merrimac River replaced a two-level iron bridge built in 1880, which had been largely destroyed by the flood of March 1936. Raising the grade increased the length of the bridge by about 500 feet but made possible grade separations at several streets of the town.

The bridge and its approaches are approximately 2,500 feet long and the main channel span is a steel arch structure about 444 feet in length. The roadway is a self-cleaning type subway-grating floor which eliminates the expense of snow removal. A three-lane traffic way and two sidewalks are provided. The project was completed in May 1937 at a construction cost of $451,186 and a project cost of $591,227.
Bourne Bridge, Cape Cod Canal, near Bourne, Massachusetts

This P. W. A. allotment of $6,138,000 provided for the construction of two similar bridges, dredging and widening the canal, and providing a mooring basin.

The Bourne Bridge was designed and erected by the Corps of Engineers of the War Department and was awarded a tablet for its beauty. It is located near the Aptucxet trading post which has been restored and which was the first trading post of the Plymouth Colony.

The substructure of the bridge consists of two main channel piers of concrete faced with granite, four approach span concrete piers, and two concrete abutments. The main channel span is 616 feet and the approach spans vary from 208 to 396 feet. The top of the steel arch is 270 feet above mean canal level. The roadway is 40 feet wide with a 6-foot sidewalk, and the vertical clearance is 135 feet above mean water level.
The old bridge across the Charles River at this point had become unsafe. This new bridge is a single span of 105 feet and consists of a three-hinged steel arch encased in concrete supporting a 40-foot roadway and two 6-foot sidewalks. The arch is composed of seven structural-steel, spandrel-braced, three-hinged arched ribs spaced 8 feet 4 inches on centers except the outside ribs which are spaced 9 feet 2 inches from the typical ribs. The abutments are mass concrete enclosing the old stone abutments. A center pier from the old bridge was removed. The project was completed in September 1935 at a construction cost of $45,586 and a total project cost of $50,131.
Watershops Pond Bridge, Crosstown Boulevard, Springfield, Massachusetts

This bridge is part of a street construction program undertaken to allow traffic passing through the city to bypass the congested business area. The project consisted of the construction of approximately 11,300 feet of highway connecting Roosevelt Avenue at one end with Houghton Avenue at the other, the construction of a rigid frame bridge at State Street with ramps up to State Street, and the construction of the Watershops Pond Bridge illustrated on this page.

This bridge has steel girders and concrete spans with hung arches and stone facing on concrete piers and abutments resting on pile foundations. The total length is 180 feet, the roadway is 40 feet wide and there are two 8-foot sidewalks. The project was completed in December 1937 at a construction cost of $189,574 and a project cost of $207,889.
The Triborough Bridge was constructed to facilitate traffic between the boroughs of Queens, the Bronx, and Manhattan. It consists of a suspension bridge over the East River at Hell Gate, a viaduct leading across Little Hell Gate and Randalls Island to a traffic diversion center, a viaduct and a lift bridge from this point to Manhattan, and a viaduct and bridges from the same point across the Bronx Kills to East 134th Street in the Bronx.

Continued on following page
The over-all length of the bridge from the Queens entrance to the Bronx is 13,560 feet and from the Manhattan entrance at 125th Street to the traffic diversion center is 4,150 feet or a total length of 3.35 miles. The main suspension span is 1,380 feet between centers of towers, and the clearance under the bridge is 135 feet at high water. The height of the towers is 335 feet above high water, and the length of each side span is approximately 671 feet. The two roadways on the bridge are each 36 feet wide with a dividing curb in the center and the bridge itself is 100 feet wide.

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The aerial photograph shows the traffic diversion center on Randalls Island which consists of ramps and loops and provides uninterrupted traffic to and from all three boroughs in all directions. It also permits access to and from Randalls Island.

The Bronx Kills section consists of masonry approaches and six truss spans. The ramp rises over 133d Street with a grade of 3.8 percent and the bridge over the Harlem River railroad yards consists of one span of 167 feet, three spans of 276 feet each, and one span of 116 feet. A long-span bridge across the Bronx Kills completes this section, with a clearance above high water of 50 feet. Provisions have been made so that in the future this span may be changed to a lift bridge with a clearance of 130 feet above high water. The distance from East 134th Street to the traffic diversion center is about a half mile.

Continued on following page
The lift bridge over the Harlem River on the Manhattan section is the largest bridge of the kind in the world. The distance from center to center of towers is 320 feet. When lowered, the span has a clearance of 55 feet above high water and when raised 135 feet. It is 54 feet wide between curbs, with sidewalks on each side. The span west of the lift bridge is 182 feet from center to center of piers and the span east of it is 271 feet.

The Triborough Bridge was built and is operated by the Triborough Bridge Authority. It is estimated that after 21 years 20,000,000 vehicles will cross the structure annually. The first contract was awarded on December 7, 1933. The bridge was opened for traffic on July 11, 1936, and was entirely completed in September 1937. The approximate construction cost of the bridges and viaducts, not including the approaches, was $30,895,479. The city had spent $5,380,279 on preliminary work before the P. W. A. allotment. The total estimated project cost was $49,727,413.
The Lincoln Tunnel, formerly identified as the Mid-Town Hudson Tunnel, is the second under-water highway between New York and New Jersey. This tunnel, in conjunction with a proposed vehicular underpass in Manhattan Island and with the Queens Mid-Town Vehicular Tunnel now under construction under the East River, will afford a continuous highway link between the highway system of New Jersey and the highway system of Long Island. Construction of the first operating unit began under Project 228 (N. Y.) under which docket approximately $47,000,000 was expended on the tunnel, the New Jersey plaza and approaches, and appurtenant structures and equipment.

The completion of the tunnel was carried out under Project N. Y. 1629 and supplemented by work done under contracts negotiated by the owner not under P. W. A. supervision. This completion involves an estimated expenditure of $14,378,100 under the P. W. A. program and an expenditure of $12,304,550 under other supervision. Another $12,354,000 in contracts presently deferred were contemplated in the original estimated cost of the project.

The illustrations on this page show the New York entrance to the tunnel, the interior of the tunnel, and one of the three ventilating buildings constructed. The ventilating equipment will afford change of air every 1½ minutes.

Continued on following page
Lincoln Tunnel Under Hudson River, New York, N. Y., and Union City, N. J.

Continued from preceding page

The illustrations on this page show the New Jersey entrance and a perspective of the roadways, underpass, and bridges leading to that entrance.

The distance between tunnel portals is 8,215 feet and the total length of the entire project is 25,000 feet (4.87 miles). The roadway in the tube is 21\(\frac{1}{2}\) feet wide and its maximum depth below mean high water is 91 feet 3\(\frac{1}{2}\) inches.

The work under Project N. Y. 1629 included the purchase of land for, and the construction of, the New York plaza and approaches to the tube, the completion of the tube itself, equipment, the construction of additional buildings, and highway extensions. The entire project as originally planned involved an estimated expenditure of $83,235,550.
Allegheny County Bridges, *Vicinity of Pittsburgh, Pennsylvania*

The Pittsburgh-Homestead high-level bridge, which spans the Monongahela River, replaces the obsolete Brown’s highway bridge and eliminates two railroad grade crossings and a circuitous approach. The total length of the bridge and its approaches is 4,200 feet and the bridge itself is approximately 3,100 feet long. The main river spans consist of four Wichert continuous steel trusses, each of the two central spans being 533.3 feet in length and the two end spans 291 feet each. The approach spans in Homestead consist of seven girder spans and six Wichert continuous truss spans with a total length of 1,450 feet.

The project was completed in August 1939 at a construction cost of $1,933,145 and a project cost of $2,765,509.

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Allegheny County Bridges, *Vicinity of Pittsburgh, Pennsylvania*

Continued from preceding page

The Highland Park Highway Bridge, illustrated at the top of this page, crosses the Allegheny River, replaces a bridge built in 1902, and eliminates four railroad grade crossings. The main spans consist of a steel-deck cantilever structure with north and south anchor-arm spans 162.5 feet each and five main spans 278 feet each. Six deck-plate girder spans over the railway line have a total length of 585.51 feet. The project was completed in August 1939 at a construction cost of $2,314,205 and a project cost of $2,554,180.

The Jerome Street Bridge replaces two narrow steel bridges erected in 1890 and crosses the Youghiogheny River to McKeesport. It was completed in August 1939 at a construction cost of $575,033 and a project cost of $783,124.
This new bridge is reinforced concrete and has a span of 185 feet, abutments 35 feet thick at the base and 15 feet thick at the top, and approaches each 55 feet in length. The main span consists of two segmental arch rings with pierced spandrel panels. The roadway is 36 feet wide and there is a 6-foot walk on each side. The illustration gives a picture of the advance made in masonry bridge work as between the early nineteenth and twentieth centuries. The project was completed in December 1936 at a construction cost of $143,160 and a project cost of $158,074.
Hilton Parkway Bridges, *Baltimore, Maryland*

The valley of Gwynns Falls contains a small stream which is a tributary of the Patapsco River, and north and south through traffic in West Baltimore was barred by this valley. A new parkway, including two bridges, was opened for use in November 1938 and eliminated this barrier.

The larger bridge has three segmental spans each 90 feet in length and two end spans of 60 feet each. It is constructed of reinforced concrete and, with the exception of the arch soffits, is faced with granite in two shades of pink. The granite was set in place before the concrete was poured and is securely anchored to it. The face of the granite is in general 18 inches in front of the concrete. The bridge provides a roadway 40 feet in width and two 6-foot sidewalks.

The entire project, which included the two bridges and approximately a mile of roadway, was completed at a construction cost of $550,505 and a project cost of $558,554.

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**Twenty-ninth Street Bridge, Baltimore, Maryland**

The Twenty-ninth Street Bridge, which is the smaller of the two, has a single span of 65 feet, and, with its abutments, has an over-all length of 170 feet. It provides a roadway 40 feet wide and two sidewalks 6 feet wide each. Its construction is the same as that of the larger bridge, although the detail of the granite work varies somewhat in design.
Columbia Boulevard
Highway Grade Separation
Cincinnati, Ohio

The traffic way, known as the Columbia Boulevard, about 6.6 miles in length, was begun in 1927 and much of it had been constructed before 1930 at a cost of approximately $3,700,000. This project was completed under the P. W. A. and included many of the more difficult grade separations. The illustrations show the type of work that was done.

The structures are generally reinforced concrete with structural steel used where long spans are necessary. The pavements are monolithic concrete, care having been exercised to waterproof the substructure and framework. The project was completed in November 1938 at a construction cost under P. W. A. only of $2,703,353 and a project cost of $5,058,795.
This new double-leaf bascule bridge at Lafayette Street crosses the East Channel of the Saginaw River to middle ground from whence a nine-span, concrete-arched girder bridge without a draw crosses West Channel, both bridges being included in this project. They replace an old truss bridge which had been posted for not more than 1½ tons load and thus eliminate a bottle neck in traffic. The double-leaf bascule bridge is 447 feet long, providing a 150 foot clear channel, and the girder bridge is 522 feet long. The project was completed in March 1939 at a construction cost of $550,925 and a project cost of $603,360.
Outer Drive Bridge, Chicago, Illinois

The Chicago plan, growing out of the Columbian Exposition of 1893, had as a main feature an outer drive to extend along the entire north and south Lake fronts of the city on land reclaimed from Lake Michigan in front of existing mainland property. By the time of the Chicago Centennial World’s Fair of 1933 this outer drive was practically completed from Jackson Park on the south to the city limits on the north, with protected connections to the city’s chief east and west streets, except at the Chicago River where the drive turned inland and added its traffic to that of Michigan Boulevard, producing intolerable congestion. This project consisted of the completion of the outer drive bridge and its approaches. It is a massive two-leaf “jackknife” type similar to the older bridge at Michigan Boulevard. It is illustrated by the construction photograph at the left. The project was completed in December 1937 at a construction cost of $6,010,311 and a project cost of $6,249,371.
This grade separation at Forty-seventh Street, Chicago, connects the lake-front outer drive with the inner city streets just south of the former Century of Progress grounds and relieves a heavy traffic congestion on Forty-seventh Street. Formerly this Forty-seventh Street traffic was compelled to detour to either Thirty-ninth Street or Fifty-first Street to reach the outer drive.

Approximately 75,000 people live within walking distance of the lake front between Thirty-ninth and Fifty-seventh Streets and to serve this group a low timber-built pedestrian subway was provided in 1926 to enable them to reach the park along the lake front. The elevated lines, which terminate at Forty-seventh Street, also add to congestion at this point by transporting holiday crowds from more remote parts of the city to the lake front.

A permanent structure of concrete and steel on pile foundations replaces the timber subway and provides double-track streetcar lines with 22-foot traffic lanes and two 14½-foot sidewalks. This carries the traffic under the Illinois Central Railway line and, to completely remedy the condition, an underpass was provided at the outer drive with clover-leaf approaches. It is this underpass which is illustrated above. The underpass under the railroad may be seen in the distance. The project was completed in July 1938 at a construction cost of $769,700 and a project cost of $892,615.
These two little bridges in Rock Creek Park, constructed by the National Park Service, are typical of the advance in small-bridge design in our national parks. They are constructed of concrete and stone with wood handrails. This project consisted of five bridges. The bridge shown in the larger illustration was completed in October 1934 at a construction cost of $24,897.
Skyline Drive, *Shenandoah National Park, Virginia*

The Skyline Drive follows closely the course of the Appalachian Trail and extends the entire length of the Shenandoah National Park, along the crest of the Blue Ridge Mountains, nearly 100 miles. It will eventually be extended almost 500 miles farther south.

It is a hard-surfaced highway with parking spaces and wide turn-outs at frequent intervals, from which may be enjoyed views of great beauty—the Shenandoah Valley on the west and the Piedmont section of Virginia on the east. One of the engineering features is an 800-foot tunnel through St. Mary’s Rock near Thornton Gap where the drive crosses the Lee Highway. The portion of the drive, constructed with the aid of P. W. A. funds of $2,117,228.30, was completed in August 1937. The entire project was completed in the fall of 1939 and cost approximately $6,000,000.
Overseas Highway, *Miami to Key West, Florida*

This project converted the old railway line to Key West into one of the most spectacular highways in existence. It loops from key to key crossing water gaps on converted railway bridges, including one 7 miles in length, the longest bridge over water in the world. The trip to Key West can be made in 4 hours over the completed highway.

*Continued on following page*
The new construction is a reinforced-concrete roadway 20 feet wide with precast-concrete guard rails, carried on reinforced-concrete arch spans and steel-girder spans. The draw spans are bascule and swing type. The project was completed in March 1939 at a construction cost of $2,518,427 and a project cost of $3,527,329.
This bridge across the Apalachicola River replaced a privately owned ferry. Its total length is 8,457 feet, of which the Blountstown trestle approach is 6,935 feet, the river-crossing steel spans 744 feet, and the Bristol trestle approach 778 feet. The trestle approaches consist of steel bents on concrete piles and the deck is composed of 8-inch reinforced concrete slabs on steel I-beams. The railing is concrete. The roadway has a clear width of 24 feet. The project was completed in September 1938 at a construction cost of $843,322 and a project cost of $984,486.
Bridge, Blacksburg-Pearisburg Road, Giles County, Virginia

This bridge was constructed by the State with the cooperation of the Bureau of Public Roads of the Department of Agriculture and the assistance of the P. W. A. It spans New River and two railroad lines, and its roadway is supported on 12 concrete open spandrel arches with a total length of approximately a quarter of a mile. The cost of the bridge, exclusive of approaches, was $249,283, of which amount $171,410 came from a P. W. A. allotment of $7,529,702 to Virginia for improvements to roads. The project was completed in June 1935.

Bridge, Transmountain Highway, Montana

This bridge, spanning St. Mary's River on the eastern portion of the Transmountain Highway in Glacier National Park, was constructed by the National Park Service of the Department of the Interior. The roadway is supported on a three-span reinforced concrete slab faced with stone and is 24 feet wide with a 3.5-foot sidewalk. The central span is 46 feet and each end span is 35.5 feet. It was completed in September 1935 at a construction cost of $60,454 and a project cost of $65,290.
The Lake of the Ozarks is an artificial lake with a shore line of approximately 2,500 miles, and its creation necessitated the construction of this highway bridge.

Construction is of the hurricane-deck type, the roadway being supported on three main steel arches and two side spans. The two concrete approaches are each 68 feet 6 inches long, the two side spans are each 377 feet long, and the three main spans are each 463 feet long, making a total length for the bridge of 2,280 feet. The roadway is 22 feet wide and there are two 4-foot sidewalks. The four concrete piers rest on bedrock.

The project was completed in May 1937 at a construction cost of $578,551 and a project cost of $655,973.
This bridge across the Neches River, connecting Orange with Port Arthur, has a total length with approaches of approximately 7,750 feet. The main span is 680 feet from pier to pier and the clearance of the bottom chord at mean low water is 177 feet.

It provides two traffic lanes and two sidewalks and has cut the distance from Orange to Port Arthur from 44 to 24 miles. It was completed in August 1939 at an estimated construction cost of $2,473,083 and a project cost of $2,713,294.
Rustic Bridge, Santa Fe National Forest, *New Mexico*

The Forest Service constructed these little bridges in the national parks. This one is a truss-type foot bridge, 34 feet long, across the Pecos River near San Juan, New Mexico. It is built of unhewn rustic timbers and cost about $1,400.

Cliffdell Bridge, Snoqualmie National Forest, *Washington*

This bridge is also timber but is heavier and carries a highway across a brook. Its span is 90 feet and its total length, including approaches, is 130 feet. The span is supported on log cribbing. Its cost was approximately $4,400.
The Forest Service of the Department of Agriculture constructed this small dam and bridge to replace an old logging dam at Lake Mamie in the Inyo National Forest. The purpose of the dam is to maintain a constant water level in the lake. Its height is 10 feet, the width of its crest is 20 feet and the spillway is spanned by the log bridge, shown in the illustration, which is 50 feet long and 20 feet wide. The dam contains 5,600 cubic yards of earth fill. The dam and bridge cost approximately $9,000 which came out of a P. W. A. allotment of $2,246,599 to the Forest Service in the State of California.

The Forest Service has constructed quite a different type of bridge, in cooperation with the Bureau of Public Roads, across the Mad River, 9 miles north of Comp- ton, New Hampshire, in the Waterville Valley on a highway through the White Mountain National Forest.

The bridge has a central span of 65 feet and end spans of 25 feet each. The roadway is 19 feet wide and is constructed of reinforced concrete supported on steel beams encased in concrete which in turn are supported by two concrete piers and concrete abutments. The project was completed in September 1934. The bridge cost $13,120 of which $12,810 was expended from the P. W. A. allotment of $84,060 to National Forest Highways-Forest Service in the State of New Hampshire.
Broadway Low Level Tunnel, _Alameda and Contra Costa Counties, California_

This twin-bore tunnel is one unit of a project which included 2.8 miles of 40-foot paved highway, three reinforced-concrete overhead bridges, one reinforced-concrete viaduct and railway grade separation, and two portal buildings which house ventilating equipment for the tunnel. The project provides a shorter route from Oakland and the cities of the eastern shore of San Francisco Bay to the San Joaquin and Sacramento Valleys. By means of the tunnel and highway, traffic hazards have been much reduced and a comparatively level route has been provided at an elevation of 800 feet instead of having to cross the Contra Costa Range at an elevation of 1,300 feet. Construction is almost entirely reinforced concrete. The project was completed in November 1937 at a construction cost of $5,182,518 and a project cost of $5,310,034.
The Bureau of Public Roads is the principal road-building agency of the Federal Government. It designs and supervises road construction in national forests for the Forest Service of the Department of Agriculture, and in national parks throughout the country for the National Park Service of the Department of the Interior.

The bridge illustrated on this page is on the highway which crosses the Cascade Range at White Pass and serves as an approach to the Mount Rainier National Park. It is an open spandrel, concrete arch 200 feet long and has three concrete T-beam approach spans at each end. The roadway is 24 feet wide and is 175 feet above the stream bed. It was completed in November 1934 at a construction cost of $51,688 and a project cost of $54,600.
Coast Bridges, *State of Oregon*

The State of Oregon constructed five bridges on the Coast Highway which are known as the Coos Bay, Umpqua, Siuslaw, Alsea, and Yaquina River Bridges. Ocean-going ships enter these rivers so that the main spans at Coos Bay and Yaquina River are high above the water and the lower types are provided with draw spans.

