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# CONSTRUCTION TIMES

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**Extra Space Storage Howard Street Property**

## From Parking Garage To Self Storage

Huzzah! A new 137,000 sq. ft. Extra Space Storage property located at 2400 N. Howard Street in Baltimore, Maryland opened its doors on June 14, 2010 to tremendous local demand. The \$4,000,753.00 design/build project completed by Chamberlain Construction Inc. (CCI), consisted of the conversion of an existing, post tension slab parking garage and repair facility to self storage.

One of the design challenges faced by CCI and its professional engineering team in completing the conversion was changing the load bearing capacity of all the floor levels to meet code. The code for self storage requires a floor loading capacity of 125 lbs. per sq. ft., whereas the parking garage floor capacity was only 60 lbs. per sq. ft. To increase floor loading capacity, CCI removed the entire first floor slab on grade and replaced it with a structural slab. The engineering team designed a structural wall system for the second and third floors to increase the design support capacity. After the first floor slab was removed, CCI remediated soils contaminated by Verizon, the previous owner, caused by the leakage of oil and other lubricants through the slab and into the subgrade.

Extra Space Howard Street, located at the intersection of Howard and 24<sup>th</sup> Streets, is a three level facility with three elevators and two loading docks. The first loading dock is located at the first level on 24<sup>th</sup> street by the front office. Customers can load directly on the third level via a second loading dock, which is accessed from an alley off Howard Street. The property is 100% climate controlled and features sixteen security

cameras, an intercom system throughout the facility to connect with the office, and an alarm on every unit. The manager's residence, located within the self storage building, contains two bedrooms and two bathrooms. The property is located close to Johns Hopkins University, Loyola University and the Homeland communities in Baltimore.

The architect and structural engineer on the project was Michael Walkley, PA of Baltimore, Maryland. Bera Engineers, Inc. of Rockville, Maryland acted as the mechanical, electrical and plumbing engineer.



**The Whistle Stop Concession Stand**

## A Face Lift For The Whistle Stop

The Maryland Zoo in Baltimore, one of the family friendliest zoos in the entire country, is on a continuous quest to improve the zoo experience for animals and tourists. The Zoo, originally chartered by the Maryland Assembly in 1876, is the third oldest zoo in the United States. The grounds of the Zoo, located in Druid Park, are spread over 160 acres of verdant landscape with exhibits ranging from small animals in original Victorian era cages to large open plains in "Africa" containing herds of zebra and rhino. The charm of the Zoo for families are the many interactive exhibits for children that encourage them to tunnel like a ground hog or be a spinning turtle.

Chamberlain Construction Inc. (CCI) is honored to have played a part in the ongoing improvements at the Zoo. CCI's involvement first began during 2009, when CCI won a \$1,403,541 contract to renovate the Whistle Stop concession,

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the Sidetrack pizza concession and attached rest rooms, and the Chimpanzee restrooms. The exteriors of the two concession buildings were given a complete facelift using Hardie-Plank, Azek trim, columns fabricated from Azek trim, and EIFS. The interior walls of the concessions were gutted and new interior walls, fixtures, kitchen equipment, and sprinkler systems were installed. The newly restored bathrooms incorporated specialty handmade tiles from Terry Tiles depicting zoo animals as well as other custom finishes.

“The Zoo employees are extremely solicitous of the animals. Every material used in the renovation had to be approved by Zoo employees after being analyzed for possible negative effects on the animals”, says Douglas Chamberlain, President of CCI. “It was a challenge to be renovating while the Zoo was open to the public. Safety and Zoo rule compliance was paramount in our minds at all times” according to Douglas York, Project Manager.

CCI’s relationship with the Zoo continued during 2010 and included a remodel of the Oasis food service concession located near the giraffe house, a renovation of the animal hospital operating room, and remodeling of the IT area of the mansion house. In February 2011, CCI remodeled the main gift shop for the new Zoo concessionaire, Systems Associates, based in Denver. CCI will be responsible for ongoing small projects at the Zoo under a newly awarded \$557,260 *Zoo-Wide Miscellaneous Improvements* contract awarded to CCI in February 2011.

The architect on the initial renovation project was Aumen Asner Inc. of Baltimore and the engineer was Century Engineering of Hunt Valley. All other renovations were built according to specifications provided by the Zoo.



