

High Technology Building & Biological Storm Water Treatment

Group 1:

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High Technology Building: Case Study A

Paykar Bonyan Panel Factory



ARAD (Architectural Research and Design)

Parand Industrial City, Iran

\$1.8 Million

56,000 sf.

The project is a factory that contains a prefabricated building system production plant with an office and ancillary building. Produces material comprising polystyrene panels with concrete to create load bearing walls and other components

High Technology Building: Case Study A

Paykar Bonyan Panel Factory

The client wanted the factory to be industrial looking but share no resemblance to traditional factories, i.e. boxes

The Architect repeated the same structural frame through the whole building, rotating the form 180° for every other bay

Repetition greatly reduced the cost of the building

Even using two bay forms is relatively inexpensive

Differences in adjacent bays allow natural light into the building interior

Structural bays allows for easy expansion



High Technology Building: Case Study A

Paykar Bonyan Panel Factory



The designers used clean, light colored materials giving the appearance of a sophisticated, well maintained, cutting edge business

Light colors reduce artificial lighting needs by reflecting more daylight through the spaces

Paykar Bonyan Panel Factory

Programmatic elements in the building are separated by sky bridge

The designers wanted the Administration and VIP area to be quiet, away from busy/noisy manufacturing floor

Also allows drop off zone for VIPs, and interesting building entrance.

Administration end has view of mountains nearby



High Technology Building: Case Study A

Paykar Bonyan Panel Factory



18-Wheelers drive around entire building to get in and out of site

A ramp on the southern side of building provides loading/unloading access (not covered)

Site is a large hardscape pad...

Paykar Bonyan Panel Factory

Production floor is large open space with large span structure above

Visually interesting interior compared to most production facilities

Lots of natural daylight, artificial lights are not always needed

Columns in the space slightly prohibit production equipment layouts



High Technology Building: Case Study B

E.J. DeSeta Building



Kling Stubbins

Wilmington, DE

\$11 Million

94,000 sf.

E.J. DeSeta building serving as the new home for the Buccini/Pollin Group, a 50 year old metal fabrication company. Known for architectural ductwork, architectural metal work, including furniture, partitions, and wall coverings.

High Technology Building: Case Study B

E.J. DeSeta Building

Buccini/Pollin needed only office space, but the structure's visibility would also signal the company's commitment to this emerging market.



High Technology Building: Case Study B

E.J. DeSeta Building



Narrow building shape allows light from both side and views in two directions

Outdoor terrace offers sunset panoramas of the city

E.J. DeSeta Building

The building is clearly split to reflect the two components of the program: a 70,000 SF metal fabrication workshop and a 24,000 SF office area.



