

2006-212: THE PRINCESS ANNE ATHLETIC CENTER PROJECT: DEMOLITION AND SITE CLEARANCE PHASES

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THE PRINCESS ANNE ATHLETIC CENTER PROJECT: DEMOLITION AND SITE CLEARANCE PHASES

Abstract

The Demolition and Site Clearance Phases of the 4 ½-acre, \$470,000, Princess Anne Athletic Center Project included the demolition of the 25,000 square foot old factory building - the roof, ceiling, walls, and concrete floor slabs, the dismantling and removal of 29 large steel and 2 fiber glass vertical and horizontal storage tanks, their support structures and concrete foundations with all related fixtures, heavy brush and undergrowth and all other mounted structures and sheds and the disposal of all items in appropriate landfills and recycling centers. This project is funded by the Historically Black Colleges and Universities (HBCU) - US Department of Housing and Urban Development (HUD) program and the Maryland Department of Natural Resources. The work in this phase included the preparation of a Request for Proposal which was used to prepare a bid package that was processed through the Maryland Contract System. This culminated in the award of a contract to a local demolition company. Over 300 tons of scrap metal were removed from the site for recycling. Environmental issues of soil contamination and a 1000-gallon tank full of heating oil buried under the factory's concrete floor slab were addressed and students and faculty of the Construction Management Technology Program were involved in several aspects of this phase of the project. The local community was also involved in this project; several meetings were held by the Project Management and Evaluation Committee and a community activity was held on the project site to heighten awareness and encourage community involvement in the planning of the project. Challenges, successes, related issues of executing the project and a brief description of the work being done in the Site Planning and Development Phase are highlighted in this paper.

Introduction

The Princess Anne Athletic Center Project is a partnership between the University of Maryland Eastern Shore (UMES) and The Town of Princess Anne to convert a 4.5-acre old clam factory premises into an outdoor athletic center for the children of the Town. The project received the 2004 HUD-HBCU 3-year Grant Award in the value of \$340,000 for the construction of the athletic center. In addition, another \$130,000 received from the Maryland Department of Natural Resources by the Town of Princess Anne was earmarked as part of the cost of the demolition activity in the project. Figure 1 shows the condition of the project site before the demolition and site clearance exercises.

Four years ago, Princess Anne police became concerned that neighborhood children were entering the abandoned plant building and facility and using it as a kind of club house (skate boarding, graffiti, drugs, and sex). Figure 2 shows the condition of the building at the beginning of the project. The Town Code Enforcement Officer condemned the property and contacted the Maryland Department of Environment to request an investigation. The Department of the Environment cited the owner (who now resides in New Jersey) for certain environmental violations and supervised a cleanup of the property. Once the Department of Environment was satisfied, the Town entered into discussions with representatives of the owner about the

possibility of the property being given to the Town as a gift. Eventually the gift was made and the Town recorded the deed in 2004.



Figure 1 The Project Site

The plan was to construct an outdoor athletic center for the children of low-income families in Princess Anne on the property. The Facility included a 25,000 ft² building with several compartments, two loading ramps, sheds, a pump house and several horizontal and upright storage silos. There was a fairly large volume of metal scraps, two trailer containers, old machines and air-handling units on the roof of the factory building.

The project was designed to be implemented in three stages. The first stage comprised the demolition of the factory building, the loading docks and accompanying concrete slabs, dismantling all the silos and sheds and properly disposing of all materials: concrete, metals, steel, wood, concrete masonry blocks and clearing of the property. After the disposal of materials from the site, it was to be graded and landscaped. The second stage was the design and construction of the outdoor athletic fields and courts for soccer, basketball, baseball, and volleyball. The third and final stage comprised the construction of a parking area, lighting, restrooms, office, equipment storage room, and visitor seating. The three stages were further broken down into a total of six Activities with specific tasks. Each Activity was for a period of six months. The Activities were as follows:

Activity 1: Demolition included demolishing the old building and dismantling of storage silos and tanks. **Activity 2: Clearance of Site** included taking inventory of matured trees, and

disposal of metal tanks, silos and other materials in appropriate landfills. **Activity 3: Site Development and Planning** included the survey of the land, landscape design and development of a site plan with all proposed features in place. **Activity 4: Design of Infrastructure** included the design of the soccer and volleyball fields, basketball courts, and a play ground. **Activity 5: Construction of Fields and Walkways** included review of building plans, preparing contract documents and the construction of the fields, courts and walkways. **Activity 6: Construction of Equipment Storage Building and Office** included preparation of contract documents and the building of the Athletic Equipment Storage Building and Office.