**Construction Of Four Story Storage Building  
At Pasadena**

## **Extra Space Pasadena Stakes Out A Strategic Location**

Location, location, location...the golden adage of real estate is what characterizes Extra Space Storage’s Pasadena property. The new 107,000 sq. ft. self storage property is nearing completion in Pasadena, Maryland with Chamberlain

Construction Inc. (CCI) acting as general contractor on the project. The \$4,939,886 contract with CCI included the demolition of three existing buildings and the construction of a four story building, two one-story buildings and a separate office apartment.

The property is located on 121 Mountain Road, a strategic location that will allow Extra Space to capture potential customers located in northwest Anne Arundel County. Large Federal government agencies slated for expansion in 2011, such as the National Security Agency and Ft. Meade, are located in Anne Arundel County and are expected to increase self storage demand.

According to Steve Sheedy, site manager, CCI faced significant jurisdiction related headwinds when building this job. “Anne Arundel County had announced that it would be laying off personnel in the building and permitting area. As a result, we faced significantly more scrutiny and obstruction from County inspectors”.

The architect on the project was HEGRA Architects of Baltimore, Maryland and the engineer was Bera Engineers, Inc. of Rockville, Maryland.

## **Building Green In Commercial Construction**



A green wave of environmental awareness is sweeping across the corporate world, including the construction industry. Developers and owners of commercial property are finding that saving the earth’s resources can also yield significant benefits, both monetary and intangible. The green building technologies of today are rapidly becoming the building standards for the U.S. construction industry of tomorrow.

At the forefront of this movement to build environmentally friendly structures is LEED, the “Leadership in Energy & Environmental Design” Green Building Rating System, which was developed by and is a registered trademark of the membership of U.S. Green Building Council (USGBC). The LEED rating system, establishes a nationally accepted standard for green buildings, and provides certification based on levels of compliance.

According to USGBC statistics, buildings account for 39% of annual greenhouse gas emissions, 40% of total energy use, and 13% of potable water consumption in the United States. The LEED ratings encourage conservation in usage of building materials and implementation of technologies that save energy, water and reduce harmful emissions.

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### **Who is adopting LEED?**

Governmental agencies have been at the forefront of the movement to adopt LEED standards. The Freedom Tower, World Trade Center Office Towers 2, 3 and 4, as well as the World Trade Center Memorial and Museum are designed to achieve LEED Gold certification. Other LEED Gold certified buildings in the Battery Park area include World Trade Center 7 and the world's first green residential high rise "The Solaire".

In general, private developers lag behind governmental agencies in their adoption of LEED building standards. Increasingly, however, corporations developing their own properties for long-term company usage are embracing LEED standards as a way to both reduce long-term operating costs and demonstrate environmental stewardship. Honda America's facility in Gresham, Oregon and Chevron's office complex in Louisiana are both LEED Gold certified.

### **Why build green?**

Building to obtain LEED certification can directly contribute to net operating income by reducing energy and water costs. Depending upon the design of the building, energy cost savings of 20% to 60% or more and water cost savings of 10% to 30% or more are achievable in a LEED certified project.

Other advantages of green buildings include higher appraised building value, reduced tenant vacancy, and a more rapid absorption into the market. Another significant intangible benefit, particularly to corporate owners, is the public relations acclaim and prestige that comes with acting in an environmentally responsible manner. Developers can often achieve less resistance in the permitting process if the new building is designed and constructed to achieve LEED certification. Certain states, including Maryland, are encouraging private developers to develop LEED compliant buildings by awarding tax credits for green buildings. The \$25 million in tax credits authorized by the Maryland General Assembly have already been fully allocated.

### **Does building green increase construction costs?**

Several studies based on LEED certified buildings have concluded that the initial construction costs of a green building are either the same as or only slightly exceed comparable non-green buildings. The Massachusetts Technology Collaborative for the State of California Sustainable Building task force concluded that additional upfront costs of about 2% to support a green design resulted in life cycle savings of 20% of construction costs.

### **How does LEED certification work?**

The LEEDv3 program presents a template by which to measure a project's attainment of sustainability objectives, particularly emphasizing energy efficiency and CO2 emissions reduction. A building project is awarded LEED credits for achieved benchmarks within each category. Depending

upon the number of credits earned, projects are awarded, in ascending order of compliance, with Certified, Silver, Gold, or Platinum LEED certification.

The USGBC offers specific LEED programs in the following areas: *New commercial construction and major renovation projects, Existing building operations and maintenance, Commercial interiors projects, Core and shell development projects, Schools, Retail, Health Care, Homes, and Neighborhood development.*

### **Brief Summary of LEED guidelines for new construction**

Credits are awarded based on a checklist of activities developed by LEED for the program areas listed above. The LEEDv3 Registered Project Checklist provides opportunities to earn credits in the following broad areas: *Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality and Innovation, Design Process, and Regional Priority.* In order to be LEED Certified a project must earn 40-49 credits, Silver Certification requires 50-59 credits, Gold Certification requires 60-79 credits and Platinum Certification requires 80 and above credits.