1. Lobby
2. Lunch room
3. Fabrication
4. Loading
5. Office
6. Gathering
7. Drafting



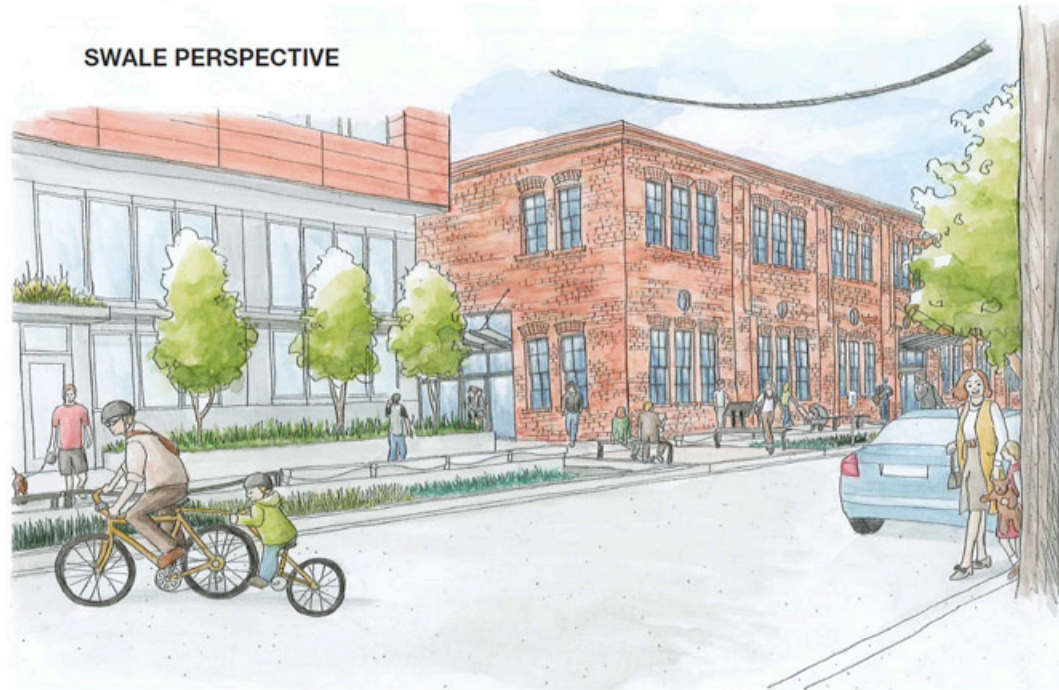
Summary

- Building Type Characteristics
 - Contains long span modular structure
 - Homogenous space
 - Separation of offices and production
 - Attention grabbing 'high tech' look

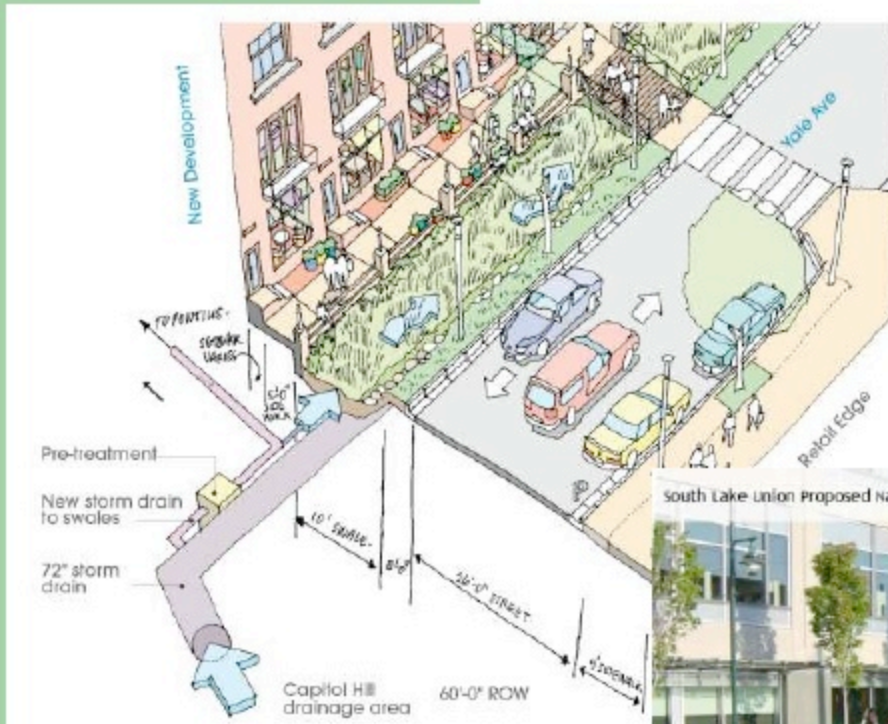
Swale on Yale Project, Seattle, WA

Swale on Yale Project Details:

- Cleanse 630 acres of Capitol Hill Basin
- Treat stormwater runoff before it enters Lake Union
- Use cost effective treatments while preserving land use area



Swale on Yale Project, Seattle, WA



Swale on Yale Project, Seattle, WA

How it works:

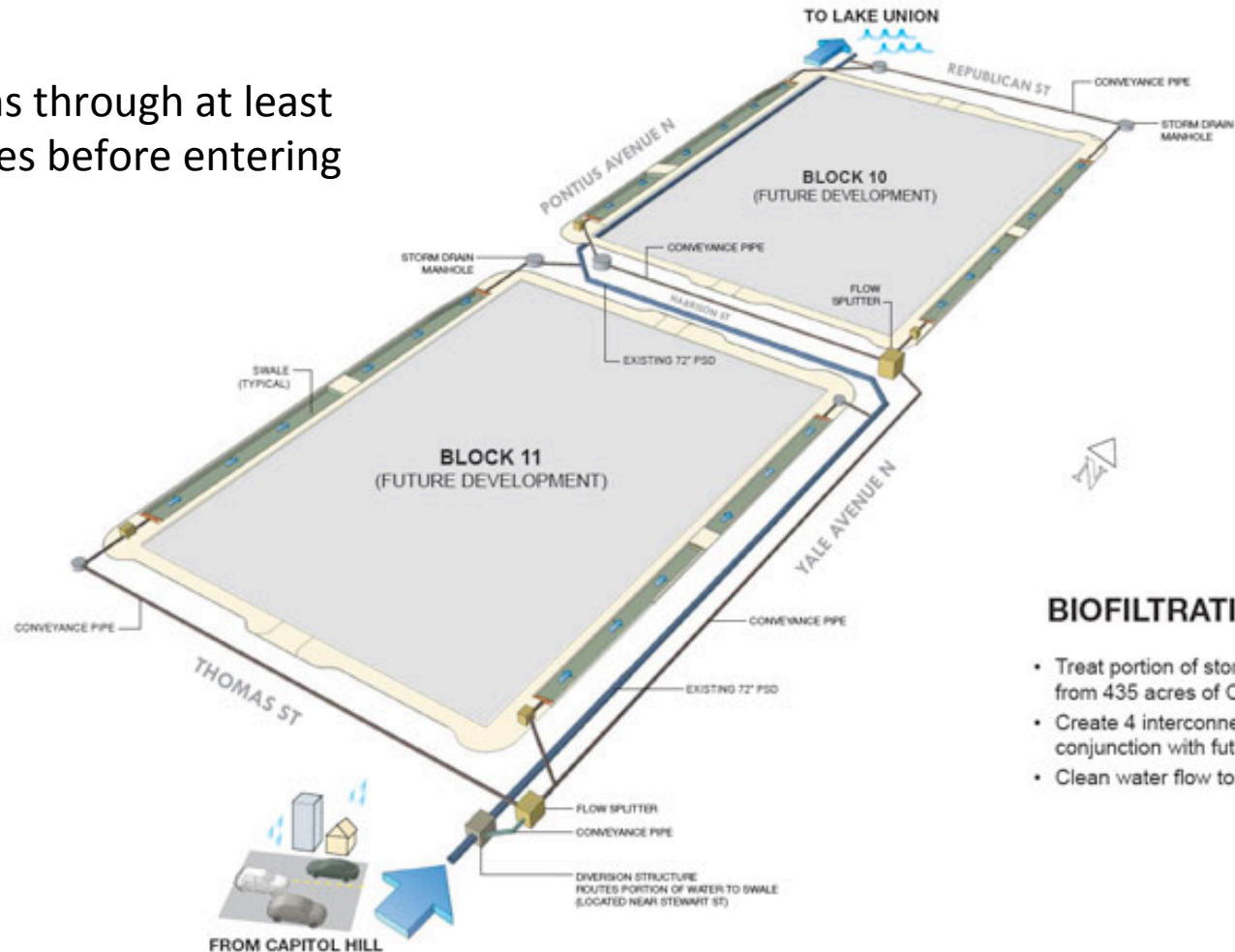
Diversion Vault -an underground tank diverts runoff into the bio swales

Swirl Concentrator -spins stormwater to separate large solids and trash to collect in a sump