Figure 2 Graffiti on Walls, Rusted Steel Roof Trusses and Part of Collapsed Roof

HUD Policy Priorities

This project satisfied the following HUD Policy Priorities.

- **Improving the Quality of Life in Our Nation’s Communities.** This project seeks to turn an abandoned dilapidated old factory facility that area children turned into a gang meeting place for anti-social activities into an outdoor athletic center where the children of low-income families can have a safe and supervised environment for athletic activities which will impact their healthy physical and emotional development. This will improve the quality of life in this community for the children as well as the adults. The Town of Princess Anne, currently does not have any athletic facility for the children.
- **Participation of Minority-Serving Institution in HUD Programs.** As an 1890 Land Grant and a Historically Black University, UMES’ mission is focused upon land grant imperatives for community outreach through partnerships and collaborations. Our goal in Community Outreach activities is to address the needs of the citizens of the local community and the State. In order to achieve this goal, UMES promotes community service and identifies community programs in need of support. UMES has been involved in many enriching activities in the local community in the past. However, this is the first HUD-HBCU grant that UMES has obtained and it is enabling it expand its role and effectiveness in the Princess Anne community by helping to provide this much needed Athletic Center for the children of the Town

Project Demolition and Site Clearance Activities

The tasks proposed in these two Activities were:

Activity 1 – Demolition

This Activity included the following:

- Demolition of the old building, removal of all metal doors, electrical and plumbing fixtures, roofing materials, steel roof trusses and pulling down the walls.
- Dismantling of all storage silos, fire hydrant and any other mounted structures and sheds.
- Removal of all buried structures including pipes and identified tanks
- Breaking-up of all designated concrete floors, slabs and ramps.

Activity 2 – Clearance of Site

This Activity involved clearing the site of all materials, cutting trees and mowing grass. This included the following tasks:

- Disposal of metal tanks, concrete, steel, old machines, trailers, dismantled sheds, roofing materials, steel trusses and any other items found on the site.
- Cutting down designated trees, cutting grass all around the boundary fence
- Removal of all garbage from site.
- Leveling all excavated areas and if necessary filling with selected top soil.

Request for Proposal for the Demolition and site Clearance Phases

This Request solicited proposals to perform demolition and site clearance at the site of the Princess Anne Athletic Center Project according to attached drawings and scope of work in accordance with stated requirements, attached Scope of Work Specifications, and applicable State of Maryland and Federal Laws.

The work consisted principally of providing bonds, labor, materials, equipment, and supervision necessary for the execution of the Demolition and Site Clearance components of The Princess Anne Athletic Center Project. The project included but was not limited to the demolition, site clearance and removal of debris, walls contaminated with lead-based paint and tanks as indicated in the contract documents. The project is located at 30660 Hampden Avenue, Princess Anne, Maryland. See Figure 3 for the site plan of the project.

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Figure 3 Factory Site Plan

The Request for Proposal was divided into two phases: Phase A and Phase B, see Figure 4. The two phases were separated by a drainage ditch running through most of the site. It was stipulated that the two Phases shall be executed separately and separate bids shall be prepared for them. Phase A shall be fully executed first, that is including the demolition, site clearance and the full construction activities. Phase B will be embarked on only after the full completion of Phase A and the availability of funds to complete it. Phases A and B may be executed consecutively if funds were available to do so. This plan of action was necessary to ensure that most of the grant fund was not spent on this phase of the project.