By the construction of these bridges, the State was enabled to provide an uninterrupted highway along the coast from the Columbia River to the California State line. The character of the bridges is similar. They were completed in December 1936 at a construction cost of $5,295,898 and a project cost of $5,435,351.
This structure is one of several provided for the Military Academy by the Quartermaster Corps of the Army with P. W. A. allotments. It is 291 by 137 feet in over-all dimensions and four stories in height. It contains the post exchange, a commissary department, five offices, a file room; and six storage, receiving, and issuing rooms. The foundations, columns, and floors are concrete, exterior walls above grade are brick trimmed with limestone, and the roof is tar and gravel. All floors have a cement finish. The project was completed in September 1935 and the P. W. A. allotment for it was $202,629.
Officers' Quarters
Aberdeen Proving Grounds
Aberdeen, Maryland

This P. W. A. allotment made it possible for the Quartermaster Corps of the Army to erect 12 field officers' quarters of the type illustrated on this page. Each building provides heater, fuel, and storerooms, and a laundry in the basement; a living room, sun porch, dining room, kitchen, pantry, garage, and maid's room on the first floor; and three bedrooms, two baths, and a dressing room on the second floor. They are frame buildings with exterior walls of native quarry stone. They were completed in February 1936 and the P. W. A. allotment, which involved other buildings at the post, was $688,707.
Officers' Mess and Quarters

*Bolling Field, Washington

*District of Columbia

One of the construction projects undertaken by the Quartermaster Corps of the Army consisted of a group of houses at Bolling Field to accommodate 2 field officers and 11 company officers and their families and also an officers' mess.

The houses are all similar and include living room, dining room, kitchen, maid's room, 4 bedrooms, and baths. The officers' mess contains an office, kitchen, pantries, officers' mess room, a lounge, a dormitory, and 5 bedrooms. The houses are brick with wood trim and slate roofs. The mess hall is stone ashlar to the first floor level, brick with stone trim above, and has a slate roof. The houses were completed in October 1934 at a project cost of $148,000. The mess hall was completed at the same time at a project cost of $54,951.
Chapel and Gate to Arlington National Cemetery

*Fort Myer, Virginia*

The Quartermaster Corps of the Army designed and constructed this chapel at Fort Myer and also built the new entrance gateway to the National Cemetery. The chapel is used for religious services at the post and also for rites in the cemetery. It is a brick building with wood cornice, an entrance porch of four stone columns, and a wood spire which rises to a height of 97 feet. The gateway with its brick posts, wide iron gates, and iron lamps ties into the wall surrounding the cemetery. The chapel was completed in May 1935. The P. W. A. allotment for it was $101,724 and the allotment for the gateway was $3,514.50.
These barracks are one of several buildings erected at Fort Knox by the Quartermaster Corps of the Army and consist of 4 units of fireproof construction with concrete frames and brick curtain walls trimmed with stone. Another building, a 2-company barracks, is similar in design and construction, and both structures provide permanent quarters for 456 and 228 men, respectively. They are occupied by the First Cavalry, Mechanized. The project was completed in December 1935 and the P. W. A. allotment for the barracks and other buildings was $579,000.
Several buildings and much needed improvements were carried out by the Quartermaster Corps of the Army at Randolph Field with the assistance of P. W. A. The project included officers' quarters, alterations to hangars, improvements to the landing field, and the construction of the chapel illustrated on this page. This building seems as if it must surely be the restoration of some old mission church built by the Spanish priests long ago rather than a post chapel for twentieth-century Army aviators.

It is constructed of hollow tile stuccoed on the exterior and plastered on the interior. The footings, foundations, and floor are reinforced concrete, and the roof is wood covered with mission tile. The Sunday school is in the wing extending to the right. It was completed in June 1935. The chapel and a post school cost $95,000 of which $62,091 was provided by P. W. A.
Company Officers Quarters

Hamilton Field, California

This P. W. A. project enabled the Quartermaster Corps of the Army to provide Hamilton Field with barracks and officers' quarters. The illustration is one of sixteen identical company officers quarters. Each unit will accommodate 1 officer and his family and is a 1-story-and-basement building with reinforced concrete foundations, stuccoed hollow-tile walls, and a roof covered with Spanish tile. In the basement is a heater room, a storage room, a garage, and a laundry. On the first floor are a living room, dining room, pantry, kitchen, maid's room and bath, and 3 bedrooms and 2 baths. All of the buildings at Hamilton Field have been carried out in the Mediterranean type of architecture. The project was completed in December 1935. The P. W. A. allotment was $657,205 and the sixteen units cost $146,000.
The headquarters building at Hamilton Field is two stories and a basement in height with two one-story wings with loggias. It is constructed of reinforced concrete and the roof is covered with mission tile over wood rafters. It was constructed by the Quartermaster Corps of the Army and was completed in February 1935. The P. W. A. allotment for it was $80,000.
The officers mess, constructed by the Quartermaster Corps of the Army, has a setting of live-oak trees and California foliage. Like most of the buildings at Hamilton Field it has concrete foundations and hollow-tile walls above grade covered with stucco. Its roofs are covered with mission tile. The lounge has two huge fireplaces, rough-plaster walls, and a wood ceiling supported on wood trusses. The building was completed in December 1934, the P. W. A. allotment being $60,000.
Bachelor Officers' Quarters, Submarine Base, *Pearl Harbor, Territory of Hawaii*

This building, constructed by the Navy Department, is 3 stories in height and on the first floor provides a lounge, mess hall, and locker rooms, in addition to the required service rooms. The second floor has 21 bedrooms and a living room, and the third floor contains 11 bedrooms and a game room.

The construction is reinforced concrete, the building being supported on piles and on spread footings. It is an example of how much can be done with architectural concrete. The project was completed in March 1935 at a construction cost of $184,087 and a project cost of $192,000.
United States Post Office

Newport, New Hampshire

Most of the post-office buildings illustrated in this book were designed and carried out by the Public Buildings Branch of the Procurement Division of the Treasury Department. Some of them were designed by the regular staff of the office of the Supervising Architect and some by consulting architects called in and joined to this office, but all of them show an advance architecturally over similar work done in the past.

This small structure at Newport is typical of many of the so-called "one-man" post offices where the postmaster manages the work unaided by an assistant postmaster. The exterior walls of red brick are trimmed with cast stone and the building is fireproof except for the plank roof. It was completed in December 1935 at a cost of $48,529. The P. W. A. allotment was $68,500.
This building is on Dorchester Avenue just below Summer Street and extends from the South Station Building to the South Terminal Co. It is four stories in height and is designed structurally to make possible the addition of a fifth story at some future date. There are two truck-loading platforms on the first floor, one 75 feet in length used by the South Terminal Co., and the other 470 feet long used by the Post Office Department. Between these two platforms is the main entrance to the building with public and parcel-post lobbies, a financial section, passenger elevators, and other public post-office facilities. A mezzanine over the finance section and the lobby provides offices for inspectors and a chauffeurs' swing room. The second floor is used for storage space and shops, the third floor has the Railway Mail Service, city-delivery department, and a cafeteria, and the fourth floor is occupied by the mailing division.

The construction is fireproof, of steel and reinforced concrete, and the exterior walls are faced with a light-gray glazed brick. The project was completed in February 1937 at a cost of $3,369,945. The P. W. A. allotment was $4,425,000.
United States Post Office, Torrington, Connecticut

This post office has two entrances, which is unusual except in large buildings, and its lobby extends along the main street front and along most of the side. The lobby has a terrazzo floor, marble wainscot, and plaster above, decorated with mural paintings. The construction is fireproof except for the roof; the exterior walls are brick trimmed with stone. The project was completed in October 1936 at a cost of $124,529. The P. W. A. allotment was $169,357.61 and the cost of the site $44,800.
This is the most important postal station in New York City, with annual postal receipts of approximately $5,000,000, and a daily handling of 1,000,000 letters and 2,500 sacks of outgoing parcel-post mail. Its main entrance is on 23d Street and the truck entrance is on 24th Street. The 23d Street facade is veneered entirely with thin slabs of mahogany-colored granite, its only decorative features being the incised letters covered with gold leaf, and sculptured figures in the spandrels of each of the five bays which were the result of a sculpture competition by the Fine Arts Section of the Procurement Division. An interesting feature of the lobby is the “bank screen” treatment of the counters, the lobby, and workroom all being one room and not separated by a partition as is usual. The project was completed in August 1937. The P. W. A. allotment was $870,000, the building cost $495,581, and the site cost $379,693.
United States
Post Office, Station X
New York, New York

This postal station is in the Bronx on East 139th Street and serves a territory bounded by the Harlem River on the west, the Bronx Kills on the south, the East River on the east, and 146th Street on the north. It serves a population of approximately 100,000 in an area of mixed residential and business character. Its postal receipts are approximately $300,000 annually.

It is a one and part two story building with a basement, and is entirely devoted to the use of the Post Office Department. The lobby is 20 by 49 feet and has a terrazzo floor, marble base and wainscot, and plaster above. The construction is fireproof, the exterior walls being red brick with a low granite base and limestone trim. It is an extremely successful design. It was completed in October 1936 at a cost of $99,739. The P. W. A. allotment was $151,000 and the land cost was $45,000.
This delightfully designed postal station is on West 140th Street between 7th and 8th Avenues and serves a district bounded by the Harlem River on the east, St. Nicholas Avenue on the west, and a depth of 20 blocks north and south. It is beyond the pneumatic-tube area. It derives its name from a former station near the College of the City of New York. The lobby is 21 by 47 feet and has a terrazo floor, a marble wainscot, and wood trim. The structure is fireproof except for the wood-plank roof which is supported on steel girders. The exterior walls are brick with a granite base and limestone trim.

The project was completed in May 1937 at a construction cost of $98,562. The P. W. A. allotment was $172,104 and the cost of the site was $50,000.
Floral Park is a residential community in Nassau County on Long Island, on the eastern edge of New York City. Its population in 1930 was 10,016, and its postal receipts for 1935 were $47,624.

The building is 84 by 90 feet in plan and is one story and part basement in height with a mezzanine over the mailing vestibule. It is entirely occupied by the Post Office Department. The lobby is 45 by 17 feet and has a terrazzo floor, marble wainscot, and plaster above the wainscot.

The construction is fireproof except for the roof which is wood plank supported on steel framing. The exterior walls are light-red brick with a stone base and wood trim. The cupola is wood and the pitched roof covered with slate.

The project was completed in September 1936 at a construction cost of $66,779. The P. W. A. allotment was $88,519.43.
United States Post Office

Rahway, New Jersey

This post office is of special interest on account of the terra-cotta wall facing which is in large extruded blocks in a tan color with decoration details in green and silver. A wall as true as this would have been impossible in terra cotta before the extruding process was invented. The workroom has an area of 3,946 square feet and the lobby, which is 14 feet wide, has a terrazzo floor and a terra-cotta base and wainscot.

The structure is fireproof up to the roof which is composed of heavy wood planks on steel framing. Only about half of the basement is excavated. The project was completed in March 1937 at a construction cost of $98,989 and a project cost of $123,085.
United States Post Office

*Atlantic City, New Jersey*

The post office at Atlantic City occupies a site with a frontage of 150 feet on Pacific Avenue and 250 feet on Illinois Avenue, and the building occupies about 75 percent of the area. The drive for trucks at the mailing platform is 55 by 130 feet.

The structure is two stories and part basement in height and the Post Office Department occupies all but about one-half of the second floor in which space are offices for the War Department, Civil Service, Internal Revenue, Customs, and Coast Guard. The lobby is 25 by 130 feet and has a terrazzo floor and marble border, base, wainscot, and trim, with screen windows on both sides. There are two entrances.

The construction is fireproof with structural-steel frame, concrete floor and roof slabs, and exterior walls of brick trimmed with stone. The project was completed in February 1937 at a cost of $435,837. The cost of the site was $160,000 and the P. W. A. allotment $676,142.66.
New Castle is historically and architecturally the most important town in Delaware, so that great care had to be taken to provide a post office which would blend with the many fine old colonial buildings. The building constructed accomplishes this. The mailing platform and vestibule are in a wing and the drive for the trucks is screened from the street by a wall and fence. The plan is the "one man" type with the postmaster's office connected directly with both lobby and workroom. It was completed in March 1936 at a cost of $41,179.
United States
Post Office

Easton
Maryland

It would be difficult to design a small public building better fitted than this to the native architectural traditions of the Eastern Shore of Maryland.

The plan is typical of the "one man" post-office type which can be managed by the postmaster alone.

The exterior walls are red face brick trimmed with wood, the roof is covered with slate, and the cupola is wood. The construction is fireproof up to the roof which is of the slow-burning type.

It was completed in July 1936. The construction cost was $48,234 and the project cost $63,427.
United States Post Office, Lincoln Park Station, Chicago, Illinois

This is one of the largest branch post offices in Chicago. It was constructed to provide for a 10-year growth in post-office requirements, and the depth of the property makes possible a future enlargement of the building. The workroom is lighted by skylights and artificial light and has an area of 10,740 square feet. The lobby is 18 by 54 feet and has a terrazzo floor, marble base, and walnut wainscot. The construction is fireproof. The exterior walls are faced with brick, trimmed with limestone, have a granite base, and aluminum spandrels. It was completed in April 1936 at a construction cost of $108,224. The P. W. A. allotment was $184,170.93 and the site cost $51,200.
This is one of the more interesting post-office buildings in which the design avoids tradition. It is fireproof except for the roof, which is slow-burning construction. The exterior walls are a blue-gray brick trimmed with Indiana limestone and the spandrels are aluminum. The lobby has a terrazzo floor and base and a wainscot of American butternut. The workroom has an area of 8,600 square feet. The building was completed in August 1936 at a construction cost of $90,047. The P. W. A. allotment was $121,804.67 and the cost of the site $12,250.
This postal station serves a rapidly growing commercial district in the northeastern part of Cleveland and also the village of Bratenahl, an exclusive residential area lying along Lake Erie. Its postal receipts approximate $133,000 annually.

The lobby is 18 by 51 feet, has a terrazzo floor, a low marble wainscot, and plaster walls and ceiling. The exterior walls are light-red brick trimmed with artificial stone and the building is fireproof except for the wood-plank roof.

It was completed in March 1936 at a construction cost of $70,330.45. The P. W. A. allotment was $92,000.
United States Post Office

St. Charles
Illinois

This post office is of the Greek-revival type of design which prevailed in Illinois during the second quarter of the nineteenth century.

The workroom has an area of 2,335 square feet and is lighted by both windows and a skylight. The lobby is 12 by 40 feet and has a terrazzo floor, marble wainscot, and wood trim. The exterior walls are faced with limestone and a simple but effective use is made of wrought iron at the main entrance.

The project was completed in March 1937 at a construction cost of $61,389. The P. W. A. allotment was $78,864.57.
United States Parcel Post Building, Richmond, Virginia

This building is five stories and a basement in height and was carried out with P. W. A. aid except for the two upper floors which were added later. In addition to the Post office Department it houses units of the War and Navy Departments, Internal Revenue, Federal Housing, Bureau of Public Roads, Social Security, Alcohol Tax, and Interstate Commerce Commission. The building under the P. W. A. contract was completed in June 1936 at a cost of $610,000.
United States Post Office

Plaquemine, Louisiana

This little post office, constructed by the office of the Supervising Architect of the Treasury, serves the town of Plaquemine, which is the parish seat of Iberville Parish. The building has some of the quality of the French architecture of the early nineteenth century which is quite suitable in this part of Louisiana. The workroom has an area of 1,600 square feet and the fuel room is located on the first floor due to soil conditions. The lobby is 12 by 41 feet with a lock box L 13 feet long. The exterior walls are brick, stuccoed and trimmed with cast stone. The roof is flat tile. The lobby has a tile floor and wainscot. The volume of the structure is 9,575 cubic feet and it was completed in May 1936. The P. W. A. allotment was $65,000, the site cost $8,000 and the construction cost was $42,788.
United States Post Office

*La Jolla, California*

This little post office is an example of the excellent results that can be obtained with architectural concrete as carried out in California. The basement is only partly excavated. The lobby has an alcove for the lock boxes and the postmaster's office has access to the lobby and also to the workroom. The swing room for the employees is on a mezzanine floor over the postmaster's office. The project was completed in September 1935 at a cost of $59,009. The cost of the site was $6,500.
United States Post Office, *Marshfield, Oregon*

This post-office building is two stories and a basement in height and houses the Customs Department, Immigration Service, and Army Engineer's Office, in addition to the post office. The workroom is 40 by 85 feet and is lighted by skylights and windows. The lobby is 17 by 66 feet and has a terrazzo floor and a marble wainscot. The building is reinforced concrete. It was completed in November 1936 at a cost of $133,508. The P. W. A. allotment was $156,325.26.
This sea wall is a P. W. A. project of the State Highway Commission and it was required to protect a main coastal highway on a stretch of shore subject to erosion. Its length is approximately 3,900 feet and at 500 feet intervals granite block “groins” extend into the sea about 100 feet to check eroding currents and to catch and hold littoral drift. The concrete sea wall is 14 feet high and has a base 10 feet thick and it is designed to throw the waves back on themselves. The project was completed in January 1935 at a construction cost of $261,278 and a project cost of $264,375.
Immigration Station — Ferryhouse, *Ellis Island, New York, New York*

This building was designed and carried out by the Public Buildings Branch of the Procurement Division for the Immigration Service of the Department of Labor and constitutes one unit of a large project to improve ferry facilities at Ellis Island. The building has two one-story wings and consists of a high central pavilion surmounted by a copper covered cupola. The central pavilion houses a waiting room for the immigrants, the left wing is devoted to the Customs Service, and the right wing has a lunch room with kitchen facilities.

The construction is fireproof throughout, with a steel frame and reinforced-concrete floor and roof slabs, the exterior walls being of brick trimmed with stone. The structure has concrete spread footings and rests on wood piles. The P. W. A. allotment of $471,914 included also a building for incoming immigrants and the remodeling of other structures. The ferryhouse was completed in January 1936 at an estimated cost of $133,000.
These ferryboats ply between St. George, Staten Island, and South Ferry, Manhattan. They are the double-end type, 267 feet in over-all length and 66-foot beam, and have a main deck, an upper deck, and a hurricane deck, and will accommodate 3,000 passengers and 34 vehicles each. The main deck has space for vehicles and smoking cabins for men and women.

The upper deck consists of 1 large cabin surrounded by an open promenade deck, and the hurricane deck accommodates life rafts, 2 operating bridges, and quarters for the officers. Oil is used for fuel and the speed is 18 miles per hour. The 3 boats were completed in April 1938 at a total construction cost of $2,778,648 and a project cost of $2,912,222.
Maintenance Building for the Delaware River Joint Commission of Pennsylvania and New Jersey, **Camden, New Jersey**

This structure contains a large automobile-storage room on the ground floor, and machine shop, a plumbing shop, a maintenance shop, and an apparatus-storage room. The second floor consists of a large storage-room and shops for various trades, surrounded on three sides by offices, and a testing laboratory. It is a fireproof building with reinforced concrete floors. The exterior walls have a granite base and buff-brick facing trimmed with limestone. The inscription is executed in bronze letters and the two inserts are of polychrome terra cotta. The project was completed in July 1937 at a construction cost of $123,593.
Pennsylvania Department of Highways Building

Bedford, Pennsylvania

This garage and highway-maintenance building is one of two similar structures provided by this P. W. A. allotment, the other being at Greensburg. The Bedford building is a one-story structure with a main storage room 60 by 164 feet in front of which is an office unit 45 by 65 feet providing a general office, a superintendent's office, a plan and file room, and a supply room. At the rear is a section 70 by 120 feet providing a repair shop, a paint shop, a carpenter shop, a blacksmith shop, and tool and supply rooms.

The exterior walls are brick with stone trim and the insulated roof is supported on steel trusses. The Bedford unit has a volume of 385,650 cubic feet and the Greensburg unit 682,085 cubic feet. Both buildings were completed in April 1937 at a construction cost for the two of $263,278 and an identical project cost.
North Park Boathouse and Lake

Near Pittsburgh, Pennsylvania

The improvements provided by this project for North Park, a unit of the Allegheny County park system, consist of the construction of an artificial lake, new and relocated highways, docks, and a boathouse and accessories.

The lake was formed by the construction of an earth dam with a concrete spillway, the dam providing a park boulevard on its crest which crosses the spillway on a stone-faced bridge. The boathouse, faced with local stone, is on a low peninsula opposite the dam and is provided with an ample automobile parking space. The project was completed in October 1937 at a total cost of $1,160,620. The construction cost of the boathouse was $60,724 and its project cost $64,539.
This main laboratory building and a small animal laboratory, constructed by the Bureau of Animal Industry of the Department of Agriculture, provide laboratory facilities for genetic, chemical, nutritional, physiological, histological, physical, and other forms of biological research that are involved in the studies of breeding and feeding of livestock. The project included, in addition to the 2 laboratory buildings, a boiler house, a water system, a power line, roads, bridges, and some minor buildings. The main laboratory is 3 stories in height and provides 108 rooms which are used for offices, general laboratory work, and research. All of the laboratory work of this division of the Bureau, except the work in poultry investigation, is carried on here. A technical library serves this and other units at the Agricultural Research Center. The construction is fireproof with exterior walls of random ashlar stone to the main floor level and brick above this. Cornice and cupola are wood and the roof is slate. The project was completed in September 1937 at a construction cost of $759,489 and a project cost of $952,781.
This building was erected by the Bureau of Entomology and Plant Quarantine of the Department of Agriculture to further their research and investigation into the means of controlling and eradicating insect pests and diseases of plants. The building assembles units under 1 roof which were widely scattered. It contains 22 laboratory units, a library, an office, a honey laboratory with floor and walls of white tile, 4 constant temperature rooms, a cold-storage plant with refrigerating machinery, and 3 other storage rooms. The construction is fireproof. Frame and floors are reinforced concrete, exterior walls are brick, the cornice is wood, and the roof is covered with slate. The project was completed in November 1935. The original P. W. A. allotment of $134,999 was increased to $136,917.83.
Among the activities of the Bureau of Plant Industry of the Department of Agriculture are plant research and experimentation and their related problems of the study of soils and their improvement, as well as enforcement of the Federal Seed Act and the control of the quality of plant and soil inoculants. This laboratory and research building provides laboratories and offices in which the work may be carried on and is a necessary adjunct to the nursery greenhouses, storage buildings, propagating sheds, and other facilities which had already been provided. The building is fireproof with exterior brick walls trimmed with stone and wood. It was completed in March 1936 at a construction cost of $128,732 and a project cost of $137,782.
Department of the Interior Building and Indian Arts and Crafts Shop, Washington, D. C.