Swale on Yale Project, Seattle, WA

Stormwater runs through at least two of the swales before entering Lake Union

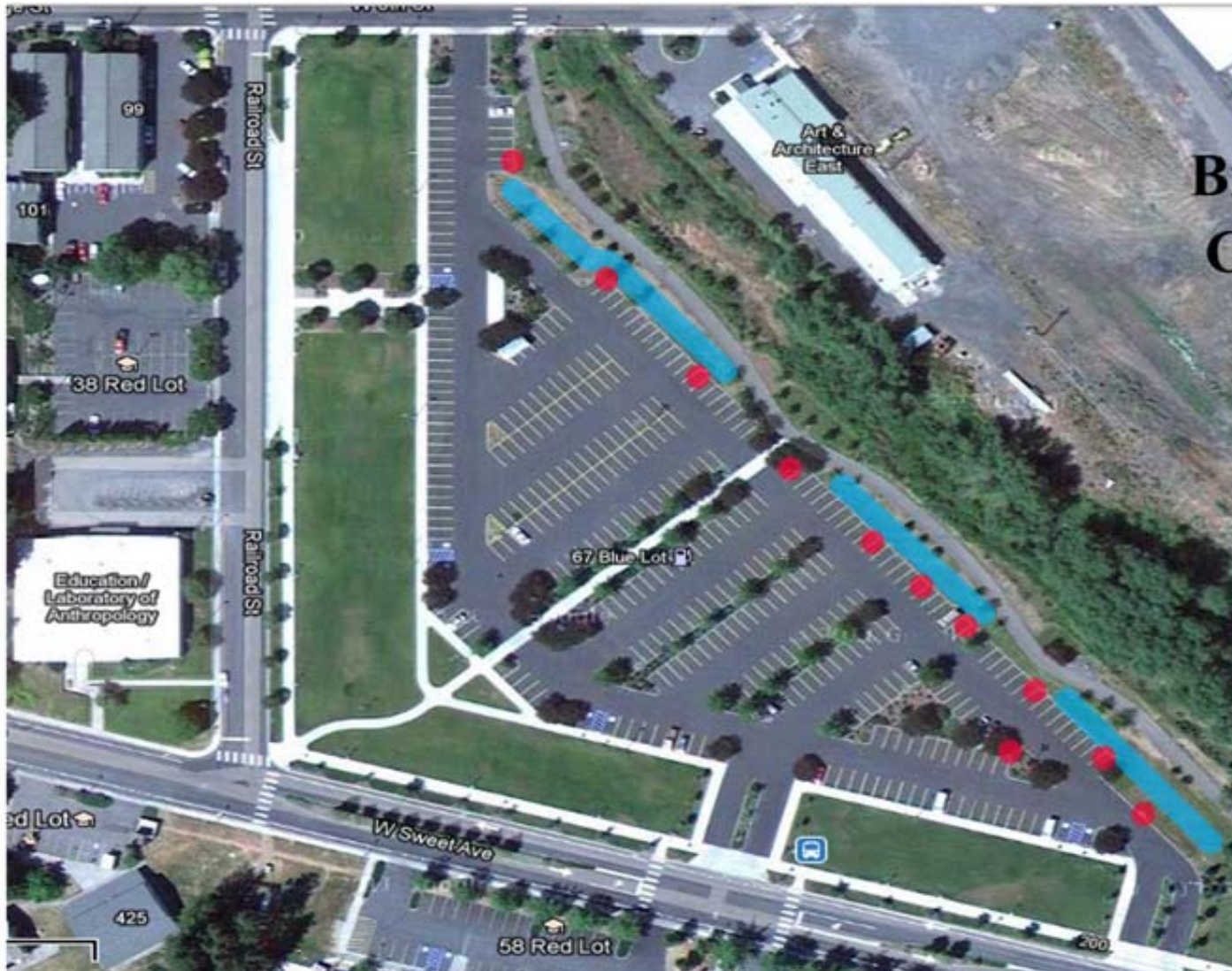


BIOFILTRATION SWALE

- Treat portion of storm water draining from 435 acres of Capitol Hill
- Create 4 interconnected swales in conjunction with future developments
- Clean water flow to Lake Union

*All information gathered from Seattle.gov Public Utilities website

Sweet Avenue Campus Parking, U of I



Bio-swale ———
Curb Cuts ●

Sweet Avenue Campus Parking, U of I



Numerous curb cuts along the north side of the parking lot allow the entire site to drain into bio-retention ponds (swales)