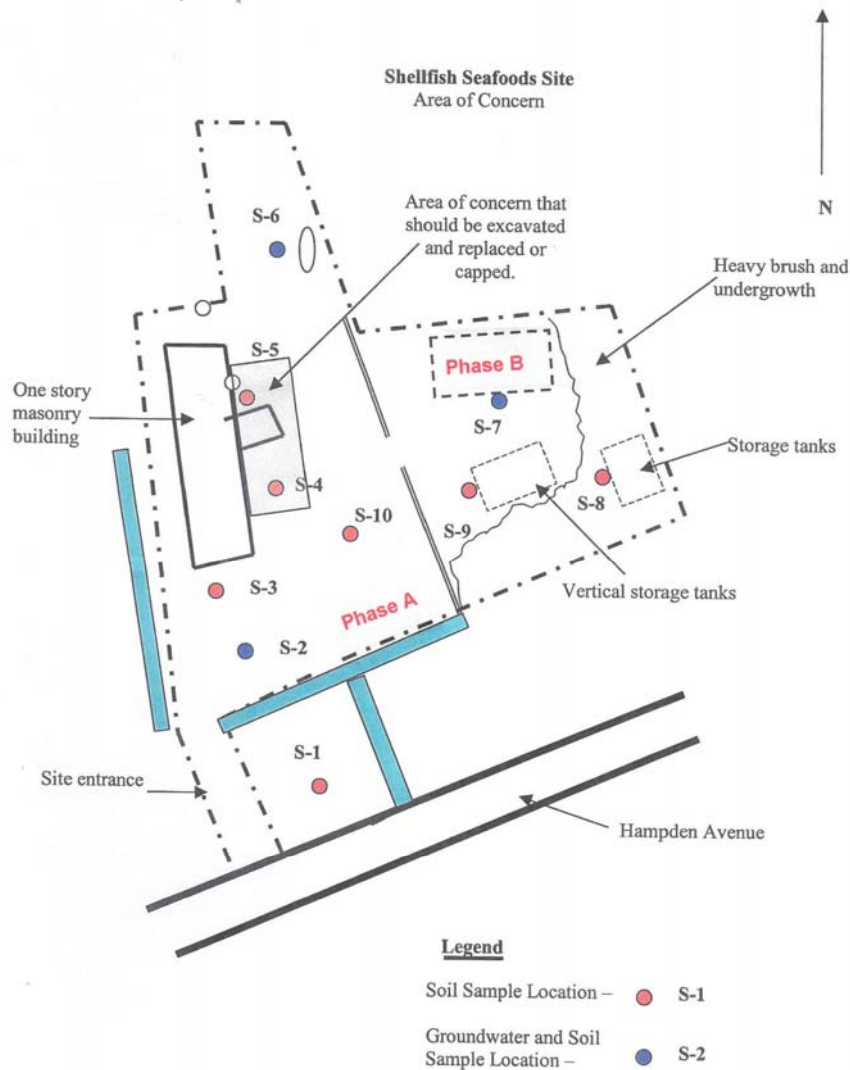


Figure 4 Phase A and Phase B Sections of the Project

Schedules of costs were prepared for each phase and the contractors completed these and indicated the total cost of executing each phase in their submitted bids. The University of Maryland Eastern Shore’s Office of Procurement used this RFP to prepare a bid package that was placed on the Maryland Contracts Register. Although four contractors toured the site and three interested parties attended the pre-bid meeting and indicated interest on the project, only two contractors submitted bids. The contractor that had the lower bid was awarded the contract. He had a lot of experience in demolition work and his bid price for the two phases was well within the budgeted cost. He was therefore awarded a contract to execute the two Phases as outlined herein.

Project Execution

The first activity by the contractor was the dismantling and removal of all tanks and their contents and support structures. All materials that were dismantled and removed from site were disposed of in appropriate landfills. A total of 29 steel tanks were dismantled, cut open, folded up, loaded onto a low-loader and taken to the recycling center. Figure 5, shows this process. Over 300 tons of scrap metal were removed from the site for recycling.



(a)



(b)



(c)



(d)



(e)



(f)

Figure 5 Cutting Tanks and Folding them up for Transportation to Recycling Center

The second action was the demolition of the factory building. This included the removal of all the air handling units on the roof, the roof and system, the walls and the floor. The loading docks and all other concrete slabs were broken up also, and several trucks of debris loaded onto trucks and taken to a landfill. Figure 6 shows this process.



(a)



(b)



(c)



(d)



(e)



(f)

Figure 6 Demolition of Factory Building and Removal of Debris

The third and last activity was the general clearance of the site which included the removal of all brush, trees and the grading of the site, the break-up and removal of all designated concrete floors, slabs and ramps, trees, heavy brush, and undergrowth. All materials that were dismantled and removed from site were disposed of in appropriate landfills. Figure 7 shows the grading operation and Figure 8 shows the project site after the completion of the demolition and site clearance phases.