The Department of the Interior Building was carried out by the Public Buildings Branch of the Procurement Division of the Treasury Department and it houses the activities of the Interior Department which were formerly housed in 15 different structures in the District of Columbia. It covers almost 5½ acres bounded by C, E, 18th, and 19th Streets and is 6 stories in height on C Street and 5 stories on E Street. It is entirely fireproof and the exterior walls are faced with limestone. It was completed in July 1938 at a construction cost of $12,149,209.50 and a project cost of $14,291,890.

The Indian arts and crafts shop, on the first floor, is one of the most interesting features of the building, since it has been decorated with mural paintings by two Indians, one a Navajo and the other an Apache. The Navajo mural is entitled “Stalking the Deer” and the Apache mural is divided into two parts, one entitled “Buffalo Hunt” and the other “Changing Camp.” The room is designed in the style of an old Spanish mission and exhibits examples of Indian handicraft.
Federal Trade Commission Building, Washington, D. C.

This building, carried out by the Public Buildings Branch of the Procurement Division stands at the intersection of Pennsylvania and Constitution Avenues and forms the apex of the "Triangle" or Constitution Avenue group of Government buildings. The structure has one entrance on 7th Street and two each on Pennsylvania and Constitution Avenues, and all its floors except the seventh are devoted to offices of the Federal Trade Commission. The seventh floor contains a cafeteria, offices, and space for mechanical equipment. The construction is fireproof throughout, the exterior walls have a granite base, limestone above, and a tile roof. It was completed in October 1938 at a construction cost of $3,514,660.32. The P. W. A. allotment was $3,780,000.
The Washington Monument, as designed by Robert Mills, was begun in 1848, and was erected to a height of 150 feet by 1854, with funds provided by popular subscription. In 1876 Congress appropriated funds for its completion by the Government and work was resumed in 1878 under the direction of the Corps of Engineers of the War Department. The Monument was finally completed in 1884.

The exterior of the shaft is built of white marble, while the interior is of granite. No repair work had ever been done and the exterior had cracked and spalled, resulting in leaching of mortar and leaks through the walls.

In 1934, with P. W. A. aid, a tubular steel scaffold, which completely covered the shaft, was erected. A thorough job of repointing and repair was carried out and the entire shaft cleaned from top to bottom.

The work was completed in February 1935. The cleaning, pointing, and repair work cost $19,042.87, while the erection and dismantling of the scaffold cost $67,333.11. The total project cost was $86,375.98.
Smithsonian Institution
National Zoological Park

Pachyderm House

Washington, D.C.

The pachyderm house at the National Zoological Park is 227 by 90 feet and is a building for the exhibition of elephants, giraffes, rhinoceri, hippopotami, and pigmy hippopotami. In addition to the indoor cages, there are ample outdoor pens, separated from the public by deep moats, with the exception of the pen for giraffes, which is fenced. The interior cages are decorated with mural paintings showing landscapes characteristic of the habitat of the animals. The exterior walls are a random ashar of native stone trimmed with limestone and with a granite base.

The project was completed in June 1937 at a project cost of $335,465.

Continued on following page
Smithsonian Institution
National Zoological Park

House for
Small Animals and Great Apes

Washington, D. C.

Continued from preceding page

This building is a rectangle with a large semicircular end. It contains 96 cages and tanks, varying in size from a few inches to 12 by 40 by 10 feet to provide accommodations for a great variety of animals. It is divided into 4 sections. The large central room has cages which vary in size from 4 by 5 to 6 by 12 feet, some with glass fronts and others with steel bars. The second section is for the great apes, gorillas, chimpanzees, and orang-outangs. The third section is for the gibbons, and the fourth section, known as the "nocturnal room," occupies the semicircular end and houses a group of small creatures which are seldom seen in public collections.

The building is brick trimmed with limestone and has a roof covered with tile. A very complete system of ventilation has been provided. It was completed in May 1937 at a project cost of $280,856.
Mall Development, Washington, D. C.

In 1901 the McMillan Commission, composed of eminent architects and landscape architects, recommended a departure from the type of mall development previously planned, which would have consisted of winding roads and an "English type" of landscaping. They returned to the principal features of Major L'Enfant's design, which called for a wide central avenue extending west from the Capitol. This became possible when the railway station and tracks were removed from the Mall early in this century.

The plan as finally accepted proposed a broad carpet of grass between park drives, bordered on either side by formal rows of trees.

During the World War several temporary buildings were erected on the Mall, but in 1933, with the aid of funds from the P. W. A., work was begun to demolish these structures and to develop the Mall between 2d and 14th Streets. The work was carried out under the National Park Service and consisted of removing the temporary buildings, constructing the four parallel park drives, seeding the grass panels, and planting the trees.

Much yet remains to be done. Ultimately the other encroaching buildings will be removed, the grade at 12th Street will be raised, and the park drives will be carried over 14th Street on bridges, thus completing the whole Mall from the Capitol to the Lincoln Memorial.

The work undertaken between 2d and 14th Streets was completed in November 1937 at a total project cost of $635,197.17.
Starved Rock Lodge

Starved Rock State Park, Illinois

Starved Rock State Park is approximately 85 miles southwest of Chicago on the Illinois River and is a point of considerable historic and scenic interest. The park is many acres in extent and is well wooded. Until the construction of this project all improvements had been directed toward preserving the natural beauty and emphasizing the pioneer and Indian traditions.

This P. W. A. project constitutes the completion of a "lounge" begun by the C. C. C. and the construction of a dining room, kitchen, sanitary facilities, and a concession group which, with cabins already built, constitutes a complete park hotel for both summer and winter use. The larger illustration shows a view of the group and the smaller is a detail of the "lodge." The project was completed in June 1936 at a construction cost of $102,299 and a project cost of $102,299.
This reptile house has been constructed in such a way that the various species of snakes have living conditions approximating as closely as possible their natural environment. An air-conditioning system with a wide range of control makes it possible to vary the temperature in the different cages as desired. An artificial swamp for water snakes is included and each cage has rocks, sand, or pools, and painted dioramas to conform to the conditions required for each kind of snake. The building is fireproof, the exterior masonry walls being stuccoed and trimmed with stone. The project was completed in February 1937 at a construction cost of $120,199 and a project cost of $130,395.
The problem involved in the construction of the new bear pits at the Cincinnati Zoo was to create a natural environment for the animals and at the same time to eliminate the usual barriers between them and the spectators.

The pits are approximately 256 feet long and are divided into three open-air dens with a service corridor in a tunnel back of the dens. The den for polar bears, which is illustrated on this page, is 85 by 43 feet and contains a pool 18 by 48 feet and four caves. The other pits are for brown bears and for cubs. A moat 14 feet in width and depth separates the dens from the spectators. All the work is carried out in reinforced concrete to represent natural rock formations.

The project was completed in February 1937 at a construction cost of $94,873 and a project cost of $107,041.
In 1935 Congress authorized the transfer of a portion of the property within the Fort Knox Military Reservation in Kentucky to the jurisdiction of the Secretary of the Treasury for the construction thereon of a depository for bullion.

The two-story, basement, and attic building is granite, steel, and concrete supported on a 10-foot thick mat of concrete. Its exterior dimensions are 105 by 121 feet and its height is 42 feet above the first-floor level. It was constructed under the supervision of the Procurement Division of the Treasury Department and upon completion was turned over to the Director of the Mint.

Within the building is a two-level steel and concrete vault, 40 by 60 feet, with 14 compartments on the subterranean level and a like number on the ground level. The vault door weighs more than 20 tons. To open it requires the cooperation of different members of the depository staff, who must dial separate combinations. The construction of the vault casing includes the use of steel plates, steel I beams and steel cylinders laced with hoop bands and encased in concrete. The vault roof, of similar construction, is independent of the bombproof depository roof.

The vault is surrounded by a corridor which is so arranged that the guards are able to observe the space between the top of the vault and the roof.

Between the corridor and the outer wall of the depository the space is utilized for the offices of the Chief Clerk in charge, captain of the guard, rooms for bookkeeping, guards, storeroom, and other purposes. The outer walls of the building are of granite lined with reinforced concrete.

Separated from the building on the outside are four guard boxes, one at each corner. A high steel fence marks the boundaries of the site.

Automatic electric-signal systems and telephones, radios, and microphones are part of the mechanical safeguards in the building. It is near the Fort Knox Army post which provides additional protection. The building is equipped with its own emergency power plant, water system, and other facilities. There are living apartments for the guards and in the basement is a pistol range for practice.

The building cost $431,167. The total project cost was approximately $540,000.
Housing for River Stage Recorder

_Columbia, South Carolina_

The Weather Bureau of the Department of Agriculture, cooperating with the Geological Survey has erected, on the rivers of the United States, 84 of these concrete housings, in each of which is a mechanism to measure and record the rise and fall of the water level of the river as it is influenced by rainfall and drought. Each structure is 34 feet high, 6 feet square, and contains a float pipe, index, gages, etc. Some are equipped to transmit the gage indications to a central station by radio. This particular project was completed in November 1934 at a cost of $2,700. The cost of the 84 was $149,984.
This market building, surmounted by a small dome, is cross-shaped in plan. On the main floor are restaurants and rest rooms, and the main aisle, 26 feet wide, is flanked on each side by market booths. The basement floor is stepped to give clear heights of 11, 12, and 14 feet and here the farm produce is received. On this floor are also a restaurant, the market master’s and janitor’s rooms, refrigerating machinery, a wholesale department, and a garage.

The structure is fireproof with exterior walls of brick trimmed with stone. It was completed in February 1937 at a construction cost of $253,304 and a project cost of $494,640.
Memphis is one of the largest inland ports of the world. The need of grain-elevator facilities made the city construct the grain elevator, a barge loading and unloading unit, a conveyor tunnel from the river to the elevator, necessary railroad tracks, and a paved highway approach. The elevator building, shown in the illustration, is 260 by 215 feet in over-all dimensions and varies from 11 to 95 feet in height.

It is divided into 2 sections and constructed of concrete, the workhouse section with a concrete roof, and the storage section with a sloping metal roof. The 14 bins are 28 feet in diameter and beneath them is a concrete tunnel, 7 by 10 feet, running the full length of the building and containing a 24-inch belt recovery conveyor. The tunnel to the river is 8 by 8 feet and 135 feet long and houses the reversible conveyor belt. A pier at the river supports the tower carrying the movable unloading gallery and equipment. The tower on the end of the main building contains a 3,000 bushel bin over a 2,500 bushel weighing scale. The project was completed in December 1936 at a construction cost of $287,871 and a project cost of $358,726.
Jewel Box, Floral Conservatory, Forest Park, St. Louis, Missouri

This structure houses rare and beautiful plants, trees, and flowers, and is an important unit of the general park improvement program for St. Louis.

The steel frame of the building supports structural glass panels on its vertical surfaces which are reasonably hailproof, and the horizontal roofs are metal covered. Great care was taken with the lighting, which was carefully studied with a model of the building before installation. The interest of the public in the displays is so great that more than 1,000,000 people have visited the “jewel box” since its opening. It was completed in May 1937 at a construction cost of $122,851 and a project cost of $129,756.
Hall of Waters, Excelsior Springs, Missouri

Various wells connected with the city water supply at Excelsior Springs were found to contain certain chemicals of medicinal and therapeutic value. This water is first purified and then pumped to the dispensing outlets in the "hall of waters" which was erected by the city as part of a program of the mineral-water development. The building contains a large swimming pool, hydrotherapy departments for men and women, locker and shower rooms, and rooms for cooling and packing treatment. Also included are offices for the chamber of commerce, city council, manager, and for sales, production, and distribution of water. The building is constructed of rubble stone, dressed stone, and some stucco finish. It was completed in July 1939 at a construction cost of $574,187 and a project cost of $873,257.
The illustrations show the new quarters for mountain sheep and yak at the Forest Park Zoo. In order to obtain the effect of the rugged country to which these animals are accustomed, full-size plaster molds were made of rock formations in the Ozark Mountains, and these were used as forms for pouring the concrete of which these artificial rocks are constructed. The effect produced is most realistic. The project was completed in January 1937 at a construction cost of $149,931 and a project cost of $163,869.
This interesting structure is one story in height except for a small area over the main entrance which is two stories. It has a large exhibition hall for the showing of livestock, an office, and sleeping quarters for employees. It is part of the program of the State to encourage agriculture and livestock raising. The construction is semifireproof. The exterior walls are brick trimmed with stone and the roof, with its clerestory lighting, is supported on steel trusses. The project was completed in September 1938 at a construction cost of $118,921 and a project cost of $124,666.
Division Garage Building, Willow Springs, Missouri

This division garage for the State Highway Commission is two stories in height and provides a repair shop and stock room in addition to storage space for cars. The construction consists of load-bearing walls of rubble sandstone backed with tile, reinforced-concrete floor slabs, and a roof of bar-joist construction. The project, including drives and landscaping, was completed in April 1937 at a construction cost of $71,338 and a project cost of $77,527.
Oil House at Dora Lake Ranger Station

*Chippewa National Forest, Minnesota*

This oil station, erected by the Forest Service of the Department of Agriculture, illustrates one type of log construction frequently used in the buildings in our National Parks. Its rustic character fits its forest setting. It was built at a cost of $2,232.15, which came out of a P. W. A. allotment of $782,525 to the Forest Service for physical improvements and control of blights and insects in the forests of Minnesota.

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Administration Building at Dolly Copp Forest Camp

*White Mountain National Forest, N. H.*

Log construction has also been applied in this New Hampshire forest. This administration building, 30 by 80 feet, has two community rooms, guard quarters, living accommodations, and an office, and boasts of three fireplaces. It is the focal point for all forest camp activities in the area, which is one of the most popular districts for campers in the East. It was constructed at a cost of $7,188, part of an allotment of $107,019 to New Hampshire forests.
Louisiana State Exhibit Building

*Shreveport, Louisiana*

This unusual structure stands on the fair grounds in Shreveport and is a permanent State exhibit building. It consists of a one-story circular pavilion 200 feet in diameter, with a circular interior court 116 feet in diameter, and of two rectangular one-story wings, connected to the circular pavilion by covered passageways, which are used both for displays

*Continued on following page*
and as small auditoriums. Above the recessed doorways of the main entrance are large frescoes depicting events in the early history of the State and on the floor of the central lobby, protected by an aluminum rail, is a relief map of the State of Louisiana, approximately 14 feet in diameter, on which are shown the important agricultural and industrial regions as well as the rivers and watersheds. The interior concourse is 42 feet wide and contains the display cases, and its walls will eventually be decorated with photomurals showing the natural resources, industries, and history of the State. The building is of fireproof construction, and the exterior walls are buff-colored limestone. Steps and platforms and the columns at the main entrance are pink granite. The project was completed in December 1938 at a construction cost of $515,787 and a project cost of $553,176.
Along the Mississippi River water front in New Orleans is located a group of buildings comprising the old French market, which is one of the largest public markets in the United States. One of the buildings was erected during the Spanish domination in the eighteenth century, and it has been an object of interest to tourists for the past 100 years.

This project consisted of three main parts, the first being alterations and additions to the existing meat market, the second consisting of the erection of a unit containing fruit, vegetable, and poultry markets, and a restaurant, and the third, a group of three buildings including the famous stall market and a coffee shop. The project was completed in January 1938 at a construction cost of $287,716 and a project cost of $323,750.
The city of Shreveport has provided this market with the idea that it may ultimately develop into a cooperative venture for the benefit of the local farmers. It consists of 2 steel sheds each approximately 37 by 182 feet which provide 72 stalls, each 10 feet wide, or 720 feet of display stands and curb space for trucks. Brick walls at the front of each shed conceal the skeleton steel framework. A paved roadway encircles each unit and connects with the principal thoroughfare 150 feet away. Buildings "C" and "D" shown on the plan may be constructed when need for expansion arises. The project was completed in July 1935 at a construction cost of $47,775 and a project cost of $50,344.
This structure is one of the permanent buildings erected at Fort Worth at the time of the Exposition. It is one story in height and contains tie rack space for approximately 600 head of cattle, wash racks, offices, locker rooms, and an auction ring with elevated grandstand seats. The exterior walls are monolithic concrete, and the roof has structural steel framing. The project was completed in February 1937 at a construction cost of $184,588 and a project cost of $213,033.
City Market

Austin, Texas

This modern municipal market is planned like a large X. Offices and restaurant facilities are provided in a central building from which four covered sheds extend. At the north end of the property a scale house and scales are provided. The construction is reinforced concrete with some brick and glass used, particularly in the central circular pavilion. The floors under the sheds are cement and all areas are paved to permit easy circulation. The project was completed in May 1935 at a construction cost of $54,669 and a project cost of $79,589.
Grain Elevator

Kansas City

Kansas

This purely functional structure is known as the "River-rail elevator" and was erected by the city of Kansas City at the junction of the Missouri and Kansas Rivers. It is equipped to transport grain both ways between the river and the railway, a distance of 1,000 feet, by means of a belt gallery from the workhouse to the wharf. The present plant has a capacity of 3,000,000 bushels and is so designed that it may be easily added to northward from the workhouse. It consists of a workhouse with a track shed, a track dump shed, a grain-tower building, storage annexes, marine tower and gallery, office, and machine shop. At the marine end of the shipping gallery is a terminal tower from which dock spouts convey the grain to barges. The grain is carried out to the terminal tower on a 30-inch belt conveyer, at a rate of from 10,000 to 12,000 bushels per hour. In case of an emergency, automatic controls make it possible to stop the belt conveyer at the barge or at the marine tower. The project was completed in November 1937 at a construction cost of $1,311,866 and a project cost of $1,414,025.
The P. W. A. provided the Forest Service of the Department of Agriculture with funds for the purpose of making physical improvements in national forests in nearly every State in the Union. These improvements consist of equipment for the control or elimination of tree-destroying diseases and insects, constructing and rebuilding national forest highways, roads and trails, and the construction of buildings for the comfort and convenience of tourists and for housing of keepers, guides, rangers, and other employees in the national forests. The illustrations are views of the Canjilon Ranger Station in the Carson National Forest which consists of a dwelling house, a combination barn and garage, and an office. The construction of all three buildings is adobe. They were completed in June 1935, the cost of the dwelling being approximately $4,000. The P. W. A. allotment to the Forest Service for the State of New Mexico was $718,899.
This large structure covering an entire city block was built by the Public Buildings Branch of the Procurement Division to house various Federal offices in San Francisco. It houses the Navy Department, Veterans' Bureau, War Department, Interior Department, the Weather Bureau, Forest Service, Public Roads Administration, Civil Service Commission, and the Employment Compensation Commission.

The building is fireproof, constructed entirely of steel and reinforced concrete with the exterior walls faced with stone, and is designed to resist earthquake shocks. The lobbies have marble floors and walls, and the corridors have tile floors, marble base, and plaster walls. The project was completed in May 1936 at a construction cost of $2,763,447.52 and a project cost of $3,039,706.
United States Mint

San Francisco, California

The United States Mint at San Francisco occupies an imposing site on the summit of a rocky hill overlooking Market Street, the main thoroughfare of the city. The southern approach consists of a double flight of winding stone steps to a platform from which a single flight extends to the portal in the wall of the building. There is only one approach for vehicles.

The structure is built around a central court and is four stories in height. On the ground floor are storage vaults for gold and silver, storage for bar silver, a loading platform, carpenter shop, electric shop, plumbing shop, general store room, heating plant, and the public lobby and vestibule. The second floor contains offices for the superintendent, license clerk and chief clerk, a public lobby, deposit-melting room, ingot-melting room, minor coinage-melting room, annealing room, and pressroom. The third floor contains the assay office, rolling and weigh room, assay laboratory, and machine shops. The fourth floor, which is really a penthouse, contains the precipitator system, machine room, an electric storage room shop, a lunch room, and a kitchen.

