

## Building a sustainable maintenance facility

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**“This facility will serve the needs of the Borough of State College for the next 50 years.”** No one knew just how accurate that statement would be when it was made prior to Borough Council approving construction of a new public works maintenance facility in 1961.

In the ensuing years, the Borough grew and the services provided by the Public Works Department grew right along with it. By the turn of the millennium, the truck garages were full and the department was parking about \$2 million in rolling stock in driveways and beside buildings every night.

Residential developments built upstream from the facility and a sediment filled neighborhood sink hole resulted in too frequent flooding events during or before which staff scrambled to move equipment to high ground.



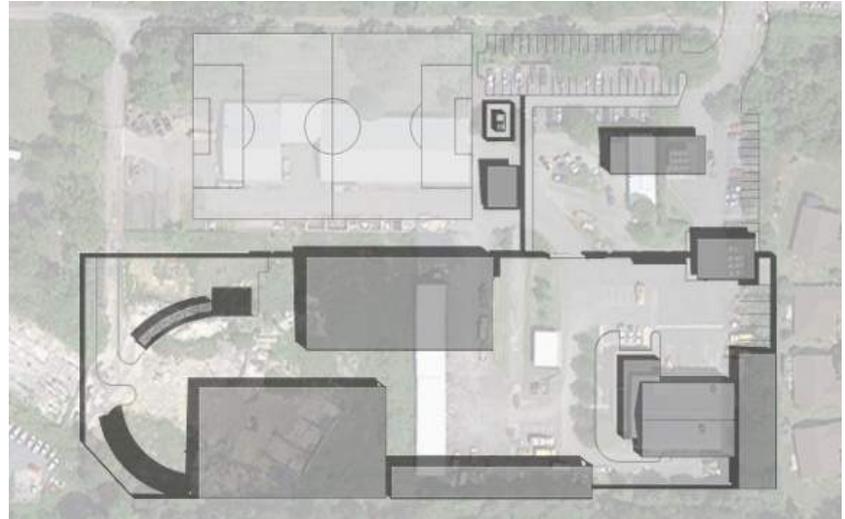
A concrete plant closed on an adjacent property, opening the door to a solution. The Borough acquired the property, which also happened to be in a neighboring township. The purchase set the stage for the construction of a new maintenance facility on the highest ground of the combined parcels. A

qualifications-based selection process yielded a local design team to prepare the land development plan. Design charrettes with public works crews and neighborhood meetings were staged to seek input on the project from the people using the facility and those living with it in their back yards. The land development plan team envisioned the campus, scaled the buildings, and conceptualized the storm water management plan. The team was very intentional about minimizing the impact of the facility on surrounding properties.



As environmentally conscious construction came to the forefront, Borough Council adopted a policy to build all new municipal buildings to qualify for LEED Silver certification at a minimum. Council appointed a citizen advisory committee to act as liaison to staff and the design team. Most members were Borough residents, predominantly from the neighborhoods closest to the facility. These citizens brought expertise to the advisory committee in such areas as construction, energy engineering and acoustics.

Council also recognized the impact the new facility would have on the local elementary school, which is in the Borough and a half-block from the facility, and residential neighborhoods in Ferguson Township, which borders the site. With one appointment, Council gave voice to both concerns by appointing the elementary school principal who lived a stone's throw from the project site.



The design professional for the construction project was selected following a second qualifications-based evaluation process. Buchart Horn's architects and engineers set about the business of designing the new facility to meet the environmental and operational needs of the department. This new facility would be built around an existing building with administrative offices, the mechanics garage and crew locker rooms. A significant phasing challenge awaited the Borough and the contractor, all owing to the fact that street and sewer maintenance, sanitation and tree crews had to operate from the old facility while the new one was being built around it.

The design professional and advisory committee began evaluating major design themes. Winter weather response means loaders and trucks with backup alarms at all hours of the day and night. The salt storage and cold truck storage buildings would be built along the property line to allow their mass to block most of the noise from on-site activities. General one-way traffic flow within the facility minimizes backing up, further limiting the noise of back up alarms.

All buildings would have LED lights and occupancy sensors to minimize electricity consumption. Site lighting includes both photocells and occupancy sensors. Minimal light levels will be maintained when there is no activity, but will increase instantly to maximum lighting when motion is detected.