In each category, there are numerous opportunities to earn credits. In the *Sustainable Sites* section of the checklist, for example, the project can earn credits for choosing a sustainable site such as redeveloping a brownfield, locating the project in an existing structure or using an in-fill strategy to preserve land. Credits are also awarded for reducing heat island effect, achieving environmentally friendly storm water management and maximizing open space. In the *Water Efficiency* section of the checklist, projects earn credits by using water efficient landscaping and water use reduction techniques. In the *Energy and Atmosphere* section of the checklist, projects are required to meet minimum energy performance, fundamental refrigerant management and commissioning of the building energy system. Credits may also be earned for on-site renewable energy and optimization of energy efficiencies. In the *Materials and Resources* section of the checklist, credits are awarded for recycled content and reuse, building reuse, the use of regional materials and materials that are renewable. In the *Indoor Environmental Quality* section of the checklist, projects must meet minimum internal air quality performance and tobacco smoke control. Projects are also awarded credits for the usage of low-emitting materials, day light and views and thermal comfort and the controllability of lighting and thermal comfort systems. In the *Innovation and Design Process* section, a credit is awarded for the use of a LEED accredited professional and innovation in design. The *Regional Priority* checklist awards credits for addressing geographically specific environmental concerns.

### **How to start the LEED certification process?**

The first step for project teams interested in obtaining LEED certification is to register their project online on the LEED website, [www.leedbuilding.org](http://www.leedbuilding.org). The USGBC recommends registering during the earliest possible phase of the

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project in order to obtain maximum potential for certification. Consultation with an architect knowledgeable in green building is critical as green features must be integrated into the project design as early as possible.



**Chicago City Hall Green Roof**

## **Q: Ancient Technology For Cooling Buildings**

## **A: What Is A Green Roof?**

Green roofs are living plantings that are placed on the roof of a building. The leafy coverage of a green roof helps cool the outside air through evaporation, by providing shade, and by forming a lighter colored surface. The soil and plants also create more insulation to keep hot and cool air inside. The evaporation part works much like the human body's way of cooling off through sweating; when the sweat evaporates it takes the heat with it. The green roof dates back thousands of years to the hanging gardens of Babylon, one of the Seven Ancient Wonders of the World.

There are three different types of green roofs: extensive, semi-intensive, and intensive green roofs. Extensive green roofs are low maintenance, require no irrigation, and contain plants such as moss, sedum, herbs, and grasses. A typical extensive green roof weighs 13-30 lbs per sq. ft. and has a soil depth of up to six inches with simple drainage systems.

In contrast, intensive green roofs are high maintenance, must be irrigated regularly and can support moss, sedum, herbs, and grasses as well as trees and shrubs. Due to the increased soil depth, the weight of an intensive green roof adds 35-100 lbs per sq. ft. as the soil depth must be at least 1 foot. Intensive green roofs have a correspondingly higher cost for structural systems and must have a complex drainage system.

The semi-intensive green roof is in-between the extensive and intensive green roofs. Buildings can contain both extensive and intensive green roof areas. Intensive green roof areas containing trees and shrubs can provide a park like setting for building occupants to enjoy in a city environment.

## **Commercial Solar Incentives**

Significant incentives exist for solar installation on commercial properties from both the Federal government and state governments.

### **Federal government incentives**

- Corporate tax credit equal to 30% of installation cost with no maximum limit.
- 100% depreciation election until the end of 2011.
- The American Recovery and Reinvestment Act of 2009 allows taxpayers eligible for the federal renewable electricity production credit (PTC) to take federal business energy investment tax credit (ITC) or to receive a grant from the U.S. Treasury Department. The grant is only available to systems where construction begins prior to December 31, 2011.
- Eligible solar property includes equipment that uses solar energy to generate electricity, to heat or cool or provide hot water for use in a structure. Eligible systems must be placed in service on or before December 31, 2016.

### **Maryland government incentives**

Maryland provides a grant of \$500/kW installed up to a \$50,000 maximum.

### **Other Incentive Programs**

Maryland Solar Renewable Energy Certificate (SREC) market.

Load Servicing Entities are required to purchase 2% of their total energy output from solar energy systems by 2022.

Utilities bid on the market for available SRECs.



*See Fall 2011 Issue of Construction Times for a more in-depth article on green roof technology.*