The building is fireproof and is constructed of reinforced concrete with the exterior walls faced with granite. The design is simple and practically the only ornament consists of terra-cotta reproductions of United States coins which are inserted in the upper part of each of the piers between the windows. The steps, floors, and walls of the public lobbies and stairways are marble, and the elevator doors and stair rails are yellow bronze. The project was completed in May 1937 at a cost of $1,072,254. The P. W. A. allotment was $1,247,169.29 and the site cost $82,500.
Typical Structures

Western Division, National Parks and Monuments

The National Park Service of the Interior Department has constructed a large number of buildings in our national parks and these three little structures give an idea of their character. The larger illustration shows one of four comfort stations in the Yosemite National Park, constructed of native stone and wood. The left-hand illustration is of a fire lookout tower in the same park built of wood on a rugged stone base. The mess hall and kitchen, built of rough lumber on a stone foundation and with a steep roof to shed the snow, is likewise in the Yosemite National Park. All three structures are without a historic style but harmonize with their surroundings. They were all completed in October 1934 at costs of $11,993.07 for the four comfort stations, $3,488.95 for the lookout tower, and $9,667.45 for the mess hall and kitchen.
Office and Laboratory Building, *Mount Shasta National Forest, California*

This building was constructed by the Forest Service for the Mount Shasta branch of the California Forest and Range Experiment Station, and is located in an area of several thousand acres of dense chaparral set aside for experimental fire work in brush-covered land. The area is representative of over 1,000,000 acres of high-quality timberland which is overgrown with brush as a result of fire or logging followed by fire. The building is wood on concrete and brick foundation. It was completed in October 1935 at a cost of $7,452, which came out of a $2,246,599 P. W. A. allotment to the Forest Service.
The site of this Exposition is Treasure Island, a man-made island of 440 acres in San Francisco Bay, designed primarily as a naval air base but used temporarily for the Exposition. The P. W. A. participated in the construction of 13 buildings for the Fair, these buildings being indicated on the airplane view and designated by numbers as follows: (1) Mines, metals, and machinery; (2) homes and gardens; (3) west airplane hangar (hall of air transportation); (4) east airplane hangar (palace of fine and decorative arts); (5) east ferry slip; (6) foods, beverages, and agriculture; (7) vacation land; (8) automotive building; (9) tower of the sun; (10) hall of science; (11) west ferry slip; (12) electricity and communications; (13) administration and terminal building. Of these structures the two airplane hangars and the administration and terminal building are permanent and are to become a part of the naval air base, while all the other buildings are of temporary construction.

The dominating feature of the Fair is the slender tower of the sun which rises 400 feet above the island and contains a 40-bell carillon.
Golden Gate Exposition, Treasure Island, San Francisco, California

Continued from preceding page

The administration and terminal building is semicircular in plan, its court having a diameter of 86 feet. It is constructed entirely of reinforced concrete and is designed to resist earthquake shocks. It has 2 main floors and 2 mezzanine floors and is provided with a radio control room and an aerial beacon on top of the structure for eventual use in connection with the airfield. The project was completed in June 1938 at a construction cost of $3,977,203 and a project cost of $4,320,511 for that portion of the work carried out with the aid of the P.W.A. The total cost of the entire Fair amounted to approximately $60,000,000.
This building is one unit of the docket covering general harbor development and improvement at Los Angeles. It has an area of 4,800 square feet and houses a 300,000-pound capacity Southwark Emery universal testing machine, as well as complete physics and chemistry testing laboratories for testing all types of materials used in construction.

The building is reinforced concrete throughout and is designed to resist major and minor earthquake disturbances. It was completed in 1937 at a cost of approximately $65,500. The total project cost of the entire docket, including all harbor improvements, was $1,152,156.
Livestock Exhibition Building, San Francisco, California

This structure is only one of a large group of proposed buildings. The larger illustration shows the interior arena with its banks of seats accommodating 12,000 spectators. It is approximately 250 by 130 feet and the steel truss roof is 110 feet above the floor.

The building is constructed of reinforced concrete with the exception of the roof where the cantilever steel trusses extend above it to form exterior ribs.

The project was completed in February 1938 at a construction cost of $667,974 and a project cost of $701,648.
United States Immigration Station and Customs Office

Nogales, Arizona

This inspection station at one of the important points on the International Boundary has a Mediterranean character that seems to suit its location in a part of the country where Spanish tradition persists. Its brick walls are covered with stucco and the roof and the small wood cupola are covered with Spanish tile.

It was completed in June 1935 at a construction cost of $130,549 and a project cost of $172,231. The cost of the site was $22,500.
The packers cabin at Bright Angel Creek and the little barn and garage shown in the upper illustration are two typical examples of the work carried out by the National Park Service at the Grand Canyon National Park. Both structures were carried out by day labor. The cabin was completed in October 1934 at a cost of $898.18 and the barn and garage was completed in August 1935 at a cost of $2,155.58. Local materials were used for both.
Indian Council House, Navajo Capital, *Window Rock, Arizona*

This structure is a meeting house for the tribal council of the Navajo Indians. Its shape and construction is based on Navajo building forms. It is octagonal in form and approximately 72 feet across in each dimension with its exterior walls constructed of native rubble stone finished on the inside with adobe plaster. The upper roof is supported by unhewn logs which extend somewhat like flying buttresses into the stone piers at the corners of the octagon. Both upper and lower roofs are covered with adobe. It is one of many buildings constructed on the Navajo Reservation with P. W. A. funds. It was completed in December 1935 at a construction cost of $27,614 and a project cost of $29,526.
Laboratory and Greenhouse
University of Arizona
Tucson, Arizona

The structure illustrated on this page was erected by the Soil Conservation Service of the Department of Agriculture to provide an erosion-control nursery and laboratories for the growing and testing of soil-protecting trees, bushes, plants, and grasses, as well as facilities for seed assembling and dis-

tribution. The building is of adobe construction and contains offices, a conference room, rooms for seed storage and packing, and a dark room. The greenhouse is typical greenhouse construction. The project was completed in August 1935 and the P. W. A. allotment was $17,190.
This light and fog-signal tower is typical of many of the smaller structures which have been erected on the coast line and rivers of the United States. The tower and housing for the equipment operating the fog horn is of reinforced concrete, approximately 15 by 15 feet at the base, and 35 feet high. It is surmounted by a lantern. This project was completed in March 1935 and the P. W. A. allotment with which it was built included the electrification of other light towers and amounted to $13,500.
Among the many lighthouses designed and erected by the technical staff of the Bureau of Lighthouses is the one at Tree Point, Alaska, which is an interesting example of this type of work. The machinery equipment building forms the base of the tower and is 18 feet wide by 36 feet long. The tower itself is 13 by 13 feet and 58 feet high and is surmounted by a lantern having the usual lighting and signal equipment. The entire structure is built of reinforced concrete. The project consisted of two towers of similar design on the Alaska coast. They were completed in December 1936 at a cost of $84,647.98 for the two.

This lighthouse stands on an island approximately 750 by 190 feet in size and is midway between Stephens Passage and Frederick Sound. The tower, surmounted by a lantern, rises from a rectangular base which contains a combination living room and kitchen, four bedrooms, a bath, a radio room, an engine room, battery room, boiler room, and the necessary storage space. On the island are also a hoist house, a boathouse, and a short stretch of sea wall. All construction is fireproof and is reinforced concrete. The station is equipped with fog signals, and its 7,100 candlepower lamp has a range of 15 miles. The project was completed in May 1936 at a cost of $92,996.10.
The Section of Fine Arts of the Procurement Division of the Treasury Department has provided national and local competitions for the selection of painters and sculptors to execute mural paintings and decorative sculpture for the public buildings constructed by the Public Buildings Branch of the Procurement Division. The upper left-hand illustration is of a piece of sculpture over an entrance to the Federal Trade Commission Building in Washington, D. C. The upper right-hand illustration is a relief of Remington, the inventor of the Remington rifle, in the lobby of the post office at Ilion, New York. The lower illustration is a life-size bronze sculpture of an anteater, placed in front of the small-mammal house at the Washington, D. C., Zoo.

Continued on following page
Sculpture and Painting

Continued from preceding page

Of the mural paintings illustrated on this page, the upper one is in the post office at Holyoke, Massachusetts, and depicts Elizur Holyoke and his followers on the Connecticut River. The center illustration is in the post office at Torrington, Connecticut, and depicts episodes in the life of John Brown, who was born in Torrington. The lower illustration is in the post office at Montebello, California, and its subject is a fiesta procession in Old California. The prices paid for these murals were, respectively, $2,400, $1,800, and $350. The amount that can be paid comes out of the project cost of the respective buildings.
U. S. S. Yorktown, Aircraft Carrier, U. S. Navy

The upper illustration is of the U. S. S. Yorktown, launched April 4, 1936, and commissioned September 30, 1937. She has a standard displacement of 19,800 tons and mean draft at standard displacement of 21 feet 8 inches. Her length over-all is 809½ feet and her beam is 83 feet. Her main battery consists of eight 5-inch 38-caliber guns.

U. S. S. Porter, Destroyer, U. S. Navy

The lower illustration is of the U. S. S. Porter, launched December 12, 1935, and commissioned August 27, 1936. She has a standard displacement of 1,850 tons and a mean draft at standard displacement of 10 feet 5 inches. Her length over-all is 381 feet with a beam of 36 feet 2 inches. Her main battery consists of eight 5-inch 38-caliber guns and eight 21-inch torpedo tubes.
With the assistance of the P. W. A., the Coast Guard fleet received much-needed augmentation consisting of cruising cutters, patrol boats, motorboats, surf boats, and other craft. One of the 327-foot cruising cutters is illustrated above. These boats were designed for the general performance of all Coast Guard duties and were constructed to replace obsolete cutters whose useful life had terminated. The cruisers are 327 feet long, 41-foot beam, a draft of 12½ feet, 2,000 tons displacement, twin screw, geared turbine, 6,200 shaft horsepower, and a maximum speed of 20 knots. Four of the boats were constructed at the Philadelphia Navy Yard, two at New York, and one at Charleston. They are stationed on the Atlantic and Pacific coasts and in Alaska and Hawaii. The P. W. A. allotment for the seven cutters was $16,772,244.

The illustration on the left is of one of the smaller type of cruising cutter. Five boats of this kind, known as the “Escanaba type,” were constructed under contract with private shipyards. They are 165 feet long, have a 36-foot beam, a draft of 13½ feet, and a displacement of 1,005 tons. Power is supplied by geared turbines and the boats have a maximum speed of 12.8 knots. These cutters are used for assistance and rescue work, derelict destruction, emergency salvage, and for ice-breaking work. The P. W. A. allotment for the construction of these five boats was $2,860,325.85.
Coast Guard Airplanes

Intermediate Range Patrol

The Coast Guard Bureau of the Treasury Department was enabled to purchase a number of airplanes with P. W. A. funds and these planes fall into two general types.

The Intermediate Range Patrol planes are twin-engine amphibians having a speed of 150 m. p. h. and a range of about 700 miles. They are used for rendering assistance to persons and vessels in distress where the greater range of the long-range airplanes is not required.

The illustrations on this page show, at the top, a Stinson model R; next below, a Northrop model RT-1; below that, a JF-2 Grumman amphibian; and at the bottom of the page, an RD-4 Douglas amphibian.

Inshore Patrol
and
Convertible Land-Seaplanes

These planes are provided with a single engine and have a speed of 170 m. p. h. and a range of from 300 to 1,000 miles. They are used for scouting and law enforcement along the land and sea borders of the United States and also in districts where illicit distilleries may be found, and may be used to a limited extent for life-saving purposes. Airplanes of this class are assigned to vessels of the Coast Guard which are equipped to carry planes.

The P. W. A. allotment for planes and equipment was $1,524,181.
Loans were made to 32 railroads throughout the country by the P. W. A., aggregating $200,974,500, for improvements to the rights-of-way and the purchase of equipment. The larger illustration shows the electrification of the line of the Pennsylvania Railroad between New York and Washington. The other picture shows, on the left, the British “Coronation Scot” and then the types of locomotives bought with the assistance of the P. W. A. To the right of the “Coronation Scot” is the “Royal Blue” steam locomotive and the “Abraham Lincoln” Diesel-engine locomotive of the Baltimore & Ohio Railroad. To the right of these is the “Congressional” electric locomotive of the Pennsylvania Railroad.
Housing

Surveys indicate that one-third of the population of the cities and towns in all parts of our country are housed in substandard dwellings and that this condition contributes a menace to health, morals, comfort, and to the happiness of this considerable part of our population. It is further shown that wherever these slum areas occur, the municipal costs of police and fire protection, the courts, and health and hospital services are excessive.

In 1933 the Federal Government attacked the housing problem for the first time, which private enterprise had never been able to solve successfully, and financed 52 demonstration projects through the P. W. A. to house approximately 22,000 families. In addition to this, 7 limited-dividend (privately owned) projects were financed through the P. W. A.

Following this and as a result of it, the United States Housing Authority was created, and low-rent housing for low-income families thus moved beyond the first experimental stage. The Wagner-Steagall housing bill legislation in 1937 launched a long-range program of Federal aid to State and local governments and other local agencies for housing and slum clearance, and thus decentralized authority replaced the central control that had been necessary to carry out the original demonstration projects.

The growth of slum areas in our cities and the continuation of their existence have been due, at least in great part, to the following causes:

(a) Low-rent housing was usually regarded purely as a commercial enterprise, often without regard for its social aspects.

(b) Constantly changing character of neighborhoods due to shifting population.

(c) Lack of city plans and misuse of land with resulting high land values.

(d) Excessive taxation of dwellings.

(e) Lack of interest on the part of landlords in keeping dwelling houses in proper condition with resulting lack of interest on the part of tenants in keeping them neat.

Continued on following page
Housing

Continued from preceding page

(f) Lack of enforcement of legislation or lack of legislation to prevent worn-out and insanitary buildings being used for dwellings.

The achievements in low-rent housing, which are the direct result of this P. W. A. demonstration program, may be stated as follows:

(a) An appreciable rise in the standard of accommodations.

(b) A beneficial reduction in land coverage.

(c) Improved planning to provide the maximum of light and air in all rooms, and adequate space between buildings with provision of areas for recreation and community activities.

(d) Provision for training of management personnel to function in the interest of both owners and tenants.

This first step toward providing decent living conditions for the low-income group naturally was not carried out perfectly and there was much bitter criticism and opposition from various sources. The mistakes, the experience, and the criticism have resulted in much valuable information which should be of benefit to future housing projects. Some of the principles learned are as follows:

(a) Public housing should be made available to most of those who now occupy slum areas and should be based on minimum standards even though this means changes in many of the tradition standards of the building industry. The minimum standards should be made progressively better as the incomes of the tenants increase until the maximum is reached at the point where subsidized housing should stop and private industry should begin.

(b) Every facility for the promotion of cleanliness, the maintenance of health, and the amenities of family life should be provided, but without luxury.

(c) The standards of construction and equipment should be lowered in the matter of technical perfection to conform to the standards used by private investment builders.

At the time the P. W. A. work was taken over by the United States Housing Authority, 30 of the 52 housing projects had been completed and the contracts had been awarded on the remaining 22. Under the provisions of the United States Housing Act these 52 projects had to be sold or leased to the local municipal housing authorities, and by the close of 1938, 27 projects had been leased to local authorities, and the 2 Puerto Rico projects had been turned over to the Puerto Rico Reconstruction Administration by an executive order of March 12, 1938.

By December 31, 1938, all 52 of the projects were available for occupancy but 6 were still in the tenant-selection stage. Of those occupied, all had long lists of eligible tenants waiting to occupy any available space.

The record on rent collections is a confirmation of the fact that public housing for low-income families can be operated on a business basis. Total rent arrears for all projects up to December 31, 1938, were less than one-sixth of 1 percent.

It is now a proved fact that public housing can be produced cheaply and can be brought within the reach of the under-privileged who now live in slum areas, and that its cost to the Federal Government, States, and cities is perhaps less than for any comparable social and economic improvement.

The illustrations on these two pages give five different unit plans which have been used in these P. W. A. housing projects.
An area of 15\(\frac{1}{2}\) acres in the slum district of Omaha, Nebraska, was selected for the erection of the 284-unit low-rent Logan Fontenelle homes development. This site cost $221,285, or 37 cents a square foot, including the old slum dwellings. The development is divided into 2 separate sections, one for white and the other for negro occupancy. The new buildings accommodate an average of 72 rooms to the acre and cover about 22 percent of the land area.

The structures are fireproof and consist of a series of 1- and 2-story row houses, and 2-story flat buildings planned for maximum light, air, sunshine, and recreational areas. The 1,132 rooms provided by this project are arranged into 284 apartment units, 15 percent of which are 2-room, 48 percent 3-room, 24 percent 4-room, and 13 percent 5-room family-dwelling units.

All of the apartments are supplied with heat, hot and cold water, electricity for light and refrigeration, and gas for cooking. The average monthly rent, including charges for these utilities, is $6.78 per room. The bare shelter rent, which includes water only, is computed as being valued at an average of $4.66 a room per month. The date of first occupancy was March 1, 1938. The project was fully financed with P. W. A. funds and completed at a construction cost of approximately $1,455,759 which averages 52\(\frac{1}{2}\) cents per cubic foot for the 2,775,000 cubic feet contained in the structures. It also is equivalent to a construction cost of $1,286 per room and $5,126 for each apartment unit. The total cost of the development, including land and miscellaneous charges, was $1,785,300, which is an average of $1,577 a room and $6,286 a family dwelling unit.
The 35 acres of land purchased for this project cost $599,989, which is equivalent to 39 cents a square foot. Many of the streets which serve the project are "dead end" streets and may be safely used for playground areas.

The structures are fireproof and consist of a series of 3-story apartment buildings and 2-story row houses which cover 19 percent of the site area and contain 94 rooms to the acre. The 925 family-dwelling units are arranged so that 5 percent are 2-room, 46 percent 3-room, 42 percent 4-room, and 7 percent 5-room apartments, with a total of 3,313 rooms in the development.

The monthly shelter rent averages $5.39 per room. The actual total rent, which includes all charges for heat, hot and cold water, electricity for light and refrigeration, and gas for cooking, averages $7.25 a room per month. The first group of tenants moved in on February 1, 1938.

The buildings have a volume of 8,740,700 cubic feet. The project was fully financed with a P. W. A. allotment of funds and completed at a construction cost of approximately $4,609,514. This is equal to 53 cents per cubic foot and to an average room cost of $1,391 and $4,983 a family-dwelling unit.

The total project cost, including land, was approximately $5,556,900, indicating a gross room cost of $1,678 and a total cost per family dwelling unit of $6,007.
Parkside, Detroit, Michigan

Parkside, a low-rent housing development in Detroit, Michigan, was built on an undeveloped 31-acre plot adjacent to Chandler Park. The site cost $170,000, or about 17 cents a square foot. The buildings, which are fireproof, consist of 2- and 3-story apartments and 2-story row houses, which cover 25 percent of the site area and provide an average of 93 rooms to the acre.

There are 3,025 rooms, arranged to provide 775 family-dwelling units of which 6 percent are 2-room, 33 percent 3-room, 51 percent 4-room, and 10 percent 5-room units. All apartments are supplied with heat, hot and cold water, and electricity for light, cooking, and refrigeration. Rent, including these utility charges, averages $7.03 a room per month. The shelter-rent computation, which includes cold water only, is $5.07 a room per month. The project was first tenanted on October 15, 1938.

The buildings have a volume of 7,629,200 cubic feet and a gross floor area of 719,766 square feet. The project was completed at a construction cost of approximately $3,756,039, which is equal to 49 cents a cubic foot, and an average of $1,242 a room and $4,847 a family-dwelling unit. It was fully financed with P. W. A. funds at a cost of $4,179,200, including land, construction, and miscellaneous items. This indicates a total cost of approximately $1,381 a room and $5,392 a family-dwelling unit.
A slum area of 22½ acres in the city of Cleveland, Ohio, was cleared for the construction of the low-rent development known as Lakeview Terrace Apartments. The site was purchased at a cost of $521,593, the equivalent of 69 cents a square foot.

The development consists of 2- and 3-story apartment buildings and 2- and 3-story row houses which cover about 26 percent of the site area and contain an average of 104 rooms per acre. Included in the project are 118 garages. All structures are fireproof.

There are 2,311 rooms divided into 620 apartments of which 44 percent are 3-room, 43 percent 4-room, and 13 percent 5-room suites. Each apartment is provided with a kitchen, as well as all utility services for cooking, heat, hot and cold water, light, and refrigeration. The average shelter rent is $6.19 a room per month. The actual monthly rent, including all utility charges, averages $7.37 a room per month. The development was first tenanted on October 16, 1937.

The buildings contain a volume of 6,316,000 cubic feet and were completed at a construction cost of approximately $2,968,365, which is equal to 47 cents a cubic foot, and an average of $1,284 a room, and $4,787 for each family-dwelling unit. The total project cost, including land, was approximately $3,685,700, equivalent to an average room cost of $1,595 and to a family-dwelling unit cost of $5,944.
One of the largest of the low-rent housing projects fully financed with P. W. A. funds is the development erected in Boston, known as Old Harbor Village. It occupies a former unused site of 31 acres, the purchase price of which was $517,133, or 40 cents a square foot. The buildings erected provide an average of 126 rooms to the acre and cover 23 percent of the land area.

The development consists of a series of 3-story apartment buildings and 2-story row houses, all of which are fireproof. The structures provide a total of 3,902 rooms, arranged into 1,016 family-dwelling units, divided so that 41 percent are 3-room, 40 percent 4-room, 16 percent 5-room, and 3 percent 6-room units.

