Site Design Features: Enhancing Sustainability

Advocate Lutheran General Bed Replacement Tower Project

The integrated design of the gardens and surface water management system for the new bed tower was conceived to tell the story of water in a visible way that celebrates its value to life. The design includes an extensive green roof, permeable pavement, rain gardens and a rich plant palette all of which work together to create a sustainable landscape environment for patients, staff and visitors.

GREEN ROOF.

At the top, the bed tower has an extensive green roof that holds, filters and evapotranspires water and releases it slowly through internal building drains to the rain garden system. A little more than 70% (71.4%) of the main bed tower roof is covered with plants.

PERMEABLE PAVEMENT.

Most of the internal road between Tower Drive and Western Avenue is constructed of a concrete paver that is permeable to water due to holes between the individual pavers. These pavers are stronger that asphalt and will last significantly longer without requiring repair or resurfacing. The stone bed under the pavers is constructed of ¾" open graded stone that is close to 2.5' deep. This depth was deliberately calculated to hold the maximum amount of water for 24 hours as required by the Metropolitan Wastewater Reclamation District of Chicago. The water is slowly released from the stone to the city stormwater system significantly cleaner and cooler than it would have been when released by a standard system. This system is more protective of the Des Plaines River watershed.

RAIN GARDENS.

The integrated rain garden system consists of a series of six terraced planting beds on both sides of the road from the Patient Discharge area on the northwest corner of the new bed replacement tower to the eastern end. They are filled with a specially manufactured soil made with a high sand content so it is very pervious to water. These gardens receive the water that falls on them and the water that is released from the green roof. Each rain garden consists of three terraces that step down from west to east. If the first one fills with water it will spill over to the second terrace and then to the third. If they all fill, there is an overflow drain so they don't flood on to the sidewalk.

There is also a western rain garden next to the main entrance that receives water from a section of the roof in the SW corner of the tower via a stainless steel runnel that runs along the back of the rain garden. Water is first released into this rain garden to the stone channels that transect the garden in line with the stone benches.

The rain gardens are designed to be "dry" gardens in that the same layer of stone that is under the permeable pavement is also under the special soil in the rain gardens to detain the water that passes through the amended soil.

STORING RAIN WATER.

Approximately 35% of the volume of the stone layer under the permeable pavers and rain gardens is void space that holds the water that is received from surface rains and meltwater and slowly releases it to the City stormwater system. The rate of release is controlled by specific restrictor valves that are part of the system.

SURFACE RUNNELS.

The retaining walls that form the north side of the rain gardens reflect the curve of the building. A bronze outfall low on the east side of the retaining walls releases water from the stone layer under the pavement and rain gardens to a concrete runnel that becomes integrated into the Spiral Garden at the east side of the property. The end point of the runnel in the garden is the end point of the surface water management system.

LANDSCAPE DESIGN.

The landscape was deliberately designed to eliminate the need for lawn, reduce the need for watering and eliminate mowing. All plant species were selected for their adaptability to dry conditions. They include a mix of native plants, cultivars of native plants and non-native species that are adapted to the expected conditions of the site. Once established, they should not require supplemental watering.

LEED.

The LEED credits supported by the water management system and landscape design include: SS 5.1-Site Development: Protect and Restore Habitat; SS5.2-Site Development:Maximize Open Space; SS 6.1-Stormwater Design: Quantity Control; SS 6.2-Stormwater Design: Quality Control; SS 7.1- Heat Island Effect Non-roof; SS 7.2-Heat Island Effect, Roof; WE 1.1-Water Efficient Landscaping: Reduce by 50% and WE1.2-Water Efficient Landscaping, No Potable Use or Irrigation.

Advocate Health Care

Conservation Design Forum

Courtyard Garden Design Features:
Providing Opportunity for Healing and Meditation
Advocate Lutheran General Bed Replacement Tower Project

- The design of the courtyard garden is intended to provide a variety of private spaces for patients, visitors and staff in the area enclosed by the new building and the existing hospital.

- The spaces are differentiated by the natural forms of earthen mounds and plants of differing heights. Seating areas include a large rectangular concrete patio that "floats" on a bed of chipped bluestone. An elliptical patio that mimics the shape of the mounds terminates the eastern end of the space and a connecting walk to Yacktman leads to a small seating area for children that includes a dragon sculpture set on a rubberized surface.

- The Meditation Garden is accessible from the main hospital, the family waiting area, the hospital chapel and the Yacktman Pavilion and can be viewed from a variety of internal building locations including patient family areas. The earthen mounds, in addition to separating the space, also raise the level of the plants closer to the first floor windows for easier viewing from the inside.

- The garden is a demonstration garden for native plant species for sun and shade and includes plants of Illinois forests and prairies. Although they are used in restoration projects, many are not typically seen in public gardens. They include Virginia Knotweed, Sharp-lobed Hepatica, Bottle-brush Grass, Pennsylvania Sedge, Wild Columbine, Dog-toothed Violet, Big-leaved Aster and Zig-zag Goldenrod to name a few. There are a total of 32 native species planted in the garden. In many areas they are planted as a mixture, as they would be seen in the wild.

- The plant variety has been selected to provide changing color, texture and views through the seasons, and it is hoped that the patterns and sounds of form, shade and wind will help bring ease to those who sit in its embrace.

- The courtyard garden is continued on the second level Pediatric Deck, an outside area for pediatric patients that overlooks the Meditation Garden. Children can get a close up view of the native plants there that include Wild Geranium, Wild Strawberry, and Pennsylvania Sedge. The Pediatric Garden also includes a small shrub, Maple-leaf Viburnum and the larger Common Witchhazel.

- Because of the enclosed nature of this garden space, the design team chose to not include a rain garden system.

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