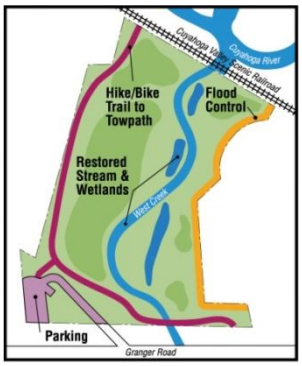
Kent State University
College of Architecture & Environmental Design
CAED

FALL SEMESTER 2009 CHRISTOPHER LOBAS, Instructor
SUSTAINABLE DESIGN

PROJECT 1: CHARRETTE
WEST CREEK INTRODUCTION

SITE: Site at the confluence of the West Creek and the Cuyahoga River
STATUS: Reclaimed floodplain, with majority impervious surface
FUTURE USE: TBD. Community development with controlled impact.



PURPOSE: An immediate introduction to
1) Our site
2) Our clients and their philosophy

CONCEPTS: Land ethics: Sensitivity to landscape as site in architectural design
Material aesthetics: Materially & tectonically rich response to program
Material utilization: Awareness of local availability of materials
Construction impact: Tread lightly on land on & near constructed area
Water sensitivity: Take care not to pollute bodies of water near site
Understand the floodplain preservation efforts


Warehouse Site, before


Warehouse Site, currently

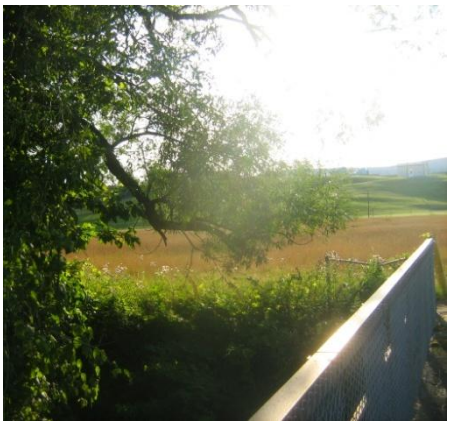
Site, on Granger Road near intersection of I-77 (Showing "before" scene with warehouse).

POSSIBLE PROJECTS:

1) Hiking / Cycling bridge over restored, re-meandered West Creek

Expressive structure to contribute to a "new and dramatic recreation area along the National Scenic Byway." Anticipate relationship with re-meandered West Creek. Scope out ways to minimize the impact of your bridge. Make sure that visitors have a beautiful, clear, unobstructed view of the creek when crossing the bridge.

Consider the materials used, their sources, and their environmental impact.