A charge of $4.88 a room per month is the average base shelter rental, which does not include any utilities except cold water. The actual rent paid averages $6.68 a room per month, which includes heat, hot water, and electricity for light, cooking, and refrigeration. The buildings were first occupied on May 1, 1938.

The structures contain 10,167,700 cubic feet and were constructed at a cost of $5,394,317, or 53 cents a cubic foot. The construction cost per room averaged $1,382 and was $5,309 per family-dwelling unit.

The entire development cost $6,273,500, including land, construction, and miscellaneous items, which averages $1,608 a room and $6,174 a family-dwelling unit.
A vacant site of approximately 22 acres was purchased for the Cedar Springs Place low-rent housing development in Dallas, Texas. It cost $66,149, or about 7 cents per square foot. The structures cover 15 percent of the land area and contain an average of 27 rooms to the acre. The development consists of a series of 2-story apartment buildings and 1-story row houses with no basements. All buildings are fireproof.

There are 598 rooms divided into 181 family-dwelling units, approximately 13 percent of which are arranged in 2-room, 51 percent in 3-room, 28 percent in 4-room, and 8 percent in 5-room units.

The average shelter rent, including water, is computed at $6.77 a room. The average actual rent paid is $7.92 a room per month, which includes all charges for shelter, heat, hot and cold water, electricity for light and refrigeration, and gas for cooking. The date of first occupancy was September 18, 1937.

The structures contain a volume of 1,543,000 cubic feet and cost approximately $823,303. This is equivalent to 54 cents per cubic foot, and an average of $1,377 a room and $4,548 a family-dwelling unit.

The project was fully financed with P. W. A. funds, including cost of land, construction, and miscellaneous items, which cost a total of $945,900, or an average of $1,580 a room and $5,225 a family-dwelling unit.
Williamsburg Houses, the "city-within-a-city" slum-clearance project, erected in the heart of the historic Williamsburg section of the borough of Brooklyn, city of New York, is one of the largest low-rent housing projects undertaken in the United States. It provides homes for 1,622 families in the low-wage brackets. This project occupies 20.2 acres and supplants twelve of the most blighted and congested slum blocks in Greater New York City.

The 5,719 rooms which make up the Williamsburg project are located in 20 fireproof, 4-story walk-up apartment buildings. These structures, covering about 32 percent of the 20.2-acre site, are set at a slight angle from true north and south giving each building a maximum of recreation space, ventilation, sunlight, and the benefit of prevailing summer breezes.

Each building has a full basement providing space for individual laundries and drying rooms, nurseries, social units, and craft rooms. There are, in all, seven social units, seven craft rooms, and a nursery school occupying 5,700 square feet. Approximately 3 percent of the 1,622 apartment units are

Continued on following page
2-room, 47 percent 3-room, 46 percent 4-room, and 4 percent 5-room units. All rooms open on landscaped courts and park areas. Within the project 49 stores and shops have been leased to private individuals.

The development was first tenanted on September 30, 1937. The average shelter rent, which includes cold water only, is computed on the basis of $6.52 a room per month. The total actual rent averages $8.47 a room per month, which includes all charges for heat, hot and cold water, and electricity for light, cooking, and refrigeration.

The 20.2-acre site, including a half-acre donation by the city, cost $3,745,722. It accommodates 226 rooms to the acre. The structures were completed at a construction cost of approximately $8,708,228, or 57 cents a cubic foot, for a total of 15,230,100 cubic feet. This construction cost is equal to $1,523 a room and $5,363 an apartment unit. The entire development, including land and miscellaneous costs, was fully financed with P. W. A. funds. The total project cost was $12,912,600, which approximates a total cost of $2,258 a room and $7,961 a family-dwelling unit.
Smithfield Court is a low-rental housing development for negro occupancy erected in the city of Birmingham, Alabama, fully financed with P. W. A. funds. A site of 22 acres on which were located some of the city's worst slum dwellings, was purchased at a cost of $458,600 or 48 cents a square foot.

After demolition of the dilapidated dwellings, a group of fireproof structures was erected covering 27 percent of the land area and accommodating an average of 58 rooms to the acre. The development consists of a series of 1- and 2-story row houses and includes a community building. It provides 1,638 rooms divided into 540 family-dwelling units of which 34 percent are 2-room, 48 percent 3-room, 11 percent 4-room, and 7 percent 5-room units.

The monthly shelter rent, which includes water only, is computed on the basis of an average of $4.36 per room. The actual rent averages $4.84 a room per month and includes electricity for light and refrigeration. Tenants first occupied the premises on February 16, 1938. The structures have a volume of 4,430,000 cubic feet. The cost of construction was approximately 40 cents a cubic foot, or a total of $1,786,648. The average room cost was $1,091 and $3,309 for each family-dwelling unit. The entire development cost was $2,415,000 including land, construction, and miscellaneous items. This is equivalent to an average total cost per room of $1,474 and of $4,472 a family-dwelling unit.
Liberty Square, Miami, Florida

Liberty Square is a low-rent housing development for negro occupancy in the city of Miami, Florida. It is located on a 63-acre site (formerly vacant) which was purchased at a cost of $12,000, less than one-half cent per square foot. The structures erected on the plot cover 25 percent of its area and provide an average of 14 rooms to the acre.

The buildings are fireproof and consist of a series of 1- and 2-story row houses containing 876 rooms. Of the 243 family-dwelling units provided, 12 percent are arranged in 2-room, 43 percent in 3-room, 24 percent in 4-room, and 21 percent in 5-room units.

A rental of $3.24 a room is the basic shelter charge per month. The actual rent averages $3.44 a room per month, which includes water only; all other utilities are purchased directly by the tenants from the public-utility company. The first tenants took occupancy on February 6, 1937.

The structures contain 2,275,400 cubic feet and cost $839,726 to construct, which is equivalent to 39½ cents a cubic foot, and to an average of $959 a room, and $3,709 a family-dwelling unit.

The development, which was fully financed with P. W. A. funds, cost $908,500 including land, construction, and miscellaneous items. This indicates a total average cost of $1,025 a room and a family-dwelling unit cost of $3,738.
The P. W. A. made an allotment of funds for the erection of low-rent housing in the Virgin Islands sufficient to allow for the development of three such projects. These funds financed the following:

(a) Bassin Triangle erected on a vacant site of 5 acres at Christiansted, St. Croix Island. The site cost $2,000 and was improved with 1-story row houses which provide 54 rooms divided into 30 family-dwelling units. The structures cover about 5 percent of the area of the site and average 10 rooms per acre.

(b) Marley Homes at Frederiksted, St. Croix Island. An undeveloped plot of 17 acres, dedicated by the municipality, is the site of this development. A series of 1-story row houses provide 70 rooms arranged in 38 family-dwelling units. The structures cover 2½ percent of the site area.

(c) H. H. Berg Homes, St. Thomas, St. Thomas Island, utilizes a former slum site of 14 acres dedicated by the municipality. The project provides 106 rooms divided into 58 family-dwelling units. The structures cover 5½ percent of the site area and average 10 rooms to the acre.

The 3 developments provide 230 rooms arranged into 126 family-dwelling units. The structures are occupied by natives of the Virgin Islands who pay an average monthly shelter rent of $2.40 a room. September 1, 1937, was the date of first occupancy. All utilities except cisterns are purchased directly by the tenants.

The construction cost of these buildings averaged 21 cents a cubic foot. The total project cost for all three developments, including construction, land, and miscellaneous items, was $220,027, which indicates an average room cost of $957 and a family-dwelling cost of $1,746.

Photographs are of the H. H. Berg Homes development at St. Thomas.
The authors are greatly indebted to Mr. John M. Carmody, Administrator of the Federal Works Agency, for his authorization, assistance, and encouragement in this publication, and also to Mr. E. W. Clark, Acting Commissioner of the Public Works Administration, and Mr. W. E. Reynolds, Commissioner of the Public Buildings Administration, and their staffs, for their cordial cooperation.

The authors appreciate the cooperation and approval given for this publication by the Congressional Joint Committee on Printing.

They are also indebted for the cooperation of the heads of the various Federal Departments, Bureaus, and Divisions, especially the Secretary of State, the Secretary of the Treasury, the Secretary of War, the Attorney General, the Secretary of the Navy, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labor, and to the heads of the independent offices of the Architect of the Capitol, the Civil Aeronautics Authority, the Veterans' Administration, and the District of Columbia, and to the Federal Security Agency.

They appreciate the great interest taken by the many architects, engineers, owners, and publishers who have furnished information, drawings, and photographs.

The authors also wish to give credit and thanks to the members of their staff who helped in the compilation of the book, especially to the section chiefs of the authors' staff: Mr. R. L. Shape, Mr. A. K. Wilson, Mr. C. H. Pratt, Mr. C. L. Gaines, Jr., Mr. H. L. Kemp, Mr. J. M. Smith, and Mr. A. T. Kelley.
CHAPTER X

GENERAL STATISTICS

The following are original statistics, not heretofore published, compiled by the Committee on Architectural Surveys. Some of them were compiled for the Committee by the Bureau of Labor Statistics Division of Construction and Employment, of the Department of Labor. The statistics on schools were compiled by the Committee from the answers to questionnaires sent out by the Office of Education for the Committee.
ANALYSIS OF QUESTIONNAIRE SENT TO OWNERS

BY

THE COMMITTEE ON ARCHITECTURAL SURVEYS

The Committee sent a questionnaire to the owners of the completed Non-federal projects, exclusive of schools, which have been selected for consideration in the report. Replies were received from 773. It should be remembered that in many cases these owners had constructed several projects.

The first question asked if the owner considered that P. W. A. requirements and supervision had resulted in or brought about higher standards of planning, of design, of construction, and fairness in settlements of disputes and protests. Of 709 replies on planning, 73 percent stated that higher standards of planning had been procured; of 657 replies on design, 67 percent stated that higher standards of design had been obtained; of 699 replies on construction, 78 percent stated that higher standards of construction had been procured; and of 644 replies on fairness, 76 percent stated that more fairness had been procured in settlements of disputes and protests.

This indicates that it is the opinion of the majority of the owners that P. W. A. has improved and raised the standards in architecture above those which formerly existed for Non-federal public buildings. The questionnaire was sent with no discrimination to the owners of projects shown in the report and replies were received, sometimes with letters, not only from satisfied owners but also from the disgruntled, those opposed to the present Administration, and from those local municipal and State departments which have long had, and been satisfied with, their own designing staffs and have established their own standards.

The second question asked if the owner considered that the construction cost of its completed work was greater under P. W. A. than a similar building would have cost without P. W. A. assistance. Of 688 replies, 54 percent stated that the cost was greater.

In reply to a further question if this increased cost was due to labor, of 329 replies, 90 percent stated that it was. In reply to a question if this increased cost was due to materials, of 249 replies, 35 percent stated that it was. In reply to a further question if this increased cost was due to higher supervision, of 302 replies, 62 percent stated that it was. But, of those who had replied that the costs were less under the P. W. A. and were asked if this was due to higher supervision, of 72 replies, 96 percent stated that it was.

It will be noted that the owners were nearly equally divided on the question of whether the buildings cost more under the P. W. A. This is surprising, as one would expect that a greater proportion of the owners would have thought the costs were more under the P. W. A., due to the fact that it insists on a high standard of wages being paid labor and upon less working hours than are generally required.

It is interesting to note that better plans, the requirements of competition, and the stricter specifications required by P. W. A., were not attributed as the cause of any presumed increased cost by a greater number of owners, in spite of the fact that many of them and their architects were not permitted to specify the particular things they wished without regard to competition.

It was expected, also, that the proportion would be much greater of owners who would blame higher cost on the strict supervision given by P. W. A. The architects and the owners were generally not accustomed to the restrictions of strict supervision by others. It is natural, therefore, that some of the owners would attribute higher cost to this. But it is most interesting to note that a number equal to one-third of those replying attributed this supervision as the cause of the cost being less.

An analysis of the questionnaire by regions shows that in the opinions of the owners the changes brought about by P. W. A. requirements and supervision have taken place from a greater to a lesser extent in the order named, in regions 5, 4, 6, 2, 3, 1, 7 in producing better planning; in regions 3, 5, 6, 4, 7, 1, 2 in producing better design; in regions 3, 5, 6, 7, 4, 2, 1, 7 in producing better construction; in regions 3, 6, 5, 4, 2, 1, 7 in obtaining fairer settlements of disputes and protests.

The opinions of the owners, 369 against 319, that P. W. A. projects have cost more than similar projects would have cost otherwise, varies in the regions in the following order, as named, regions 1, 3, 7, 2, 4, 5. Region 6 reported by 47.5 percent that the cost was lower.

The third question asked if, as a result of P. W. A. procedures, the fire-insurance costs and the maintenance costs had been greater or less. This question is supplementary to the second question in that it should show whether any increased costs had produced in the end any savings in operation. They answered, approximately 5 to 1, that the fire-insurance costs were less and that the maintenance costs were less. This is an outstanding demonstration of the achievement of the operations of the P. W. A. in construction.

The question was then asked if there had been better standards of competitive bidding. To this, 425 replied yes against 185. The answer to this question, together with the answer to the question that P. W. A. has brought about fairness in settlements of disputes and protests, is overwhelmingly in favor of P. W. A. procedure. It means a tremendous achievement to have an owner acknowledge that a Government organization has procured more fairness in the handling of disputes between owners and contractors, and contractors and subcontractors, and better competitive bidding than the owners had been able to secure in the past.
### TABLES OF STATISTICS

#### FEDERAL AND NON-FEDERAL PROJECTS AS OF DEC. 31, 1938

(Not Including 1938 Program)

<table>
<thead>
<tr>
<th></th>
<th>Federal</th>
<th>Non-Federal</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Number of projects</td>
<td>15,976</td>
<td>10,498</td>
<td>26,474</td>
</tr>
<tr>
<td>2. Total estimated costs</td>
<td>$1,703,684,004</td>
<td>$2,757,086,766</td>
<td>$4,460,770,770</td>
</tr>
<tr>
<td>3. Total allotments</td>
<td>$1,703,684,004</td>
<td>$1,652,774,328</td>
<td>$3,356,458,332</td>
</tr>
<tr>
<td>4. Land costs</td>
<td>(approx.) $25,938,400</td>
<td>$34,000,000</td>
<td>$59,938,400</td>
</tr>
<tr>
<td>5. Number of buildings</td>
<td>(approx.) 6,280</td>
<td>10,970</td>
<td>17,250</td>
</tr>
<tr>
<td>6. Construction cost of buildings</td>
<td>(approx.) $321,289,000</td>
<td>$1,100,070,600</td>
<td>$1,421,359,600</td>
</tr>
<tr>
<td>7. P. W. A. overhead costs—combined Federal and Non-federal</td>
<td>(approx.) $89,144,361</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Number of offices of architects and engineers</td>
<td>(approx.) 210</td>
<td>4,380</td>
<td>4,590</td>
</tr>
<tr>
<td>9. Cost of private architects and engineers</td>
<td>(approx.) $2,294,000</td>
<td>$124,068,900</td>
<td>$126,362,900</td>
</tr>
<tr>
<td>10. Cost of direct labor on buildings</td>
<td>(approx.) $97,500,400</td>
<td>$283,367,700</td>
<td>$380,868,100</td>
</tr>
<tr>
<td>11. Cost of indirect labor on buildings</td>
<td>(approx.) $105,506,200</td>
<td>$387,176,900</td>
<td>$492,683,100</td>
</tr>
<tr>
<td>12. Cost of direct labor on all projects</td>
<td>(approx.) $563,819,000</td>
<td>$625,730,000</td>
<td>$1,189,549,000</td>
</tr>
<tr>
<td>13. Cost of indirect labor on all projects</td>
<td>(approx.) $705,737,400</td>
<td>$1,188,616,800</td>
<td>$1,994,354,200</td>
</tr>
<tr>
<td>14. Cost of materials on buildings</td>
<td>(approx.) $151,558,000</td>
<td>$565,434,500</td>
<td>$716,992,500</td>
</tr>
<tr>
<td>15. Cost of materials on all projects</td>
<td>(approx.) $845,079,000</td>
<td>$1,185,297,000</td>
<td>$2,030,376,000</td>
</tr>
<tr>
<td>16. Maximum cost to Government on buildings</td>
<td>(approx.) $321,289,000</td>
<td>$440,635,300</td>
<td>$761,924,300</td>
</tr>
</tbody>
</table>

---

1 51 Federal low-cost housing projects are included in this figure.
2 $136,669,759 for 51 low-cost housing projects is included in these figures.
3 This item is as of September 30, 1939.

**Note:** Item numbers, hereinafter, are referenced to item numbers in this table.

### DATA ON BUILDINGS

<table>
<thead>
<tr>
<th>Building projects:</th>
<th>1933–37</th>
<th>1938</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total of all projects (including buildings)</td>
<td>26,474</td>
<td>8,098</td>
</tr>
<tr>
<td>Total building projects</td>
<td>8,259</td>
<td>4,425</td>
</tr>
<tr>
<td>Federal building projects</td>
<td>2,541</td>
<td>690</td>
</tr>
<tr>
<td>Non-federal projects</td>
<td>5,718</td>
<td>3,735</td>
</tr>
<tr>
<td>Buildings (approx.):</td>
<td>17,250</td>
<td>10,350</td>
</tr>
<tr>
<td>Total number of buildings</td>
<td>15,095</td>
<td>9,218</td>
</tr>
<tr>
<td>Buildings in Federal building projects</td>
<td>6,131</td>
<td>3,285</td>
</tr>
<tr>
<td>Buildings in Non-federal building projects</td>
<td>8,964</td>
<td>5,933</td>
</tr>
<tr>
<td>Total buildings in other projects</td>
<td>2,151</td>
<td>1,132</td>
</tr>
<tr>
<td>Federal buildings in other projects</td>
<td>145</td>
<td>14</td>
</tr>
<tr>
<td>Non-federal buildings in other projects</td>
<td>2,006</td>
<td>1,118</td>
</tr>
</tbody>
</table>

Some building projects consist of more than one building and other projects such as sewer, water, power, and gas plants also contain buildings. The approximate number of these is included in the above tabulation.
### CONSTRUCTION COST AND NUMBER OF BUILDINGS ON FEDERAL BUILDING CONSTRUCTION PROJECTS FINANCED FROM P. W. A. FUNDS (EXCLUSIVE OF 1938 PROGRAM)

<table>
<thead>
<tr>
<th>Type of building</th>
<th>Construction cost</th>
<th>Number of buildings</th>
<th>Number of buildings by cost</th>
<th>Percent of number of buildings completed (cost basis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All types (except sewer, gas, water, power)</td>
<td>$291,606,024</td>
<td>6,131</td>
<td>5,636 459 21 15</td>
<td>99.8</td>
</tr>
<tr>
<td>Educational buildings</td>
<td>10,460,927</td>
<td>172</td>
<td>151 16 4 1</td>
<td>98.1</td>
</tr>
<tr>
<td>Hospitals and institutions</td>
<td>17,026,400</td>
<td>181</td>
<td>149 28 2 2</td>
<td>100.0</td>
</tr>
<tr>
<td>Penal buildings</td>
<td>588,808</td>
<td>21</td>
<td>19 2</td>
<td>100.0</td>
</tr>
<tr>
<td>Social and recreational buildings</td>
<td>603,628</td>
<td>11</td>
<td>10</td>
<td>100.0</td>
</tr>
<tr>
<td>Institutional residential buildings 1</td>
<td>28,348,156</td>
<td>2,076</td>
<td>2,047 27 2</td>
<td>100.0</td>
</tr>
<tr>
<td>P. W. A. Housing Division</td>
<td>103,831,606</td>
<td>1,738</td>
<td>1,555 183</td>
<td>100.0</td>
</tr>
<tr>
<td>Office and administration buildings</td>
<td>46,716,250</td>
<td>149</td>
<td>114 22 3 10</td>
<td>97.9</td>
</tr>
<tr>
<td>Warehouses, laboratories</td>
<td>6,909,245</td>
<td>153</td>
<td>141 10 2</td>
<td>160.0</td>
</tr>
<tr>
<td>Barracks</td>
<td>7,787,351</td>
<td>71</td>
<td>39 32</td>
<td>98.6</td>
</tr>
<tr>
<td>Hangars</td>
<td>4,270,528</td>
<td>50</td>
<td>35 15</td>
<td>100.0</td>
</tr>
<tr>
<td>Post offices</td>
<td>43,080,726</td>
<td>368</td>
<td>281 84 4</td>
<td>99.5</td>
</tr>
<tr>
<td>Lighthouses</td>
<td>1,277,962</td>
<td>22</td>
<td>17 5</td>
<td>100.0</td>
</tr>
<tr>
<td>Miscellaneous buildings</td>
<td>20,698,437</td>
<td>1,119</td>
<td>1,078 38 3</td>
<td>99.6</td>
</tr>
</tbody>
</table>

1 Includes homes for doctors and caretakers, officers’ quarters, and homes in various institutional projects.

### CONSTRUCTION COST AND NUMBER OF BUILDINGS ON NON-FEDERAL BUILDING CONSTRUCTION PROJECTS FINANCED FROM P. W. A. FUNDS (EXCLUSIVE OF 1938 PROGRAM)

