Penguins Lower Hill Redevelopment

Materials Sub Group
October 17, 2012

Summary of Effort

Smart material choices with a high level of impact in generating high performance buildings were researched. Best practice examples were studied in the context of standards complied with, funding sources available and the time lines for construction. Materials were evaluated in terms of components and the whole product. Implementation and performance monitoring strategies were looked into. A draft 'Supplier, Materials and Products List' was prepared listing materials by category including recommended key attributes of preferred materials.

Incorporation in PLDP

A framework for material recommendations informed by the research and documentation of the Materials Sub Group has been incorporated in the Lower Hill Preliminary Land development plan (PLDP).
Section 4.3: Building Materials and Systems incorporates performance goals for various building systems as established by the Material Sub Group. These goals are intended as a guide when selecting specific building materials that must also comply with the design team's permitted and prohibited materials lists.

Section 5.5 : Materials specifies materials for hardscape in public rights of way, open spaces and development blocks. Performance goals include storm water management and microclimate amelioration by reduction of the heat island effect. Lifecycle analysis, embodied energy in production, recycled content and regional procurement were underlying attributes for material recommendations.

The intent of the PLDP document is to provide for the regulation of plans and development such that actual designed development encapsulates the vision plan as envisioned by owners, designers and the city. In keeping with the concept of the vision plan, where only the street network and infrastructure are fixed, material recommendations incorporate flexibility by specifying a broad range of materials governed by their ability to meet performance goals. Additionally, best practice recommendations have been included to promote the use of recycled materials procured regionally to give impetus to local/ regional businesses while reducing environmental impact of material choices.

LEED Neighborhood Development

Material recommendations for meeting building performance goals at the micro (individual building) level and green infrastructure goals at the macro (master plan) level have been included in the PLDP.

Recommendations are based on assisting compliance with the   US Green Building Council's (USGBC) LEED® for Neighborhood (ND) rating system goals that include building energy efficiency, storm water management, heat island reduction and recycled content in infrastructure.

Pittsburgh 2030 District

2030 Districts[1] 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[2], 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 CO_2 Emissions of Auto & Freight goals of the 2030 district by targeting an immediate 50% reduction below the current District average.

Materials recommendations encourage sustainable choices based on the evaluation of embodied energy and associated emissions for transportation of raw material from source of extraction to manufacturing sites. Additionally, regional procurement will be preferred choice to reduce freight emissions resulting from delivery of manufactured products.

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

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[1] http://2030district.org/
2 http://www.2030district.org/pittsburgh/