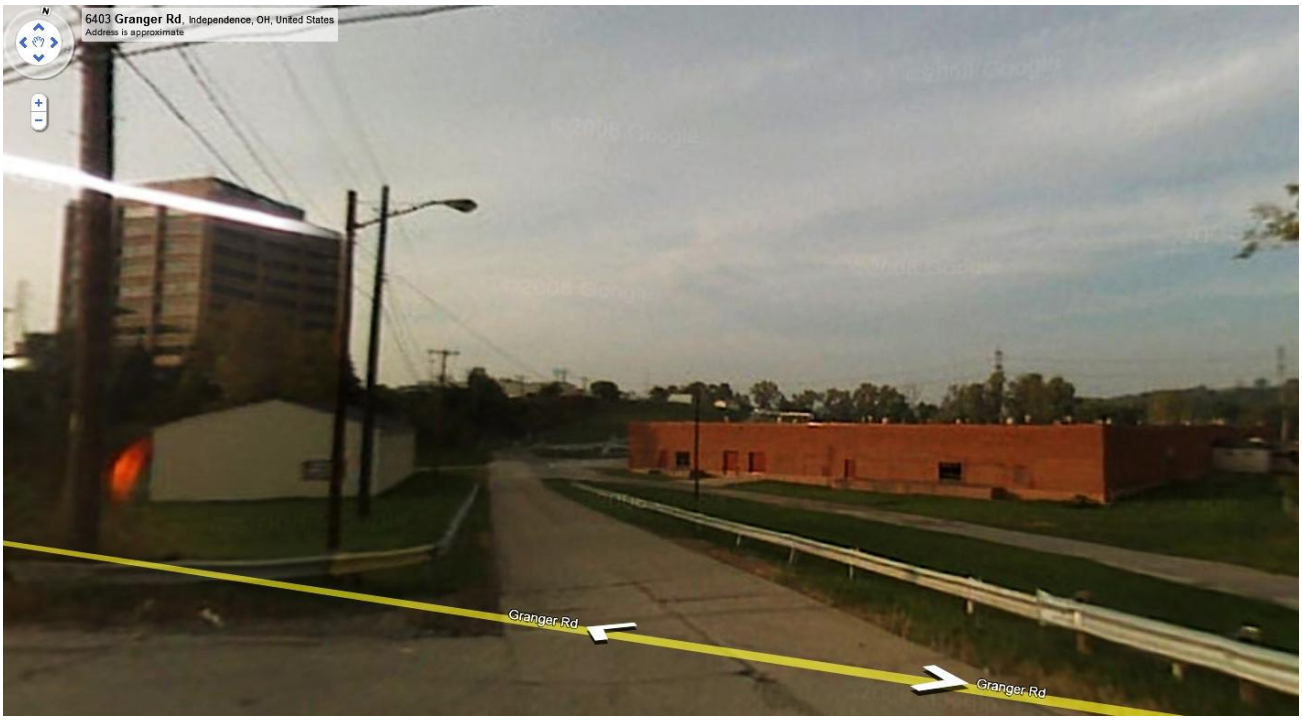


Existing ugly bridge with chain link

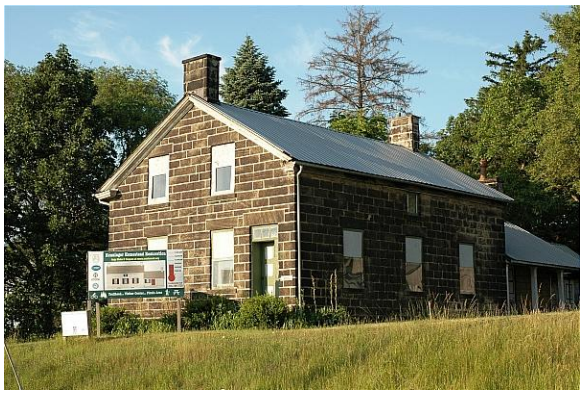
West Creek, Channelized

Confluence with Cuyahoga River

2) Pole barn re-imagining for use as temporary classroom and research facility
Existing pole barn is roughly 30'-0" x 60'-0" and is unused.
Structure must be kept intact to make project feasible, but skin and roof is open to adjustment.



PROJECT 2: FIVE WEEK PROJECT
HENNINGER HOMESTEAD ADAPTIVE REUSE



Located on a scenic and wooded lot at 5757 Broadview Road, near the busy intersection with Snow & Rockside Roads in Parma, the historic Henninger House is the oldest remaining structure in the city. Threatened with demolition in order to prepare the property for commercial sale and expanding development, the building was saved by a grass-roots effort. Now, the emphasis changes to the preservation and restoration of this local landmark.

The house was built in 1849 by Philip and Sophia Henninger at the intersection of then Town Line and Rockside Roads atop a scenic ridge that allowed an impressive view in all directions. To the North, it witnessed the growth of an early City of Cleveland, a hub of commerce where the Ohio & Erie Canal's busy northern terminus met with Lake Erie. To the East, a view of the splendor of the Cuyahoga River Valley and the neighboring Township of Independence. To the South, the wooded and rolling hills leading to the Continental Divide in the vicinity of Akron. To the West, it bore witness to the early settlers, farmers and tradesmen that turned an inhospitable frontier into the established and productive community of Parma.

Now, after surviving 153 years of history and 4 generations of Henningers, the house is left standing alone....unoccupied, neglected and in disrepair. Withstanding the elements of time, nature and vandalism, it silently and patiently rests on a solid foundation with its history and craftsmanship ignored and unseen by the daily rush of commuters, shoppers and residents.

The home was purchased in 2005 by the West Creek Preservation Committee with aid from the City of Parma. The initial intended adaptive reuse of the 2700 square foot home and its adjacent barn is as a trailhead facility for the West Creek Greenway, an interconnected fifteen mile recreational trail system.

The facility would contain information about the trails and programs, an interpretive museum and displays, and various rotating historical and environmental exhibits.

PROJECT 3: LARGE PROJECT
WEST CREEK CONFLUENCE OUTPOST - Water Sustainability Campus
I. Professional Research Facility for Water Sustainability Studies
II. Remote College Field Campus
III. Secondary Magnet School: Environmental Studies

Site Description

The site is roughly ten acres, in a flood plain in an area traditionally used for mercantile and warehouse use in south suburban Cleveland. The site encompasses the furthermost end of the West Creek, and is directly adjacent to the Lower Branch of the Cuyahoga River. Since the land has been utilized, it has been subject The first priority of the current steward of the land, the West Creek Preservation Committee, is the reversion of the property to its original state: predominantly pervious landscape with native plants and a wandering creek.

Towards that aim, the WCPC has already achieved a good portion of its goal. The parcel directly west of the creek and a small portion directly east have been reclaimed. A store / warehouse has been demolished and the majority of hardscape from these areas has been removed. As previously mentioned, the pole barn on this side of the site will remain for other purposes. The parcel to the east of the creek must be purchased and the two buildings and hardscape upon it removed.