<table>
<thead>
<tr>
<th>Type of building</th>
<th>Construction cost</th>
<th>Number of buildings</th>
<th>Number of buildings by cost</th>
<th>Percent of number of buildings completed (cost basis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All types (except sewer, gas, water, power)</td>
<td>$1,024,940,594</td>
<td>8,964</td>
<td>6,467 2,216 186</td>
<td>95</td>
</tr>
<tr>
<td>Educational libraries</td>
<td>592,441,566</td>
<td>6,279</td>
<td>4,754 1,372 101</td>
<td>94.5</td>
</tr>
<tr>
<td>Public libraries</td>
<td>4,153,559</td>
<td>65</td>
<td>53 12</td>
<td>95.4</td>
</tr>
<tr>
<td>Municipal auditoriums and armories</td>
<td>20,109,010</td>
<td>85</td>
<td>58 19</td>
<td>91.8</td>
</tr>
<tr>
<td>Courthouses and city halls</td>
<td>49,116,886</td>
<td>323</td>
<td>212 100</td>
<td>96.3</td>
</tr>
<tr>
<td>Hospitals and Institutions</td>
<td>193,817,256</td>
<td>874</td>
<td>397 416</td>
<td>86.8</td>
</tr>
<tr>
<td>Penal buildings 1</td>
<td>27,774,556</td>
<td>86</td>
<td>52 22</td>
<td>96.3</td>
</tr>
<tr>
<td>Social and recreational buildings</td>
<td>21,423,820</td>
<td>387</td>
<td>345 40</td>
<td>97.7</td>
</tr>
<tr>
<td>Institutional residential buildings 2</td>
<td>1,690,521</td>
<td>35</td>
<td>32 3</td>
<td>100.0</td>
</tr>
<tr>
<td>Nonhousekeeping residential buildings 2</td>
<td>35,489,033</td>
<td>226</td>
<td>132 88</td>
<td>96.9</td>
</tr>
<tr>
<td>P. W. A. Housing Division, limited dividend (private)</td>
<td>10,897,516</td>
<td>143</td>
<td>117 26</td>
<td>100.0</td>
</tr>
<tr>
<td>Office and administration buildings</td>
<td>20,328,797</td>
<td>111</td>
<td>72 31</td>
<td>95.5</td>
</tr>
<tr>
<td>Warehouses, laboratories</td>
<td>5,858,829</td>
<td>34</td>
<td>24 6</td>
<td>97.1</td>
</tr>
<tr>
<td>Hangars</td>
<td>462,172</td>
<td>4</td>
<td>3 1</td>
<td>75.0</td>
</tr>
<tr>
<td>State capitols—additions</td>
<td>960,012</td>
<td>4</td>
<td>2 1</td>
<td>100.0</td>
</tr>
<tr>
<td>State capitols—new</td>
<td>2,006,137</td>
<td>1</td>
<td></td>
<td>100.0</td>
</tr>
<tr>
<td>Incinerators 4</td>
<td>2,312,962</td>
<td>18</td>
<td>10 7</td>
<td>100.0</td>
</tr>
<tr>
<td>Miscellaneous buildings</td>
<td>36,997,982</td>
<td>289</td>
<td>204 72</td>
<td>96.2</td>
</tr>
</tbody>
</table>

1 Courthouses which included jails are classified under courthouses.
2 Includes homes for doctors, caretakers, and homes in institutional projects.
3 Dormitories and nurses homes.
4 Not in connection with sewage-disposal systems.

### General Statistics

#### Construction Cost and Number of Educational Buildings on Federal Projects Financed from P. W. A. Funds (exclusive of 1938 Program)

<table>
<thead>
<tr>
<th>Type of building</th>
<th>Construction cost</th>
<th>Number of buildings</th>
<th>Number of buildings by cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Under $100,000</td>
</tr>
<tr>
<td>Educational buildings</td>
<td>$10,460,927</td>
<td>172</td>
<td>151</td>
</tr>
<tr>
<td>Secondary schools—elementary and high schools</td>
<td>5,898,142</td>
<td>149</td>
<td>137</td>
</tr>
<tr>
<td>College and university buildings</td>
<td>2,534,294</td>
<td>16</td>
<td>10</td>
</tr>
<tr>
<td>Other educational buildings 1</td>
<td>2,028,491</td>
<td>7</td>
<td>4</td>
</tr>
</tbody>
</table>

1 This group is made up of such buildings as school libraries, museums, student-activity buildings, etc.

#### Construction Cost and Number of Educational Buildings on Non-Federal Projects Financed from P. W. A. Funds (exclusive of 1938 Program)

<table>
<thead>
<tr>
<th>Type of building</th>
<th>Construction cost</th>
<th>Number of buildings</th>
<th>Number of buildings by cost</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Under $100,000</td>
</tr>
<tr>
<td>Educational buildings</td>
<td>$592,441,566</td>
<td>6,279</td>
<td>4,754</td>
</tr>
<tr>
<td>Secondary schools—elementary and high schools</td>
<td>540,081,025</td>
<td>5,989</td>
<td>4,597</td>
</tr>
<tr>
<td>College and university buildings</td>
<td>44,764,142</td>
<td>233</td>
<td>119</td>
</tr>
<tr>
<td>Other educational buildings 1</td>
<td>7,596,399</td>
<td>57</td>
<td>38</td>
</tr>
</tbody>
</table>

1 This group is made up of such buildings as school libraries, museums, student-activity buildings, auditoriums, etc., which contain no classrooms. Stadiums and gymnasiums are classified as "Recreational buildings" in the general classification.

**Note:** Above tables prepared in the Bureau of Labor Statistics Division of Construction and Public Employment for the Committee on Architectural Surveys.

In addition to the buildings listed under the preceding building projects there are other projects, both Federal and Non-federal, which include some buildings, the cost of which is included in the total cost of buildings and in the number of buildings as given in the Tables of Statistics. These building costs are approximately as follows:

<table>
<thead>
<tr>
<th>Projects:</th>
<th>Federal</th>
<th>Non-federal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewer</td>
<td>$51,000</td>
<td>$14,149,599</td>
</tr>
<tr>
<td>Water</td>
<td>113,300</td>
<td>6,563,042</td>
</tr>
<tr>
<td>Power plants</td>
<td>29,500,000</td>
<td>54,174,324</td>
</tr>
<tr>
<td>Gas plants</td>
<td>18,700</td>
<td>243,018</td>
</tr>
<tr>
<td>Total</td>
<td>29,683,000</td>
<td>75,129,983</td>
</tr>
</tbody>
</table>

### Secondary Schools

Schools, not including colleges and universities, constitute not only the greatest in number of building projects for which allotments were made but also the largest item of cost. The construction cost of school buildings is 38.4 percent of all building-construction costs. The following data include schools under both Federal and Non-federal projects:

| Number of school projects | 4,177 |
| Number of schools         | 6,138 |

Estimated project costs: $580,784,835
Estimated cost of school buildings: $545,979,167
Loan allotments: $59,196,821
Grant allotments: $232,043,590
On site, salaries and wages to date (estimated): $140,909,632
Off site, salaries and wages to date (estimated): $192,021,840
Material cost to date (estimated): $280,383,059
### Non-Federal Costs and Percentages Pertaining to All Programs through June 1938

(Exclusive of 1938 Program)

<table>
<thead>
<tr>
<th>Programs</th>
<th>Estimated Costs</th>
<th>Percent of Grand Total</th>
<th>1</th>
<th>2</th>
<th>3 (4-2)</th>
<th>4 (3+2)</th>
<th>5 (1-4)</th>
<th>Estimated Cost to Complete Projects</th>
<th>Percent of Estimated Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. I. R. A.</td>
<td>$1,309,594,139</td>
<td>47.5</td>
<td></td>
<td></td>
<td>$1,020,820,336</td>
<td>77.9</td>
<td>$146,185,415</td>
<td>$1167,005,751</td>
<td>89.1</td>
</tr>
<tr>
<td>1935 and supplement</td>
<td>792,878,629</td>
<td>28.8</td>
<td></td>
<td></td>
<td>564,028,034</td>
<td>71.1</td>
<td>139,600,556</td>
<td>17.6</td>
<td>703,628,590</td>
</tr>
<tr>
<td>1936</td>
<td>393,486,801</td>
<td>14.3</td>
<td></td>
<td></td>
<td>255,191,191</td>
<td>64.9</td>
<td>46,620,094</td>
<td>11.8</td>
<td>301,811,285</td>
</tr>
<tr>
<td>1937</td>
<td>261,127,197</td>
<td>9.4</td>
<td></td>
<td></td>
<td>61,753,918</td>
<td>23.7</td>
<td>31,667,760</td>
<td>12.1</td>
<td>93,421,678</td>
</tr>
<tr>
<td>Grand total</td>
<td>2,757,086,766</td>
<td>100.0</td>
<td></td>
<td></td>
<td>1,901,793,479</td>
<td>69.0</td>
<td>364,073,825</td>
<td>13.2</td>
<td>2,265,867,304</td>
</tr>
</tbody>
</table>

Note.—The percentages in the first column and the grand total percentages relate to the grand total estimated costs. Other percentages relate to the total estimated costs of the respective programs.

#### Architects and Engineers Employed on Projects

*(to December 31, 1938)*

**ITEM 8**

<table>
<thead>
<tr>
<th>Offices</th>
<th></th>
<th>Total</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>210</td>
<td>$2,294,000</td>
<td>$11,000</td>
</tr>
<tr>
<td>Non-federal</td>
<td>4,380</td>
<td>124,068,900</td>
<td>28,350</td>
</tr>
</tbody>
</table>

These payments per office appear to be excessive, but many offices had more than one project, some having as many as 15 to 20.

#### Labor and Material Costs on Buildings

*(to December 31, 1938)*

**ITEM 10**

| Federal | $97,500,400 |
| Non-federal | 283,367,700 |
| **Total** | 380,868,100 |

**ITEM 11**

| Federal | $105,506,227 |
| Non-federal | 387,176,878 |

**ITEM 14**

| Federal | $151,557,920 |
| Non-federal | 565,434,540 |
| **Total** | 716,992,460 |

The Federal buildings are 99.6 percent complete, therefore the above labor and material costs on Federal work approach the final cost.

When all Non-federal buildings are completed, the costs will be distributed as follows:

<table>
<thead>
<tr>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labor on site</td>
</tr>
<tr>
<td>Material</td>
</tr>
<tr>
<td>Overhead and profit</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

The indirect or off-site labor cost on the completed Non-federal buildings will be approximately $410,202,479.
The National Industrial Recovery Act, approved June 16, 1933, provided, among other things, for giving aid to States, municipalities, and other public bodies through the medium of a loan or grant. The loans were made by the P. W. A., purchasing their bonds at par with interest at 4 percent per annum, or on a basis to yield 4 percent per annum.

The funds provided through the above act and a subsequent act (Emergency Appropriation Act, fiscal year 1935) permitted the purchasing of $448,404,895.66 securities from various States, municipalities, and other public bodies. By virtue of the Emergency Appropriation Act, fiscal year 1935, the Reconstruction Finance Corporation was authorized to purchase from the P. W. A. the securities which it had acquired or would acquire, with the provision that the R. F. C. could not hold any one time bonds in excess of $250,000,000. The P. W. A. was authorized to purchase additional bonds with the funds received from the sale of the securities to the R. F. C. This in reality created a revolving fund or additional loan fund to such an extent that by selling approximately $400,000,000 to the Reconstruction Finance Corporation, the P. W. A. was able to purchase additional bonds from other owners, thereby permitting further allotments to materially aid the States, municipalities, and other public bodies. During the years of 1936 and 1937, the Congress passed legislation making it possible to use up to $359,000,000 of the revolving fund for further grants.

To December 31, 1938, the P. W. A. has purchased $694,278,348.01 in bonds, representing 2,894 issues, an average loan of $240,000 to each. These securities were purchased from every State, or municipalities in the State, and nearly all the possessions of the Union.

It was not possible to sell all the securities to the Reconstruction Finance Corporation as certain ones had to be canceled in lieu of paying cash grant, the amount so canceled being $10,583,577.46. Other bonds in the amount of $8,043,030.90 matured before being sold. The P. W. A. purchased as part of the above total $10,142,402.37 securities or construction of Limited Dividend Housing Projects.

Also included in the total bonds purchased are $200,974,500 railroad bonds, all of which have long since been matured or sold to the Reconstruction Finance Corporation.

The total proceeds from the sale of securities, going to the revolving fund, is $591,698,354.06, $591,008,808.28 from the Reconstruction Finance Corporation, and $689,545.78 from others (third party sales).

The amount of interest collected on these securities, which has been transferred to the Treasury, is $18,278,438.48.

### 1933-37 Programs

**DATA ON PRINCIPAL TYPES OF PROJECTS**

Streets and highways comprise the greatest number of projects, whereas building projects have the largest total allotments. Educational building projects are included in the total number of building projects. Following is a table of comparisons, and the figures given include both Federal and Non-federal projects:

<table>
<thead>
<tr>
<th>Projects Type</th>
<th>Number of projects</th>
<th>Allotments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total building projects (including educational)</td>
<td>8,259</td>
<td>$858,177,678</td>
</tr>
<tr>
<td>Educational building projects</td>
<td>4,661</td>
<td>366,317,764</td>
</tr>
<tr>
<td>Streets and highways projects</td>
<td>10,808</td>
<td>685,674,021</td>
</tr>
</tbody>
</table>

**DISTRIBUTION OF GREATEST NUMBER AND AMOUNT OF ALLOTMENTS (1933-37 Programs)**

Region No. 1, which includes the New England States and New York, New Jersey, Pennsylvania, Delaware, and Maryland, received both the greatest number of Non-federal allotments and the largest in amount. The number of allotments was 2,102 and the amount $469,438,089.

The six States which received the largest number of Non-federal allotments and the greatest in amounts are as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>Amount of allotment</th>
<th>Number of projects</th>
<th>Population (July 1, 1937)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>$287,843,599</td>
<td>529</td>
<td>12,959,000</td>
</tr>
<tr>
<td>Illinois</td>
<td>129,901,144</td>
<td>583</td>
<td>7,878,000</td>
</tr>
<tr>
<td>Texas</td>
<td>89,899,991</td>
<td>603</td>
<td>6,172,000</td>
</tr>
<tr>
<td>California</td>
<td>74,929,872</td>
<td>509</td>
<td>6,154,000</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>64,428,994</td>
<td>514</td>
<td>10,176,000</td>
</tr>
<tr>
<td>Ohio</td>
<td>54,829,886</td>
<td>558</td>
<td>6,733,000</td>
</tr>
</tbody>
</table>

It is interesting to note that the 1938 program has the amount of the allotments to the six States following in the same order as the population of these States. In the 1933 to 1937 programs this proportionate relation of allotment to population did not obtain.

### 1938 Program

**DATA ON PRINCIPAL TYPES OF PROJECTS**

Contrary to the previous programs, building projects in the 1938 program ("F" projects), comprise the greatest in number, followed by projects for streets and highways. Educational building projects are included in the total number of building projects. The following table of comparisons includes both Federal and Non-federal projects:

<table>
<thead>
<tr>
<th>Projects Type</th>
<th>Number of projects</th>
<th>Allotments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total building projects (including educational)</td>
<td>4,425</td>
<td>$445,547,532</td>
</tr>
<tr>
<td>Educational building projects</td>
<td>2,836</td>
<td>227,974,735</td>
</tr>
<tr>
<td>Streets and highways projects</td>
<td>619</td>
<td>107,236,286</td>
</tr>
</tbody>
</table>

**DISTRIBUTION OF GREATEST NUMBER AND AMOUNT OF ALLOTMENTS (1938 Program)**

Region No. 2, which includes Illinois, Indiana, Michigan, Ohio, West Virginia, and Wisconsin, received the greatest number of Non-federal allotments, 1,443, but region No. 1 received the largest in amount, $215,850,329.

The six States which received the largest number of Non-federal allotments and the greatest in amount are as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>Amount of allotment</th>
<th>Number of projects</th>
<th>Population (July 1, 1937)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New York</td>
<td>$71,152,925</td>
<td>233</td>
<td>12,959,000</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>60,567,326</td>
<td>272</td>
<td>10,176,000</td>
</tr>
<tr>
<td>Illinois</td>
<td>51,622,926</td>
<td>228</td>
<td>7,878,000</td>
</tr>
<tr>
<td>Ohio</td>
<td>47,956,232</td>
<td>504</td>
<td>6,733,000</td>
</tr>
<tr>
<td>California</td>
<td>28,361,070</td>
<td>300</td>
<td>6,154,000</td>
</tr>
<tr>
<td>Michigan</td>
<td>25,725,852</td>
<td>251</td>
<td>4,830,000</td>
</tr>
</tbody>
</table>
FEDERAL PROJECTS, DIFFERENT KINDS OF PROJECTS CONTAINING BUILDINGS

Abattoirs.
Airfields.
Airway equipment.
Ammunition manufacturing.
Ammunition preserves.
Amphitheaters.
Animal houses.
Animal pens.
Animal shelters.
Apartment buildings.
Army posts.
Asylums.
Barracks.
Barracks.
Bathhouses.
Blacksmith shops.
Boathouses.
Border stations.
Bridges.
Building repairs.
Bunkhouses.
Cabins.
Camp grounds.
Club buildings.
Comfort stations.
Commissaries.
Concrete cellars.
Cottages.
Cotton sheds.
Crushing plants.
Customs buildings.
Departmental buildings.
Dining halls and kitchens.
Dispensaries.
Dormitories.
Drill halls.
Electric plants.
Experimental stations.
Feed sheds.
Field quarters.
Fire lookouts.
Fire stations.
Fish hatcheries.
Game shelters.
Garages.
Gatehouses.
Gates.
Gage stations.
General reconditioning.
Greenhouses.
Gun sheds.
Gymnasiums.
Hangars.
Hay sheds.
Headquarters buildings.
Heating plants.
Hospitals.
Hotels and hotel alterations.
Incinerators.
Insectariums.
Inspection stations.
Jails.
Laboratories.
Landing fields.
Life stations.
Light fog stations.
Lighthouses, etc.
Loading docks.
Lock houses.
Lodges.
Machine shops.
Memorials.
Mest halls.
Meter houses.
Monuments.
National parks.
Navy-yard improvements.
Nurseries.
Observatories.
Outdoor gymnasmus.
Paint shops.
Parachute shops.
Piers, etc.
Post construction—Army.
Post offices.
Power plants, steam and water.
Pumping plants.
Radio stations, etc.
Radio towers and controls.
Railways and equipment.
Reconstruction depots.
Refrigeration plants.
Rehabilitations.
Rest rooms.
Restoration of mansions.
Restaurants.
Riding halls.
Rostrums.
Sanatoriums.
Schools.
Screen porches.
Sentry houses.
Sewer systems.
Sheep barns.
Silos.
Smokehouses.
Soil sheds.
Stables.
Theaters.
Tool caches.
Towers.
Vehicle sheds.
Veterans homes.
Warehouses.
Wash houses.
Waterworks.
Wells.
Wharf buildings.
Wind tunnels.
Windmills.

