DESCRIPTIVE STORY OF

W.P.A. PROJECT 62-31-1200

Agricultural Engineering Laboratory
Virginia Polytechnic Institute
Blacksburg, Virginia

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Agricultural Engineering Laboratory, V.P.I.

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This is a brief description of the high points involved in the construction of a stone and concrete laboratory for the Agricultural Engineering Department at Virginia Polytechnic Institute at Blacksburg under an allotment of funds through the Works Progress Administration and under the supervision of the engineering staff of the Department.

Plans were completed and application for the project was first made in August 1935. Approval was finally given in January 1936 and actual work begun on January 15, 1936. This beginning of work consisted of excavation mostly, together with other preliminaries like form building, setting up shop, assigning men to the various jobs and arranging a steam heated wooden laboratory for headquarters during cold weather.

The work has continued to date with scarcely an interruption except for cold weather and during the last three months not a full day has been lost on account of the weather. During the winter and spring the cold weather interferred considerably but concrete in the footings was actually laid in February.

General progress, the quality of construction obtained, and the skill and efficiency of the men has exceeded the fondest hopes of those in charge of the project until it has become to be recognized as one of the best W.P.A. projects in the State.

THE BUILDING

The original project covered only one laboratory wing or unit of a completely planned Agricultural Engineering Building laid out in strict adherence to planning schemes in the College Architect's office for the Agricultural Quadrangle.

This first unit of the building was a one-story laboratory wing 133 feet long and 45 feet wide with a total height of 17 feet, the ceiling height being 14 feet. A concrete floor covered the entire area but no partitions were included. Off one corner was a tool room and storage addition 15 x 25 feet.

Construction was entirely fireproof, the walls being laid up with stone and concrete and the roof being steel truss and steel deck construction. The three outside walls were laid up with native dolomitic limestone in random ashlar fashion after most of the buildings on the campus. These walls were backed up with rough stones laid in concrete morter with a plaster finish on the inside. One side wall, together with the walls of the tool room were laid up between forms with rough stones in concrete morter. Window and door openings were trimmed with "cast stone" made on the job and the windows were large steel sash with 14 x 20" glass panes.

Excavation for this wing was rather difficult, the front part being located in a low water course and the rear portion being in a hillside where excavation went down 9 feet into rock. The front half required a fill of 5 feet up to floor level and it was necessary to construct first a concrete storm sewer 3 x 2 feet under the building to take care of surface water that collected on the site.

THE WORKING FORCE

In the beginning a camp force of about 65 men was assigned to the project, there being about 52 men actually working on the construction. Others operated the camp, drove the trucks, kept records, etc. This force dwindled during the spring months until now there are about 38 to 42 men actually working.

These men all came from a camp about 4 miles from the site of the building, said camp being one of several WPA camps in the State and which was originally a transient camp. The men were hauled to the building each day and hot lunch was brought to them at noon. Rough dining tables with benches were made in the steam heated wooden laboratory for the men to eat on.

This arrangement was continued until April when the camp was moved to a corner of the College Farm about one mile from the building and said facilities are still being used. The housing of the men is in tents and these are not so satisfactory and will have to be changed before cold weather sets in.

The camp and this project were administered direct out of Richmond without the local county administration having any authority over it. This was a most efficient arrangement until all camps were dropped in the State and the project came under the authority of the County Administration. The camp is now being sponsored by the College, with WPA loaned equipment and run under private management. The men now have a higher wage rate and pay the camp $15 per month for board and lodging. Thus WPA has no responsibility for maintenance of the men.

The food in the camp has always been of the best, well cooked and plentiful. There has been very little complaint and this has been one factor in keeping the men satisfied on the job.

THE MEN

At the beginning of the project we were advised by "experts" that a construction job of this kind could not be done with this type of labor. We, ourselves, were somewhat skeptical but willing to try it since we had an experienced architectural and engineering staff in the Department for supervision.

The men at first seemed to be mostly laborers but by inquiring among them and by trying different men at different tasks we soon found out their respective abilities. They were carefully and patiently instructed in their work and were soon found to be very dependable for the most part. They were all very willing and soon became interested in the job and wanted to stay with it until completion. Now they are asking what other units we are going to build and expressing hopes that the work will continue for another year or more.