Figure 7 Site Grading



Figure 8 Completed Demolition and Site Clearance Phases

Environmental Issues

It was determined that the walls of the old factory building contained lead paint. It was therefore important that all state and federal EPA requirements were followed in the demolition and disposal of the contaminated wall materials. The environmental evaluation of this section of the site showed that there was chemical contamination (arsenic) in a section of the site that was used as the loading dock. The concrete slab, foundation and walls in this contaminated area were broken up and properly disposed off and the soil dug to a depth of one (1) foot, removed and disposed off in appropriate landfills. After removal and disposal of the contaminated materials, this section was filled with approved soil and compacted in six (6) inches layers to the original level consistent with the rest of the site. The approximate area involved was established staking out 50 feet from the northeast and southeast corners of the factory building over the length of the building.

During the demolition and removal of the factory's concrete floor slab, a 1000-gallon tank full of heating oil was found buried under the concrete floor slab. The tank was about five feet in diameter and about six feet long. Figure 9 shows the buried tank. The Maryland Department of the Environment was notified and an official came to evaluate the site. A certified company pumped out 966 gallons of oil and properly disposed of it. The tank was cleaned out and taken to a designated recycling center. The soil around the tank was cut out and replaced by approved soil. All certificates of compliance were obtained from the Maryland Department of the Environment.



Figure 9 The Buried Heating Oil Tank

Faculty and Students Involvements

Faculty and students were actively involved in this project. The estimating class was required to prepare a bid for the demolition of the facility by the course faculty. The class visited the site and took measurements of all the features on the site. They prepared an inventory of all materials to be demolished and removed from site. They also got information on local metal recycling centers

and landfills. With all the information gathered including the inventory, the class was able to prepare an estimate for the cost of demolition and site clearance for the project. The class discovered that the regular estimating software used in the class did not offer much help for this project and it had to look for unit rates and other parameters from other sources. This exercise was a great learning experience on demolition projects for the students.

The architectural drawing and the site development classes were also involved in the planning and development of the athletic center. The site plan for the project was obtained from the local court house. With the bearings of the sides of the plot, the site was plotted. Next, the standard sizes of each of the proposed courts and fields, e.g. soccer field, basketball court and volleyball court, etc, were obtained from architectural data books^(1,2,3), and AutoCAD⁽⁴⁾ was used to obtain several schemes of placing these field and courts on the site. One of these schemes is shown in Figure 10. An aerial map of the site was downloaded from the internet^(5,6). This is a free resource that provides aerial maps of several US sites. The most recent aerial photo of Princess Anne, MD was in 1998. The site was virtually unchanged from 1998, the date the aerial photograph was taken and therefore the map proved to be valid.

The Principal Investigator and other Faculty and Staff involved in the project held regular project meetings to discuss the progress and plan the sequencing of the project. They visited the site and met with the contractor often.

In addition, three students worked regularly on the site to monitor the day to day progress of the work. They ensured that the work was done according to the contract terms. They measured out the areas to be dug and removed and took photographs of the activities of the contractor regularly. One of the students helped to develop a Webpage⁽⁷⁾ for the project.

Community Involvement

The Project Management and Evaluation Committee comprising representatives from the Town of Princess Anne and UMES met regularly to evaluate, discuss, and monitor the progress of the tasks and activities of the project. The committee has as one of its main goals to have the community fully involved in the project by creating an awareness of the project in various community forums. The Committee through its activities ensured that the project was being executed at all stages according to the tasks in the Activities set forth in the grant application. At the completion of this project, this committee shall transform to The Princess Anne Athletic Center Caretaker Committee that will oversee the proper management of the Center. In August 2005, the committee organized a picnic for the community at the project site to heighten the community awareness of the project. During this picnic, the people completed questionnaires to indicate the kind of activities they want built in the Center. There were two sets of questionnaires: one for children and the other for young adults/adults. A total of 125 questionnaires were completed and the results indicated that basketball is the most desired sport in the center. The responses will be considered in the final design of a community friendly athletic center. This project, through its Project Management and Evaluation Committee is enhancing the relationship between UMES and the Town of Princess Anne and is leading to the formation of an Action Group for the Town of Princess Anne and Committees to look into the creation of Maturity and Youth Centers for the community.

Site Planning and Development Stage

The next task in this project is site planning and development which will include the planning of several schemes that will establish the position of the fields and courts. This is already in progress and a typical scheme is shown in Figure 10.