FEDERAL PROJECTS, DIFFERENT KINDS OF PROJECTS CONTAINING NO BUILDINGS

Administration expenses.
Air-navigation aids.
Airway lightings.
Architectural plans.
Automatic lights.
Bank protections.
Beacons.
Boilers.
Breakwater.
Booys.
Canals.
Cemetery improvements.
Chapel organs.
Circulating pumps.
Coal pits.
Compasses.
Converting tenders.
Cranes.
Dams.
Diesels.
Dikes and channels.
Disease controls.
Drainages.
Dredging.
Earthquake investigations.
Elevators.
Engines.
Erosion.
Fences.
Field improvements.
Fire escapes.
Fire protections.
Fireplaces (outdoors).
Fish screens.
Flood control.
Flood-control investigations.
Floor replacements.
Footpaths.
Forest improvements.
Fort repairs.
Gasoline storage.
Garages.
Generators.
Gradings.
Guard rafts.
Gutty damp.
Gun mounts.
Harbor Improvements.
Hay hoists.
Heating repairs.
Highways.
Hotbed frames.
Hydroelectric systems.
Insectariums.
Interior-room alterations.
Investigations.
Irrigations.
Laboratory equipment.
Landscaping.
Laundry facilities.
Locks.
Machine-gun ranges.
Materials (various).
Measure statistics.
Math controls.
Motor pools.
Moving of buildings.
N. R. A. administrative expenses.
Night lightings.
Oil burners.
Oil-dope storage.
Orchards.
Ordnances.
Oyster stations.
Painting.
Parapets.
Park plans.
Parking spaces.
Parkways.
Patrol boats.
Paved aprons.
Penstocks.
Pipe lines.
Pipe, plant, pest, and insect controls.
Planting.
Plug oil wells.
Promenades.
Publications.
Rearranges.
Reemployment agencies.
Refuge boundaries.
Relocating beacons.
Reservoirs.
Removing hazards.
Repairs to ruins.
Restoration mills.
Riprap.
River gages.
Roads.
Rock removals.
Rust controls.
Seeding.
Septic tanks.
Sewers.
Shipways.
Shop equipment.
Silo boxes.
Snow fences.
Soot ejectors.
Soundproofing.
Spray irrigation.
Sprinkling systems.
Stoker equipment.
Stone guards.
Storm-damage repairs.
Streets.
Submarine cables.
Surveys.
Tactical maps.
Tanks.
Telephone construction.
Teletype installations.
Torpedo-station equipment.
Trails.
Transmission lines.
Transportation equipment.
Trellis (grape).
Vauls.
Venetian blinds.
Ventilation.
Vessels.
Wharves.
Chapter X

NON-FEDERAL PROJECTS, DIFFERENT KINDS OF PROJECTS CONTAINING BUILDINGS


NON-FEDERAL PROJECTS, DIFFERENT KINDS OF PROJECTS CONTAINING NO BUILDINGS


The Number of Non-federal Projects and the Amount of Allotments Under Each Program in Each of the Seven Regions Are as Follows (as of January 4, 1939):

<table>
<thead>
<tr>
<th>Region No.:</th>
<th>Number of projects</th>
<th>Amount of allotments</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. I. R. A. (1933-34)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>776</td>
<td>$270,417,418</td>
</tr>
<tr>
<td>2.</td>
<td>636</td>
<td>133,040,610</td>
</tr>
<tr>
<td>3.</td>
<td>493</td>
<td>65,648,437</td>
</tr>
<tr>
<td>4.</td>
<td>615</td>
<td>71,156,952</td>
</tr>
<tr>
<td>5.</td>
<td>661</td>
<td>76,757,583</td>
</tr>
<tr>
<td>6.</td>
<td>244</td>
<td>44,179,103</td>
</tr>
<tr>
<td>7.</td>
<td>250</td>
<td>14,375,585</td>
</tr>
<tr>
<td>District of Columbia and territories</td>
<td>28</td>
<td>9,581,367</td>
</tr>
<tr>
<td>Total</td>
<td>3,703</td>
<td>683,156,825</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region No.:</th>
<th>Number of projects</th>
<th>Amount of allotments</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. R. A. (1935 and Supplement)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>687</td>
<td>$117,327,832</td>
</tr>
<tr>
<td>2.</td>
<td>771</td>
<td>82,812,366</td>
</tr>
<tr>
<td>3.</td>
<td>733</td>
<td>101,017,594</td>
</tr>
<tr>
<td>4.</td>
<td>561</td>
<td>34,455,608</td>
</tr>
<tr>
<td>5.</td>
<td>573</td>
<td>62,404,739</td>
</tr>
<tr>
<td>6.</td>
<td>234</td>
<td>26,115,808</td>
</tr>
<tr>
<td>7.</td>
<td>233</td>
<td>15,079,221</td>
</tr>
<tr>
<td>District of Columbia and territories</td>
<td>12</td>
<td>1,653,779</td>
</tr>
<tr>
<td>Total</td>
<td>3,804</td>
<td>440,866,947</td>
</tr>
</tbody>
</table>

677
### General Statistics

#### Chapter X

**The Number of Non-federal Projects and the Amount of Allotments Under Each Program in Each of the Seven Regions are as Follows (as of January 4, 1939):**

(Continued from preceding page)

<table>
<thead>
<tr>
<th>Region No.:</th>
<th>Number of projects</th>
<th>Amount of allotments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>471</td>
<td>$60,217,335</td>
</tr>
<tr>
<td>2</td>
<td>351</td>
<td>36,327,107</td>
</tr>
<tr>
<td>3</td>
<td>281</td>
<td>29,775,119</td>
</tr>
<tr>
<td>4</td>
<td>237</td>
<td>18,339,457</td>
</tr>
<tr>
<td>5</td>
<td>174</td>
<td>19,009,049</td>
</tr>
<tr>
<td>6</td>
<td>149</td>
<td>12,456,370</td>
</tr>
<tr>
<td>7</td>
<td>99</td>
<td>3,480,556</td>
</tr>
<tr>
<td>District of Columbia and territories</td>
<td>6</td>
<td>590,781</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,768</strong></td>
<td><strong>180,195,974</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region No.:</th>
<th>Number of projects</th>
<th>Amount of allotments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>168</td>
<td>$21,475,304</td>
</tr>
<tr>
<td>2</td>
<td>226</td>
<td>19,226,372</td>
</tr>
<tr>
<td>3</td>
<td>194</td>
<td>21,824,941</td>
</tr>
<tr>
<td>4</td>
<td>189</td>
<td>31,160,670</td>
</tr>
<tr>
<td>5</td>
<td>181</td>
<td>33,821,571</td>
</tr>
<tr>
<td>6</td>
<td>103</td>
<td>8,774,062</td>
</tr>
<tr>
<td>7</td>
<td>111</td>
<td>5,885,976</td>
</tr>
<tr>
<td>District of Columbia and territories</td>
<td>19</td>
<td>2,875,177</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,191</strong></td>
<td><strong>145,044,073</strong></td>
</tr>
</tbody>
</table>

#### P. W. A. E. (1938) (“F” Projects)

<table>
<thead>
<tr>
<th>Region No.:</th>
<th>Number of projects</th>
<th>Amount of allotments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>994</td>
<td>$215,850,329</td>
</tr>
<tr>
<td>2</td>
<td>1,443</td>
<td>174,761,589</td>
</tr>
<tr>
<td>3</td>
<td>1,136</td>
<td>92,440,242</td>
</tr>
<tr>
<td>4</td>
<td>1,012</td>
<td>61,689,424</td>
</tr>
<tr>
<td>5</td>
<td>846</td>
<td>58,178,699</td>
</tr>
<tr>
<td>6</td>
<td>425</td>
<td>34,668,705</td>
</tr>
<tr>
<td>7</td>
<td>287</td>
<td>20,944,796</td>
</tr>
<tr>
<td>District of Columbia and territories</td>
<td>68</td>
<td>29,482,821</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6,211</strong></td>
<td><strong>687,116,515</strong></td>
</tr>
</tbody>
</table>

### SUMMARY

Total projects and amount of allotments all Non-federal programs including 1938 (as of January 4, 1939):

<table>
<thead>
<tr>
<th>Region No.:</th>
<th>Number of projects</th>
<th>Amount of allotments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3,096</td>
<td>$685,288,418</td>
</tr>
<tr>
<td>2</td>
<td>3,427</td>
<td>446,168,044</td>
</tr>
<tr>
<td>3</td>
<td>2,837</td>
<td>308,706,333</td>
</tr>
<tr>
<td>4</td>
<td>2,614</td>
<td>216,803,111</td>
</tr>
<tr>
<td>5</td>
<td>2,435</td>
<td>250,171,321</td>
</tr>
<tr>
<td>6</td>
<td>1,155</td>
<td>126,194,048</td>
</tr>
<tr>
<td>7</td>
<td>980</td>
<td>58,866,134</td>
</tr>
<tr>
<td>District of Columbia and territories</td>
<td>133</td>
<td>44,183,925</td>
</tr>
<tr>
<td><strong>Grand total</strong></td>
<td><strong>16,677</strong></td>
<td><strong>2,136,380,334</strong></td>
</tr>
</tbody>
</table>

The total number of Federal and Non-federal projects and total amount of allotments for the 1938 program (as of January 4, 1939):

<table>
<thead>
<tr>
<th>Number of projects</th>
<th>Amount of allotments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>1,887</td>
</tr>
<tr>
<td>Non-federal</td>
<td>6,211</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8,098</strong></td>
</tr>
</tbody>
</table>
## N. I. R. A. Federal Projects

### General Statistics

#### P. W. A. Allotments to Federal Agencies and Bureaus

<table>
<thead>
<tr>
<th>Agency</th>
<th>Allotments</th>
<th>Reported project cost</th>
<th>Percent of allotment</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grand Total</strong></td>
<td>$1,567,014,393</td>
<td>$1,546,204,282</td>
<td>99</td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agricultural Engineering</td>
<td>471,588,647</td>
<td>471,779,274</td>
<td>100</td>
</tr>
<tr>
<td>Agricultural Industry</td>
<td>298,378</td>
<td>298,378</td>
<td>100</td>
</tr>
<tr>
<td>Biological Survey</td>
<td>2,281,633</td>
<td>2,279,386</td>
<td>100</td>
</tr>
<tr>
<td>Chemistry and Soils</td>
<td>767,497</td>
<td>767,497</td>
<td>100</td>
</tr>
<tr>
<td>Dairy Industry</td>
<td>182,795</td>
<td>182,795</td>
<td>100</td>
</tr>
<tr>
<td>Entomology and Plant Quarantine</td>
<td>2,048,302</td>
<td>2,098,303</td>
<td>93</td>
</tr>
<tr>
<td>Entomology</td>
<td>296,548</td>
<td>296,548</td>
<td>100</td>
</tr>
<tr>
<td>Plant Quarantine</td>
<td>2,075,783</td>
<td>2,075,783</td>
<td>100</td>
</tr>
<tr>
<td>Experimental Stations</td>
<td>4,948</td>
<td>4,948</td>
<td>100</td>
</tr>
<tr>
<td>Food and Drug Administration</td>
<td>68,491</td>
<td>68,491</td>
<td>100</td>
</tr>
<tr>
<td>Forest Service</td>
<td>40,667,659</td>
<td>40,716,960</td>
<td>100</td>
</tr>
<tr>
<td>Home Economics</td>
<td>9,799</td>
<td>9,799</td>
<td>100</td>
</tr>
<tr>
<td>Plant Industry</td>
<td>3,265,439</td>
<td>3,246,477</td>
<td>100</td>
</tr>
<tr>
<td>Public Lands Highways</td>
<td>5,000,000</td>
<td>4,976,000</td>
<td>100</td>
</tr>
<tr>
<td>Public Roads (Federal aid)</td>
<td>400,012,964</td>
<td>400,366,171</td>
<td>100</td>
</tr>
<tr>
<td>Secretary's Office</td>
<td>219,718</td>
<td>209,752</td>
<td>95</td>
</tr>
<tr>
<td>Soil Conservation (Soil Erosion)</td>
<td>13,717,022</td>
<td>13,710,321</td>
<td>100</td>
</tr>
<tr>
<td>Weather Bureau</td>
<td>183,709</td>
<td>183,703</td>
<td>100</td>
</tr>
<tr>
<td><strong>Commerce</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Commerce</td>
<td>18,829,485</td>
<td>18,658,800</td>
<td>99</td>
</tr>
<tr>
<td>Coast and Geodetic Survey</td>
<td>3,055,825</td>
<td>3,055,612</td>
<td>100</td>
</tr>
<tr>
<td>Fisheries</td>
<td>8,286,209</td>
<td>8,284,773</td>
<td>100</td>
</tr>
<tr>
<td>Lighthouses</td>
<td>670,455</td>
<td>670,073</td>
<td>100</td>
</tr>
<tr>
<td>Navigation and Steamboat</td>
<td>5,608,359</td>
<td>5,439,888</td>
<td>97</td>
</tr>
<tr>
<td>Inspection</td>
<td>92,039</td>
<td>92,039</td>
<td>100</td>
</tr>
<tr>
<td>Secretary's Office</td>
<td>947,000</td>
<td>946,868</td>
<td>100</td>
</tr>
<tr>
<td>Standards</td>
<td>169,598</td>
<td>169,595</td>
<td>100</td>
</tr>
<tr>
<td><strong>Interior</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alaska Railroad</td>
<td>188,315,453</td>
<td>182,682,977</td>
<td>97</td>
</tr>
<tr>
<td>Alaska Road Commission</td>
<td>947,008</td>
<td>928,065</td>
<td>98</td>
</tr>
<tr>
<td>Chief Clerk's Office</td>
<td>1,593,239</td>
<td>1,593,239</td>
<td>100</td>
</tr>
<tr>
<td>Columbia Institute for Deaf</td>
<td>2,154</td>
<td>2,154</td>
<td>100</td>
</tr>
<tr>
<td>Freedmen's Hospital</td>
<td>10,000</td>
<td>10,000</td>
<td>100</td>
</tr>
<tr>
<td>General Land Office</td>
<td>684,974</td>
<td>84,974</td>
<td>12</td>
</tr>
<tr>
<td>Geological Survey</td>
<td>30,151,300</td>
<td>29,877,441</td>
<td>99</td>
</tr>
<tr>
<td>Howard University</td>
<td>845,148</td>
<td>835,889</td>
<td>99</td>
</tr>
<tr>
<td>Indian Affairs</td>
<td>40,992,381</td>
<td>40,425,239</td>
<td>99</td>
</tr>
<tr>
<td>Mines</td>
<td>20,025</td>
<td>19,582</td>
<td>98</td>
</tr>
<tr>
<td>National Park Service</td>
<td>96,264,000</td>
<td>93,180,071</td>
<td>97</td>
</tr>
<tr>
<td>Secretary's Office</td>
<td>11,617</td>
<td>11,617</td>
<td>100</td>
</tr>
<tr>
<td>St. Elizabeths Hospital</td>
<td>1,080,599</td>
<td>1,069,344</td>
<td>99</td>
</tr>
<tr>
<td>Territory of Alaska</td>
<td>175,500</td>
<td>176,075</td>
<td>100</td>
</tr>
<tr>
<td>Territories and island</td>
<td>236,718</td>
<td>207,343</td>
<td>88</td>
</tr>
<tr>
<td>Virgin Islands</td>
<td>2,880,366</td>
<td>2,265,170</td>
<td>79</td>
</tr>
</tbody>
</table>

1 $136,669,759 for low-cost housing is not included in the Grand Total of Allotments.
### General Statistics

#### Chapter X

**NON-FEDERAL AND ADMINISTRATIVE EXPENSE**

**Statement of Transactions Covering all Programs except P. W. A. Act of 1938**

*As of Dec. 31, 1938*

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditures for purchase of bonds</td>
<td>$673,552,368.18</td>
</tr>
<tr>
<td>Expenditures for payments of grants</td>
<td>718,756,151.01</td>
</tr>
<tr>
<td>Expenditures for administrative expenses</td>
<td>89,144,361.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,481,452,880.19</strong></td>
</tr>
</tbody>
</table>

Deduct:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest collected</td>
<td>$18,075,428.71</td>
</tr>
<tr>
<td>Revolving-fund receipts</td>
<td>591,698,354.06</td>
</tr>
<tr>
<td>Bonds on hand</td>
<td>40,868,805.65</td>
</tr>
<tr>
<td>Bonds matured</td>
<td>8,043,030.90</td>
</tr>
<tr>
<td><strong>Cost to Government (as of Dec. 31, 1938)</strong></td>
<td><strong>822,767,260.87</strong></td>
</tr>
</tbody>
</table>

Building project allotments

(This is 31.7 percent of total loan and grant.)

Remaining project allotments (including some buildings) 1... **1,129,293,371.00**

### COST TO GOVERNMENT OF NON-FEDERAL BUILDING PROJECTS ON BASIS OF LOANS AND GRANTS

**Exclusive of 1938 Program—As of December 31, 1938**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated cost of all Non-federal projects</td>
<td>$2,757,086,766</td>
</tr>
<tr>
<td>Administrative expense</td>
<td>$89,144,361.00</td>
</tr>
<tr>
<td><strong>Ratio of administrative expense to cost of Non-federal projects (percent)</strong></td>
<td>3.23</td>
</tr>
<tr>
<td>Estimated cost of building projects</td>
<td>$1,074,100,785</td>
</tr>
<tr>
<td>Proportionate administrative expense on building projects</td>
<td>$34,728,696</td>
</tr>
<tr>
<td>Loans on all Non-federal projects</td>
<td>$785,249,253</td>
</tr>
<tr>
<td>Loans on all Non-federal building projects</td>
<td>$124,428,743</td>
</tr>
<tr>
<td>Total interest earned on loans—all projects</td>
<td>$18,278,438</td>
</tr>
<tr>
<td>Proportionate interest earned on loans—building projects</td>
<td>$2,896,358</td>
</tr>
</tbody>
</table>

**SUMMARY**

*(On Non-federal building projects)*

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total grants</td>
<td>$399,052,244</td>
</tr>
<tr>
<td>Total loans</td>
<td>124,428,743</td>
</tr>
<tr>
<td>Proportionate administrative expense</td>
<td>34,728,696</td>
</tr>
<tr>
<td><strong>Total incurred costs</strong></td>
<td><strong>558,209,683</strong></td>
</tr>
<tr>
<td>Less proportionate interest earned</td>
<td><strong>$2,896,358</strong></td>
</tr>
<tr>
<td>Less loans</td>
<td>124,428,743</td>
</tr>
<tr>
<td><strong>Maximum cost to Government</strong></td>
<td><strong>430,884,582</strong></td>
</tr>
</tbody>
</table>

### COST TO GOVERNMENT OF NON-FEDERAL BUILDINGS (ONLY) ON BASIS OF LOANS AND GRANTS

**Exclusive of 1938 Program—As of December 31, 1938**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimated cost of Non-federal projects</td>
<td>$2,757,086,766</td>
</tr>
<tr>
<td>Administrative expense</td>
<td>$89,144,361.00</td>
</tr>
<tr>
<td><strong>Ratio of administrative expense to cost of Non-federal projects (percent)</strong></td>
<td>3.23</td>
</tr>
<tr>
<td>Estimated cost of buildings (includes buildings in other than building projects)</td>
<td>$1,100,070,577</td>
</tr>
<tr>
<td>Proportionate administrative expense on buildings</td>
<td>$35,532,300</td>
</tr>
<tr>
<td>Grants on all Non-federal projects</td>
<td>$867,325,075</td>
</tr>
<tr>
<td>Estimated grants on all Non-federal buildings</td>
<td>$408,459,000</td>
</tr>
<tr>
<td>Loans on all Non-federal projects</td>
<td>$785,249,253</td>
</tr>
<tr>
<td>Estimated loans on all Non-federal buildings</td>
<td>$146,162,800</td>
</tr>
<tr>
<td>Total interest earned on loans—all projects</td>
<td>$18,278,438</td>
</tr>
<tr>
<td>Proportionate interest earned on loans of buildings</td>
<td>$3,356,000</td>
</tr>
</tbody>
</table>

**SUMMARY**

*(On all Non-federal buildings)*

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total grants</td>
<td>$408,459,000</td>
</tr>
<tr>
<td>Total loans</td>
<td>146,162,800</td>
</tr>
<tr>
<td>Proportionate administrative expense</td>
<td>35,532,300</td>
</tr>
<tr>
<td><strong>Total incurred costs</strong></td>
<td><strong>590,154,100</strong></td>
</tr>
<tr>
<td>Less proportionate interest earned</td>
<td><strong>$3,356,000</strong></td>
</tr>
<tr>
<td>Less loans</td>
<td>146,162,800</td>
</tr>
<tr>
<td><strong>Maximum cost to Government</strong></td>
<td><strong>440,635,300</strong></td>
</tr>
</tbody>
</table>

1 Includes $75,129,983 for buildings in projects for sewers, water, power, and gas plants.
### QUESTIONNAIRE SENT OUT FOR COMMITTEE ON ARCHITECTURAL SURVEYS

UNITED STATES DEPARTMENT OF THE INTERIOR
OFFICE OF EDUCATION

WASHINGTON, D.C., FEBRUARY 1939.

**STATE**

**Local address of recipient of P.W.A. grant or loan**

**DIRECTIONS:**
1. Please complete questionnaire and return in enclosed envelope within ten days. No postage required.
2. Note that a separate questionnaire is to be used for each new building or addition.
3. Report only actual facilities provided in the new building or addition.

**A.** This is a new building: Yes... No... This is an addition to another building: Yes... No... Docket No.

**B.** The next eight questions are arranged in columns for quick tabulation. Indicate the one nearest correct answer for each column.