We soon had a sorted and trained gang that could be set to the various tasks without so much supervision and certainly with dependable results. Slowly that gang has been sifted down and the men have become more proficient in their tasks until now we freely say that the men are twice as good as we expected and we have shown everybody that we can build a structure of this kind fully as well as any contractor would do it.

The College Architect and the Business Manager have both been on the job recently and say that it is as well constructed as any building on the campus and they both said in the beginning they didn't think we could do it with this type of labor.

It is truly remarkable how willing the men are to do any task asked of them. I can go to any man on the job and ask him to come along with me to do any dirty or difficult job there is to be done and he is right with me. In addition they seem to have a personal interest in getting the job completed in good shape. They seem to feel that they belong to an organization that is going somewhere and they want to stock and help.

We have had very little trouble among the men and no tendency to strike or complain. To be sure there have been a few individuals who get mad at each other and there have been some chronic complainers but these are pretty well sorted out by now and our present gang of 40 men is doing better and faster work than the original gang of 50

or more. It is very noticeable in the reduced amount of detailed supervision required. A great amount of loyalty, willingness and interest exists in the gang we now have.

These men cannot be said to be as highly skilled as a contractor would usually have and they are not driven as hard but their willingness to work hard together with experienced supervision makes a combination that can turn out work equal to that of most contractors prompted by the desire to make big profits on a piece of work.

SUPERVISION

The working organization of the men has been constantly under a WPA camp supervisor who has directed the men for two years. The engineering and construction supervision has been under the constant direction of the staff of the Agricultural Engineering Department. This staff is experienced in architecture and construction and promotion to a greater degree than is usually found in a College.

It should be noted here that the College has employed and furnished to the job the services of two expert stonemasons and one stone cutter who have worked on all of the later buildings on the campus. This accounts for the perfection of the outside appearance of the present job.

Along with the supervision furnished in the Department are the very complete plans for the whole building previously worked out in the office of the College Architect. This unit of the building did not just happen. It was planned in strict detail more than five years ago and a WPA project became the first opportunity to get construction work started.

The Department was able to furnish equipment in the form of tools, wheelbarrows, concrete mixer, electric motors, tractor, saws, trucks, air compressor, shop facilities, etc., which have greatly aided the construction.

COSTS

The original cost of this first wing or unit was estimated at $20,000 to $21,000 under the idea that the labor furnished would not be very efficient. The approval of the project by WPA carried an allotment of $12,711 most of which was for labor. The College, as sponsor, has furnished about $9,000 in stone, sand, cement, lumber, hardware, roofing, equipment rents, wages and supervision.

As the construction of the first wing was nearing completion it was seen that only about half of the WPA allotment for labor had been used up. The Administration therefore granted permission to extend the project and we began work on the second wing which is a duplicate of the first wing. This wing is now about three-fourths completed and

I believe it is correct that the original labor allotment has not been used up. The College has added additional funds for the materials on the second wing, so that the cost of the two wings is perhaps around $25,000.

It is to be noted that the second wing has gone up about twice as fast as the first one due to the increased skill of the men and development of methods and equipment. This second wing has been most convenient for efficient use of labor since work could be shifted to the new unit as jobs became finished on the first unit.

JOBS DONE

It might be interesting to mention the different kinds of work done by the men on the job. They are listed roughly as follows: laying stone in walls, cutting face stone, making cast stone trim, concreting, laying concrete floors, plastering and finishing walls, setting steel sash, glazing, painting, setting steel trusses and steel roof deck, applying roofing, pointing walls, making forms for concrete and stone, making scaffolds, blacksmithing and making tools, driving tractor, drilling rock, blasting rock, crushing rock, making heavy wood doors, casting reinforced concrete beams, mixing mortar, grading grounds, and all kinds of labor connected with the job.

REMARKS

The results on the construction have exceeded our expectations and the experts say that the construction obtained is equal to any contract job that has been done on the campus.

The men are twice as good as we expected and are interested, loyal, and willing and skillful. They want to stay on the job. Some few that have drifted away have come back satisfied that this is a good place for them to work and hoping that the work will last.

No trouble has been had with the men. There has been no tendency to strike or complain. The rather low wages has had nothing to do with how hard they will work.

We have developed a remarkable combination of working men, proper direction and engineering supervision that cannot often be gotten together under similar circumstances.

It should be worth while for WPA to approve further units on this building so that this organization can be kept working indefinitely, or as long as WPA functions.

This setup worked best when under the independent administration out of Richmond without the necessary red tape of local authority.

Written by
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