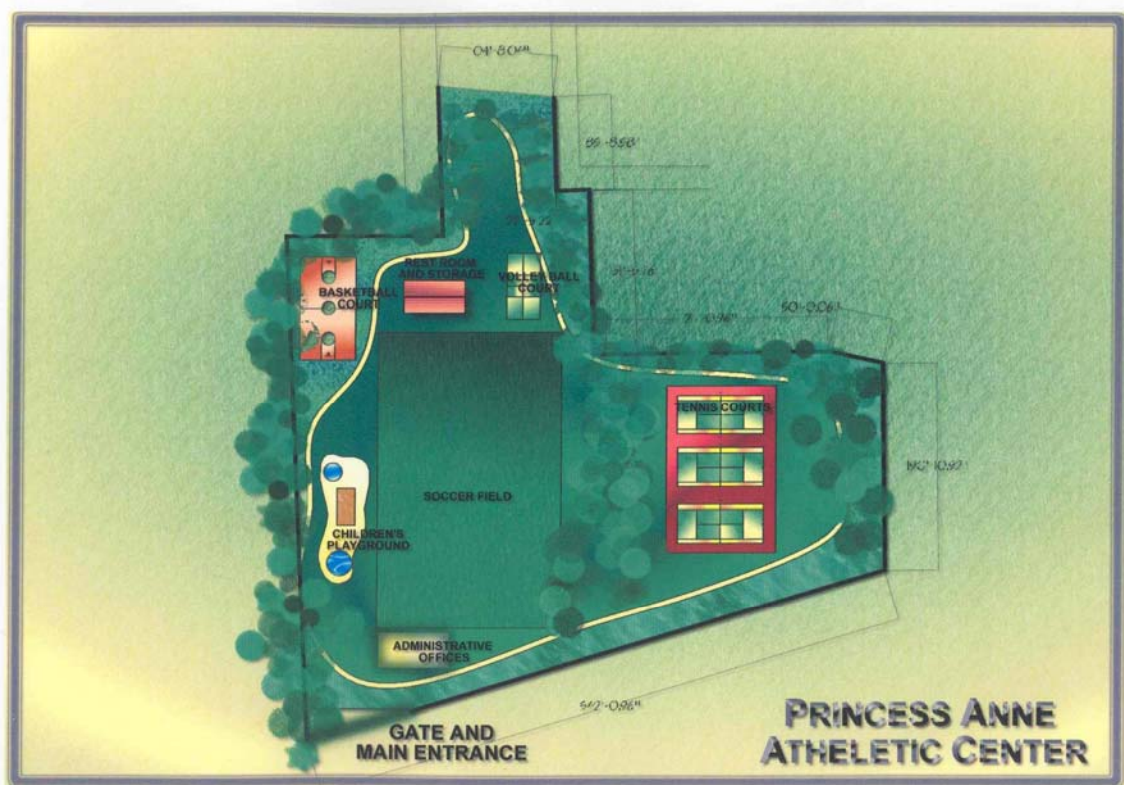


Figure 10 A Scheme for the Athletic Centre Showing Proposed Features.

Conclusions

The Demolition and Site Clearance Phases of the project have been fully completed. A Request for Proposal was prepared and used to prepare a bid package that was processed through the Maryland Contract System. This culminated in the award of a contract to execute these two phases of the project to a local demolition company. Over 300 tons of scrap metal were removed from the site for recycling and several trucks of debris were removed and taken to appropriate landfills. Environmental issues of soil contamination and a 1000-gallon tank full of heating oil buried under the factory's concrete floor slab were addressed by complying with state and federal environmental laws and appropriate certificates of compliance were obtained.

The project provided a great opportunity for faculty, staff and students to be involved in a demolition project. Students in the estimating, architectural drawing and site development classes were involved and it provided them a great learning opportunity on this type of

demolition project. Students were also involved in the day to day activities, taking photographs and creating and maintaining a web page for the project. Faculty and staff were involved in the planning, holding project meetings and giving general leadership to the project through the Principal Investigator.

The Princess Anne Athletic Center Project is uniquely improving UMES presence and contribution to the development of the immediate environment and the Town of Princess Anne by providing a much needed recreational facility for children of low to medium income families of the area. In addition, this project, through its Project Management and Evaluation Committee is enhancing the relationship between UMES and the Town of Princess Anne and has led to the formation of an Action Group for the Town of Princess Anne and Committees to look into the creation of Maturity and Youth Centers for the community.

The Center's development is on track and the project team is actively working on the next phase: the Site Planning and Development Phase.

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