**Answer for each column with one cross (X) on the appropriate short blank line. Ignore column numbering.**

**School district population**

<table>
<thead>
<tr>
<th>Kind of school district</th>
<th>Kind of school</th>
<th>Total site</th>
<th>Improved usable play space</th>
<th>Seating capacity of the auditorium</th>
<th>Seating capacity of the library</th>
<th>Seating capacity of the lunchroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>0...Under 2,500.</td>
<td>0...City</td>
<td>0...Elementary only</td>
<td>0...Less than 1 acre.</td>
<td>0...Less than 1 acre.</td>
<td>0...None built.</td>
<td>0...None built.</td>
</tr>
<tr>
<td>1...2,000 to 4,999.</td>
<td>1...County</td>
<td>1...Junior high school only</td>
<td>1...1 acre.</td>
<td>1...1 acre.</td>
<td>1...50 or less.</td>
<td>1...Less than 50.</td>
</tr>
<tr>
<td>2...5,000 to 9,999.</td>
<td>2...Consolidated</td>
<td>2...Senior high school only</td>
<td>2...2 acres.</td>
<td>2...2 acres.</td>
<td>2...51 to 99.</td>
<td>2...21 to 30.</td>
</tr>
<tr>
<td>3...10,000 to 24,999.</td>
<td>3...Union</td>
<td>3...Elementary and junior high school</td>
<td>3...3 acres.</td>
<td>3...3 acres.</td>
<td>3...100 to 149.</td>
<td>3...31 to 40.</td>
</tr>
<tr>
<td>4...25,000 to 49,999.</td>
<td>4...Local</td>
<td>4...Elementary, junior and senior high school</td>
<td>4...4 acres.</td>
<td>4...4 acres.</td>
<td>4...150 to 249.</td>
<td>4...41 to 50.</td>
</tr>
<tr>
<td>5...50,000 to 74,999.</td>
<td>5...Central</td>
<td>5...Elementary and senior high school</td>
<td>5...5 acres.</td>
<td>5...5 acres.</td>
<td>5...250 to 349.</td>
<td>5...51 to 60.</td>
</tr>
<tr>
<td>6...75,000 to 99,999.</td>
<td>6...Regional</td>
<td>6...Junior and senior high school</td>
<td>6...6 to 10 acres.</td>
<td>6...6 to 10 acres.</td>
<td>6...150 to 499.</td>
<td>6...61 to 74.</td>
</tr>
<tr>
<td>7...100,000 to 249,999.</td>
<td>7...Other</td>
<td>7...Junior-senior high school and junior college</td>
<td>7...11 to 15 acres.</td>
<td>7...11 to 15 acres.</td>
<td>7...500 to 799.</td>
<td>7...75 to 99.</td>
</tr>
<tr>
<td>8...250,000 to 499,999.</td>
<td>8...</td>
<td>8...Senior high school and junior college</td>
<td>8...16 to 20 acres.</td>
<td>8...16 to 20 acres.</td>
<td>8...800 to 999.</td>
<td>8...100 to 149.</td>
</tr>
<tr>
<td>9...500,000 or over.</td>
<td>9...</td>
<td>9...Junior college</td>
<td>9...21 acres or over.</td>
<td>9...21 acres or over.</td>
<td>9...1,000 or over.</td>
<td>9...150 or over.</td>
</tr>
</tbody>
</table>

**C.** The next fourteen questions are each answered with a number in the column after each kind of room. Use zero (0) if the new building or addition does not include a particular kind of room. How many of each of the following kinds of rooms are in the new building or addition?

<table>
<thead>
<tr>
<th>Kind of room</th>
<th>Number</th>
<th>Kind of room</th>
<th>Number</th>
<th>Kind of room</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gymnasium</td>
<td></td>
<td>Auditorium-gymnasium</td>
<td></td>
<td>Swimming pool</td>
<td></td>
</tr>
<tr>
<td>Home economics</td>
<td></td>
<td>Art or drawing</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**D.**
1. Cost of building $...  36  42
2. Cost of equipment $...  45  48
3. Cost of land $...  49  54
4. Total cost $...  55  62

**E.** The following eleven questions can be answered "Yes" or "No" by inserting a cross (X) in the proper column.

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Was this building part of a long-range plan of school plant needs?</td>
<td>5. Was building need determined by survey of this and adjacent districts?</td>
</tr>
<tr>
<td>2. Was building need determined by a State school building survey?</td>
<td>6. Was building need determined by a survey of this district only?</td>
</tr>
<tr>
<td>3. Was building need determined by survey of 2 or more counties?</td>
<td>7. Was the survey made by State authority?</td>
</tr>
<tr>
<td>4. Was building need determined by single county survey?</td>
<td>8. Was the survey made by county authority?</td>
</tr>
</tbody>
</table>

**Signature and title of official who supplied the above information**

**Date**
### Table 1. NUMBER OF NEW SCHOOL BUILDINGS AND ADDITIONS IN CITIES AND IN SCHOOL DISTRICTS OUTSIDE OF CITIES

<table>
<thead>
<tr>
<th>State</th>
<th>Total buildings</th>
<th>Number of buildings in cities and outside cities</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>48 States:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>1,965</td>
<td>1,390</td>
</tr>
<tr>
<td>Percent</td>
<td>100.0</td>
<td>70.7</td>
</tr>
</tbody>
</table>

### Table 2. NUMBER OF SCHOOL DISTRICTS OUTSIDE OF CITIES WHICH WERE COUNTIES, CONSOLIDATED AND CENTRAL, LOCAL AND UNION, REGIONAL, AND OTHER DISTRICTS

<table>
<thead>
<tr>
<th>State</th>
<th>Total number of places outside cities</th>
<th>Counties</th>
<th>Consolidated and central</th>
<th>Local and union</th>
<th>Regional</th>
<th>Other</th>
<th>Not given</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48 States: IN NEW BUILDINGS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>501</td>
<td>109</td>
<td>159</td>
<td>136</td>
<td>3</td>
<td>84</td>
<td>10</td>
</tr>
<tr>
<td>Percent</td>
<td>100.0</td>
<td>21.8</td>
<td>31.7</td>
<td>27.1</td>
<td>0.6</td>
<td>16.8</td>
<td>2.0</td>
</tr>
</tbody>
</table>

| 48 States: IN ADDITIONS | | | | | | | |
| Number | 235 | 52 | 70 | 63 | 7 | 37 | 6 |
| Percent | 100.0 | 22.1 | 29.8 | 26.8 | 3.0 | 15.7 | 2.6 |

| 48 States: IN NEW BUILDINGS AND ADDITIONS | | | | | | | |
| Number in— | | | | | | | |
| New Buildings | 501 | 109 | 159 | 136 | 3 | 84 | 10 |
| Additions | 235 | 52 | 70 | 63 | 7 | 37 | 6 |
| Total | 736 | 161 | 229 | 199 | 10 | 121 | 16 |
| Percent | 100.0 | 21.9 | 31.1 | 27.0 | 1.4 | 16.4 | 12.2 |

### Table 3. NUMBER OF NEW SCHOOL BUILDINGS AND ADDITIONS ERECTED WITH P. W. A. AID FOR ELEMENTARY SCHOOLS ONLY, JUNIOR HIGH SCHOOLS ONLY, SENIOR HIGH SCHOOLS ONLY, ELEMENTARY AND JUNIOR OR SENIOR HIGH SCHOOLS, JUNIOR-SENIOR HIGH SCHOOLS, HIGH SCHOOLS AND JUNIOR COLLEGES, AND JUNIOR COLLEGES

<table>
<thead>
<tr>
<th>State</th>
<th>Total number of buildings</th>
<th>Elementary schools</th>
<th>Junior high schools</th>
<th>Senior high schools</th>
<th>Elementary and junior or senior high schools</th>
<th>Junior-senior high schools</th>
<th>High schools and junior colleges</th>
<th>Junior colleges</th>
<th>Not given</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>48 States: IN NEW BUILDINGS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>1,390</td>
<td>500</td>
<td>70</td>
<td>240</td>
<td>390</td>
<td>140</td>
<td>7</td>
<td>7</td>
<td>28</td>
</tr>
<tr>
<td>Percent</td>
<td>100.0</td>
<td>36.0</td>
<td>5.6</td>
<td>17.3</td>
<td>28.0</td>
<td>10.1</td>
<td>0.5</td>
<td>0.5</td>
<td>2.0</td>
</tr>
</tbody>
</table>

| 48 States: IN ADDITIONS | | | | | | | |
| Number | 575 | 161 | 22 | 86 | 202 | 86 | 5 | 1 | 12 |
| Percent | 100.0 | 28.0 | 3.8 | 14.9 | 35.1 | 15.0 | 0.9 | 0.2 | 2.1 |

<p>| 48 States: IN NEW BUILDINGS AND ADDITIONS | | | | | | | |
| Number in— | | | | | | | |
| New buildings | 1,390 | 500 | 78 | 240 | 390 | 140 | 7 | 7 | 28 |
| Additions | 575 | 161 | 22 | 86 | 202 | 86 | 5 | 1 | 12 |
| Total | 1,965 | 661 | 100 | 326 | 592 | 226 | 12 | 8 | 40 |
| Percent | 100.0 | 33.6 | 5.1 | 16.6 | 30.1 | 11.5 | 0.6 | 0.4 | 2.1 |</p>
<table>
<thead>
<tr>
<th>State</th>
<th>Total new buildings replacing existing buildings</th>
<th>1 building</th>
<th>2 buildings</th>
<th>3 buildings</th>
<th>4 buildings</th>
<th>5 buildings</th>
<th>6 buildings</th>
<th>7 buildings</th>
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### Table 5. Number of Auditoriums, Gymnasiums, and Auditorium-Gymnasiums in New Buildings and Additions Erected with P. W. A. Aid

<table>
<thead>
<tr>
<th>State</th>
<th>Auditoirums</th>
<th>Gymnasiums</th>
<th>Auditorium-Gymnasiums</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total number of buildings</td>
<td>Number of buildings</td>
<td>Total number of buildings</td>
</tr>
<tr>
<td></td>
<td>With auditorium</td>
<td>Without auditorium</td>
<td>With auditorium</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

#### IN NEW BUILDINGS

48 States:

- **Number:** 1,390 | 1,042 | 348 | 1,390 | 322 | 1,068 | 1,390 | 707 | 683
- **Percent:** 100.0 | 75.0 | 25.0 | 100.0 | 23.2 | 76.8 | 100.0 | 50.9 | 49.1

#### IN ADDITIONS

48 States:

- **Number:** 575 | 373 | 202 | 575 | 100 | 475 | 575 | 282 | 293
- **Percent:** 100.0 | 64.9 | 35.1 | 100.0 | 17.4 | 82.6 | 100.0 | 49.0 | 51.0

#### IN NEW BUILDINGS AND ADDITIONS

**Number in:**

- **New buildings:** 1,390 | 1,042 | 348 | 1,390 | 322 | 1,068 | 1,390 | 707 | 683
- **Additions:** 575 | 373 | 202 | 575 | 100 | 475 | 575 | 282 | 293

**Total:** 1,965 | 1,415 | 550 | 1,965 | 422 | 1,543 | 1,965 | 989 | 976

**Percent:** 100.0 | 72.0 | 28.0 | 100.0 | 21.5 | 78.5 | 100.0 | 50.3 | 49.7

### Table 6. Number of Classrooms, Number of Each Kind of Special-Activity Rooms, and Total Number of Rooms in 1,965 New Buildings and Additions Erected with P. W. A. Aid

<table>
<thead>
<tr>
<th>State</th>
<th>Number of bllds.</th>
<th>Total number of rooms</th>
<th>Number of classrooms</th>
<th>Total number of special activity rooms</th>
<th>Libraries</th>
<th>Scientific laboratories</th>
<th>Social science rooms</th>
<th>Art rooms</th>
<th>Music rooms</th>
<th>Home economics</th>
<th>Industrial art rooms</th>
<th>Agricultural laboratories</th>
<th>Other special rooms</th>
</tr>
</thead>
</table>

#### IN NEW BUILDINGS

48 States:

- **Number:** 1,390 | 19,190 | 10,783 | 8,407 | 869 | 1,331 | 708 | 467 | 622 | 1,026 | 804 | 295 | 2,285
- **Percent:** 100.0 | 56.2 | 43.8 | 100.0 | 869 | 1,331 | 708 | 467 | 622 | 1,026 | 804 | 295 | 2,285

#### IN ADDITIONS

48 States:

- **Number:** 575 | 4,794 | 2,490 | 2,304 | 253 | 294 | 152 | 126 | 212 | 399 | 250 | 78 | 540
- **Percent:** 100.0 | 51.9 | 48.1 | 100.0 | 253 | 294 | 152 | 126 | 212 | 399 | 250 | 78 | 540

#### IN NEW BUILDINGS AND ADDITIONS

**Number in:**

- **New buildings:** 1,390 | 19,190 | 10,783 | 8,407 | 869 | 1,331 | 708 | 467 | 622 | 1,026 | 804 | 295 | 2,285
- **Additions:** 575 | 4,794 | 2,490 | 2,304 | 253 | 294 | 152 | 126 | 212 | 399 | 250 | 78 | 540

**Total:** 1,965 | 23,984 | 13,273 | 10,711 | 1,122 | 1,625 | 860 | 593 | 834 | 1,425 | 1,054 | 373 | 2,825

**Percent:** 100.0 | 100.0 | 55.3 | 44.7 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0
## General Statistics

### Table 7. Cost of New Buildings, Cost of Additions, Total Cost of New Buildings and Additions of 1,873 Buildings Erected with P.W.A. Aid Which Reported Cost

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<th>Total cost</th>
<th>Number buildings reporting</th>
<th>Cost</th>
<th>Number buildings reporting</th>
<th>Cost</th>
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<tr>
<td>Number</td>
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<td>$260,395,473</td>
<td>1,324</td>
<td>$213,242,442</td>
<td>549</td>
<td>$47,153,031</td>
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<td>Percent</td>
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<td>15</td>
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<td>6</td>
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<td>5,880,771</td>
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<td>15</td>
<td>1,336,535</td>
<td>6</td>
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<tr>
<td>South Dakota</td>
<td>11</td>
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<td>9</td>
<td>722,814</td>
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<td>1,939,122</td>
<td>10</td>
<td>240,826</td>
<td></td>
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<tr>
<td>Vermont</td>
<td>5</td>
<td>376,636</td>
<td>4</td>
<td>323,838</td>
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<td>406,999</td>
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<td>—</td>
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<td>—</td>
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<td>5,225,221</td>
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<td>6</td>
<td>626,079</td>
<td>1</td>
<td>118,000</td>
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</tr>
</tbody>
</table>

Total cost is for buildings erected with P.W.A. aid for which cost was reported. Cost includes cost of buildings, additions, and cost of additions. Total for all states is 1,873.
## General Statistics

### Chapter X

### Table 8.
**NUMBER OF NEW BUILDINGS AND ADDITIONS ERECTED WITH P. W. A. AID WHICH WERE DETERMINED BY A STATE SCHOOL BUILDING SURVEY**

<table>
<thead>
<tr>
<th>State</th>
<th>Total buildings and additions</th>
<th>New buildings</th>
<th>Additions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number based on survey</td>
<td>State</td>
<td>Total buildings</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
<td>Not given</td>
</tr>
<tr>
<td>48 States:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>1,965</td>
<td>276</td>
<td>1,454</td>
</tr>
<tr>
<td>Percent</td>
<td>100.0</td>
<td>14.0</td>
<td>74.0</td>
</tr>
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</table>

### Table 9.
**NUMBER OF NEW BUILDINGS AND ADDITIONS ERECTED WITH P. W. A. AID WHICH WERE BASED ONLY UPON A SURVEY OF THE INDIVIDUAL SCHOOL DISTRICT IN WHICH THE SCHOOL BUILDING WAS LOCATED**

<table>
<thead>
<tr>
<th>State</th>
<th>Total buildings and additions</th>
<th>New buildings</th>
<th>Additions</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number based on individual district only</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total buildings</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>48 States:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>1,965</td>
<td>1,152</td>
<td>606</td>
</tr>
<tr>
<td>Percent</td>
<td>100.0</td>
<td>58.6</td>
<td>30.9</td>
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### Table 10.
**NUMBER OF SUPERINTENDENTS WHO HAD SOME OFFICIAL RELATIONSHIP TO THE CONSTRUCTION OF SCHOOL BUILDINGS WITH P. W. A. AID WHO SAID THAT THE BUILDING STANDARDS, CONSTRUCTION, PLANS AND SPECIFICATIONS FAIRNESS IN COMPETITION, AND ACCOUNTING METHODS WERE BETTER, THE SAME, OR POORER, FOR P. W. A. BUILDINGS AS COMPARED WITH OTHER BUILDINGS**

<table>
<thead>
<tr>
<th>State</th>
<th>Total for city and county</th>
<th>County</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of superintendents who said standards were—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Higher</td>
<td>Same</td>
<td>Lower</td>
</tr>
<tr>
<td>48 States:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>387</td>
<td>386</td>
<td>22</td>
</tr>
<tr>
<td>Percent</td>
<td>47.4</td>
<td>47.2</td>
<td>2.7</td>
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(Continued on following page)
### TABLE 10.
**NUMBER OF SUPERINTENDENTS WHO HAD SOME OFFICIAL RELATIONSHIP TO THE CONSTRUCTION OF SCHOOL BUILDINGS WITH P. W. A. AID, WHO SAID THAT THE BUILDING STANDARDS, CONSTRUCTION, PLANS AND SPECIFICATIONS FAIRNESS IN COMPETITION, AND ACCOUNTING METHODS WERE BETTER, THE SAME, OR POORER, FOR P. W. A. BUILDINGS AS COMPARED WITH OTHER BUILDINGS**

(Continued from preceding page)

**CONSTRUCTION UNDER P. W. A.**

<table>
<thead>
<tr>
<th>State</th>
<th>Total for city and county</th>
<th>County</th>
<th>City</th>
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<tbody>
<tr>
<td></td>
<td>Number of superintendents who said construction under P. W. A. was—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Better</td>
<td>Same</td>
<td>Poorer</td>
</tr>
<tr>
<td>48 States:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>392</td>
<td>365</td>
<td>36</td>
</tr>
<tr>
<td>Percent</td>
<td>48.0</td>
<td>44.7</td>
<td>4.4</td>
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**PLANS AND SPECIFICATIONS UNDER P. W. A.**

<table>
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<th>County</th>
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<tbody>
<tr>
<td></td>
<td>Number of superintendents who said plans and specifications were—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>More complete</td>
<td>About the same</td>
<td>Less complete</td>
</tr>
<tr>
<td>48 States:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>393</td>
<td>379</td>
<td>24</td>
</tr>
<tr>
<td>Percent</td>
<td>48.1</td>
<td>46.4</td>
<td>2.9</td>
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**COMPETITION FOR P. W. A. CONTRACTS**

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<th>City</th>
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<tr>
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<td>Number of superintendents who said competition for contracts under P. W. A. was—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fairer</td>
<td>About the same</td>
<td>Not so fair</td>
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<tr>
<td>48 States:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Number</td>
<td>183</td>
<td>572</td>
<td>34</td>
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<tr>
<td>Percent</td>
<td>22.4</td>
<td>70.0</td>
<td>4.2</td>
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**ACCOUNTING METHODS DEVELOPED UNDER P. W. A.**

<table>
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</thead>
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<tr>
<td></td>
<td>Number of superintendents who said accounting methods under P. W. A. were—</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Better</td>
<td>Same</td>
<td>Poorer</td>
</tr>
<tr>
<td>48 States:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number</td>
<td>484</td>
<td>276</td>
<td>24</td>
</tr>
<tr>
<td>Percent</td>
<td>59.2</td>
<td>33.8</td>
<td>2.9</td>
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DEPARTMENTAL REORGANIZATION AND NEW AGENCIES
EFFECTED JULY 1, 1939

OFFICES PLACED UNDER EXECUTIVE OFFICE OF THE PRESIDENT

EXECUTIVE OFFICE OF THE PRESIDENT

BUREAU OF THE BUDGET

NATIONAL RESOURCES PLANNING BOARD

OFFICE OF GOVERNMENT REPORTS

CENTRAL STATISTICAL BOARD

OFFICES PLACED UNDER NEW AGENCIES

FEDERAL WORKS AGENCY

PUBLIC BUILDINGS ADMINISTRATION

PUBLIC ROADS ADMINISTRATION

PUBLIC WORKS ADMINISTRATION

UNITED STATES HOUSING AUTHORITY

WORK PROJECTS ADMINISTRATION

FEDERAL SECURITY AGENCY

OFFICE OF EDUCATION

NATIONAL YOUTH ADMINISTRATION

CIVILIAN CONSERVATION CORPS

PUBLIC HEALTH SERVICE

AMERICAN PRINTING HOUSE FOR THE BLIND

SOCIAL SECURITY BOARD

UNITED STATES ARMED FORCES

UNITED STATES EMPLOYMENT SERVICE

FEDERAL LOAN AGENCY

DISASTER LOAN CORPORATION

F.H.C. MORTGAGE COMPANY

FEDERAL HOUSING ADMINISTRATION

FEDERAL HOME LOAN BANK BOARD

FEDERAL NATIONAL MORTGAGE ASSOCIATION

EXPORT-IMPORT BANK OF WASHINGTON

ELECTRIC HOME AND FARM AUTHORITY

FEDERAL HOUSING FINANCE CORPORATION

OFFICES TRANSFERRED FROM OTHER DEPARTMENTS TO—

DEPARTMENT OF COMMERCE

DEPARTMENT OF THE INTERIOR

DEPARTMENT OF THE TREASURY

DEPARTMENT OF STATE

COMMERCIAL CREDIT CORPORATION

FARM CREDIT ADMINISTRATION

RURAL ELECTRIFICATION ADMINISTRATION

BUREAU OF ENGRAVING

BUREAU OF MINTING

BUREAU OF CRIMINAL INVESTIGATION

BUREAU OF INDIAN AFFAIRS

MOUNT RUSHMORE NATIONAL MEMORIAL COMMISSION

DIVISION OF TERRITORIES AND ISLAND POSSESSIONS

FEDERAL PRISON INDUSTRIES, INC.

NATIONAL TRAINING SCHOOL FOR BOYS

BUREAU OF LIGHTHOUSES (COAST GUARD)

FOREIGN SERVICE OF THE UNITED STATES

FOREIGN SERVICE BUILDING COMMISSION

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