

## Penguins Lower Hill Redevelopment

Water Sub Group

October 17, 2012

### Summary of Effort

State of the art stormwater collection, treatment and storage techniques were researched for developing stormwater management strategies appropriate to the site and master plan for the Lower Hill Redevelopment. Water consumption analysis was performed for the anticipated development program. A draft report<sup>1</sup> was prepared addressing base line recommendations, to be followed at a minimum, along with additional restorative strategies that would take stormwater management implementation to the next level by recommending reuse and retention. Typical and precedent costs for suggested strategies were presented.

### Incorporation in PLDP

Stormwater management approach as informed by the research and documentation of the Water Sub Group has been incorporated in the Lower Hill Preliminary Land development plan (PLDP) under Section 7.2: Stormwater Systems Integration.

Storm water criteria to meet the City of Pittsburgh's Stormwater ordinance and the US Green Building Council's (USGBC) LEED® for Neighborhood (ND) rating system have been written into the PLDP document to ensure that developers and end users are cognizant of the stormwater goals that need to be met during development and maintained post construction in both the public and private realm.

Green infrastructure approach to meet the goal of retention of 1.2 " of rainfall<sup>2</sup> has been incorporated in the PLDP document identifying design strategies for reduction at source (Individual block level and public streetscape), pretreatment and conveyance (public streets at steeper slopes) and subsurface infiltration for aquifer recharge and retention cisterns for reuse (public open space to assist with retention on site goals)

In addition to Section 7.2, inserts addressing streetscape and landscape treatment and design guidelines have been incorporated in appropriate sections as applicable through the document. Aspects addressed include

- Design strategies such as infiltration planters, green roofs, planting area percentages to assist with capture and retention.
- Hardscape surface treatment/ materials to assist percolation.
- Softscape plant palettes to reduce irrigation demand and storm water generation at source.

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<sup>1</sup> Former Civic Arena Neighborhood –La Quatra Bonci Associates, Nitsch Engineering January 30 2012

<sup>2</sup> 95<sup>th</sup> percentile storm depth based on historic rainfall data for the city of Pittsburgh -Sourced NOAA(1980-2010)

## LEED Neighborhood Development

LEED ND goals for stormwater management align with the City of Pittsburgh's Stormwater ordinance. The volume of rainfall to be retained on site through infiltration, evapotranspiration or reuse to meet the District regulations will allow the project to meet LEED ND criteria at the highest level. Developers and end users will be expected to meet stormwater management goals at the micro/ individual component level to allow the development as a whole to comply with the loftier goals of retaining the 95<sup>th</sup> percentile storm depth.

Additionally, a plant palette has been provided to assist with meeting criteria for water efficient landscaping reducing potable water for irrigation by a minimum 50% for a midsummer baseline.

## Pittsburgh 2030 District

2030 Districts<sup>3</sup> are being formed throughout the US to provide a business model for urban sustainability. These unique public/ private partnerships bring together property owners and managers with government entities and community stakeholders to develop creative strategies for meeting energy, water and vehicle emissions reduction targets by the year 2030.

The Pittsburgh 2030 District<sup>4</sup>, an initiative led by the Green Building Alliance (GBA) headquartered in Pittsburgh, has proposed for the entire downtown Golden Triangle of Pittsburgh to share best practices and verification methods to inform process for meeting these goals. In keeping with their vision of sustainability for the Lower Hill redevelopment the Penguins, as Founding Partners of the 'Pittsburgh 2030 District' support the Water Use goals of the 2030 district by targeting an immediate 50% reduction below the current District average.

To help with implementation strategies such as rain water cisterns below 10% dedicated Urban Open Space facilitating harvesting, and reuse for flushing toilets and irrigation will help in meeting the 2030 district goals as well as the City's Stormwater Ordinance.

The redevelopment project will share best practices and lessons learned to enhance performance levels across the district.

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<sup>3</sup> <http://2030district.org/>

<sup>4</sup> <http://www.2030district.org/pittsburgh/>