This curb cut allows stormwater to drain through a large planted island and toward the retention area to the north

Stormwater Management: Case Study B

Sweet Avenue Campus Parking, U of I



Greilickville Harbor Park, MI



Client: Elmwood Charter Township

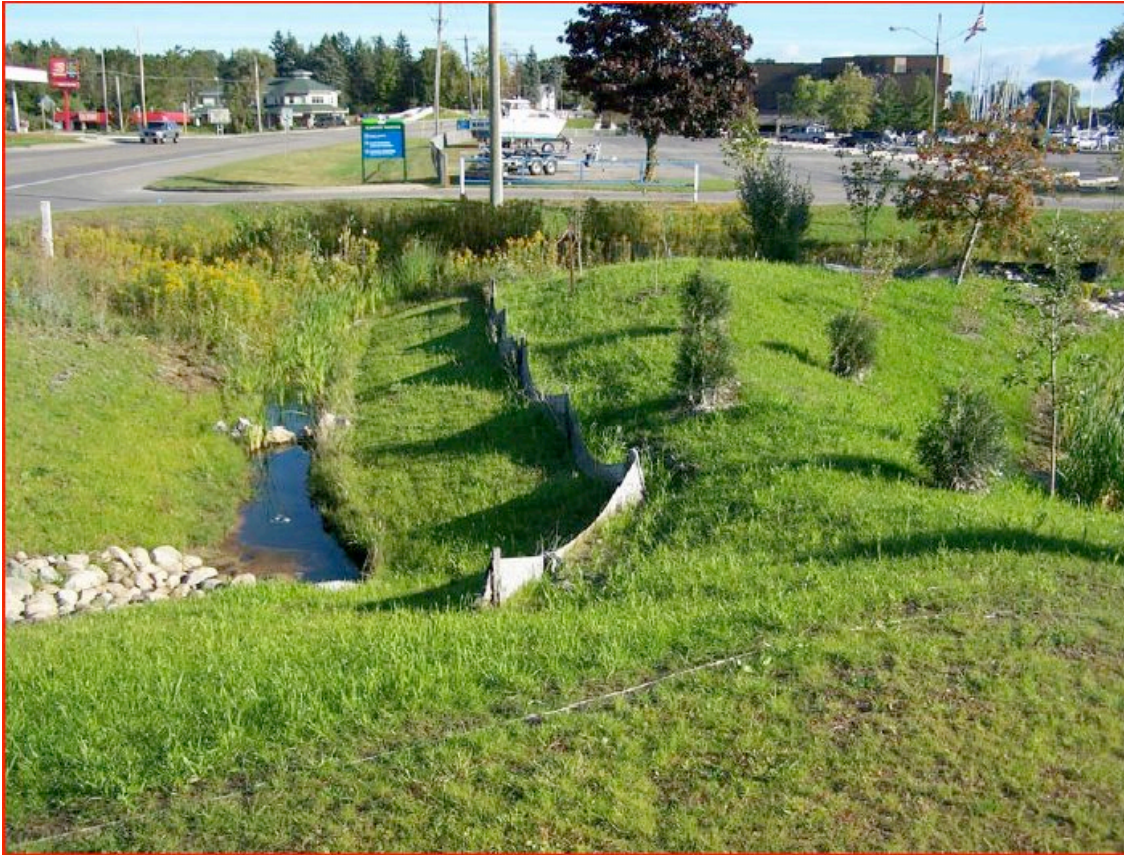
Design firm: Gosling Czubak Engineering Sciences, Inc

Project Type: Open space-Park, Redevelopment Project

Design Features: Bio-retention facility, rain garden, porous pavers, curb cuts. Creek corridor native vegetative buffer widening and planting, no-mow areas, wetland plantings, deep-rooting fescue for “lawn” areas

Stormwater Management: Case Study C

Greilickville Harbor Park, MI



Estimated Cost: \$50-\$100,00

LID Costs: about 10-15% over traditional construction

Performance: Nearly 100% of stormwater is retained on site