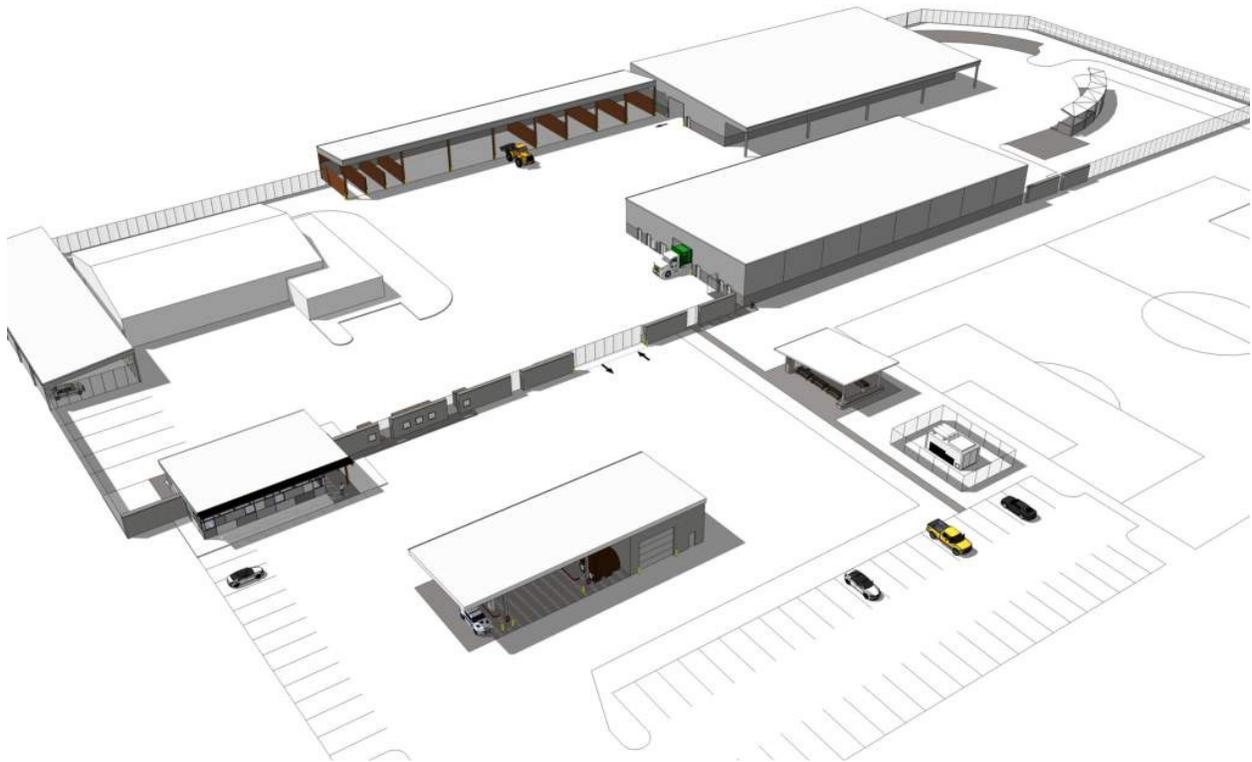
Equipment storage buildings would have large roof surfaces, ideal for rainwater harvesting. Two 20,000 square foot storage buildings would be built, one heated and one not, with their roof lines sloping toward each other. A 20,000 gallon rainwater collection tank would be buried between the buildings. The Borough will use this water to fill a sewer jetter truck, street sweepers, and large pressure washer tanks. The water is also piped to a holding area where trees, shrubs and flowers are staged in the spring planting season.



A new truck wash facility would include a canopy between the truck wash and the existing fuel island. The new canopy was designed with space for a CNG fueling island should the Borough's fleet of CNG-powered vehicles expand to the point that on-site compression makes sense. The drive through truck wash design includes under-carriage wash and customized wash cycles for each vehicle type. Wash water reclamation equipment will minimize the use of fresh water in the washing of vehicles and equipment.

The storm water management plan features a detention sump to contain runoff from most rainfall events, with a detention pond the size of a soccer field for the largest storm runoff events. The field may be used by the elementary school and by the regional parks and recreation department.

Employee parking will double as public parking for parks and rec activities which will generally occur during non-work hours. In addition, parking is made available in the staff lot for employees of the elementary school when their on-site parking is at full capacity.



The design professional worked with the advisory committee and staff to scope the LEED points within reach of the project. The only new occupied structure in the project was too small to qualify for LEED certification, but the “LEED Campus” concept had been born. While LEED Silver was the initial goal, the committee and architect determined that LEED gold was within reach. In the final analysis, with the expectation that tens of thousands of dollars would be added to the cost of the project to meet the LEED requirements, Council accepted the recommendation of the advisory committee to not pursue LEED certification.

Bids were opened in the fall of 2013 followed by ground-breaking in January, 2014. The staging was every bit as challenging as expected. The excellent working relationship between the Borough and general contractor Poole Anderson kept things moving forward in a positive vein. As the construction project concluded in February, 2015, public works crews used available time to “move in” to the new buildings. Already one wonders how crews managed in the leaky, flood prone, way-too-cramped buildings that just barely outlived that prophetic statement made to Council in 1961.

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