Any development taking place on the site after this reversal has been put into effect must be carefully considered, else the original problems of impervious surfaces, direct runoff, and flooding occur once more. Projects must be studied in concert with the knowledgeable staff of the commission, as well as that of other local and regional experts in hydrology and soil and water conservation.

Presumably, since replanting has already occurred on the west side of the creek, the construction project will take place on the east side.

Site: Strategic Advantages

The potential long-term value of this site as a permanent, secure location for field study is hinged to the master planning currently being undertaken there. The surrounding area will undergo under a prolonged period, a "return to nature." A facility for education, research, and teaching would be ideal, with the specialized subject matter of sustainable environmental planning and the planned reversion of urban and brownfield territories to greenfield condition.

Each student will be expected to do a thorough site analysis of the plats with access and approach, vegetation, natural and man-made context, solar exposure, rainfall, snowfall, wind, temperature, and of course soils and flooding.






Some elements of surrounding context.

Water Preservation Ethics and Aesthetics: Ongoing West Creek Confluence Restoration Project

The West Creek Confluence Project is one of the most challenging and important projects West Creek Preservation Committee has undertaken. Located in the City of Independence along Granger Road where West Creek meets the Cuyahoga River, the Confluence Project site will join the West Creek Reservation, the historic Henninger House, Brooklyn Heights Park, and the Hemlock Trail as cornerstones of the Greenway Trail System.

We are working with several project partners, including the City of Independence, the Northeast Ohio Regional Sewer District, and The Trust for Public Land to acquire and restore ten acres of land that constitute the West Creek Confluence property.

The West Creek Confluence Property has suffered significant impacts from development back in the 1950's and 60's. West Creek, which flows through the middle of the property, was straightened and channelized to allow for the construction of a 115,000 square foot store (later used as a warehouse) and a parking lot. West Creek's connection to its floodplain was disrupted and the floodplain wetlands that most likely occupied the area were filled. Today, the property consists of over 85% impervious surface and is a significant conduit of nonpoint source pollution into the Cuyahoga River and Lake Erie.

The future of the West Creek Confluence Property, however, is very bright. After the purchase of the property has been completed, the warehouse will be removed and the area will be restored to a more natural condition. West Creek will be re-meandered and re-connected to its floodplain, an array of floodplain and oxbow wetlands will be

created, and native vegetation will be re-introduced. The image below demonstrates a conceptual restoration and revitalization plan for the property. Click the picture for a larger image.

The West Creek Greenway Trail System will traverse the perimeter of the property and a small trailhead will be located at its southwest corner. The Cuyahoga Valley Scenic Railroad shares the northern property line with the Cuyahoga River. An adjacent abandoned railroad bridge provides an opportunity for the Greenway Trail System to cross the Cuyahoga River and connect with the Ohio & Erie Canal Towpath Trail on the opposite side of the river. As an added bonus, the site is adjacent to the Ohio & Erie Canalway Byway, one of America's National Scenic Byways.

The benefits of the West Creek Confluence Project are numerous. Locally, it will reclaim underutilized industrial property, create a new and dynamic recreation area along the National Scenic Byway, restore a more natural hydrology to Lower West Creek, create an area for urban ecology to flourish, retain and filter storm water that contributes to local and downstream flooding, and reduce nonpoint source pollution entering into West Creek and the Cuyahoga River. From a regional perspective, we believe that the West Creek Confluence Project could herald in a new era of sustainable redevelopment within the Lower Cuyahoga River Valley, capitalizing on recreational and commercial uses that still allow for a functioning floodplain with a high degree of ecological diversity, flood storage and habitat connectivity. As flooding and storm water retention become ever-increasing problems, projects such as the West Creek Confluence offer an attractive solution by providing a large area for storm water retention, while also creating important wildlife habitat and a new recreation area for Cuyahoga County residents and visitors.

Perhaps most important, the West Creek Confluence Project will re-connect people to the Lower Cuyahoga River, an area seemingly forgotten. It is a beautiful river, the reason for Cleveland's founding, and it is a place that can still stir one's soul. We look forward to working with the City of Independence, the Northeast Ohio Regional Sewer District, and the Trust for Public Land, and we applaud their vision and participation on this very important project.

PROGRAM: WEST CREEK CONFLUENCE OUTPOST

The West Creek Confluence Outpost is envisioned as a facility for

A). Primarily, field research by both professionals and students
B). Field-based classes in environmental sciences and biological sciences
C). Conservation and urban planning studies
D). Examination of natural biodiversity in Northeast Ohio and its preservation
E). Assessment of progress in these areas in the Greater Cleveland Area

Some students will visit the campus only during the day, and some will stay there for several week studies. Presume that at any given time, an equal number of postsecondary students (staying on the campus overnights) and secondary students (commuting) will be utilizing the campus.

The commencement of construction of the new building(s) will be in the summer of 2010. Presume that all buildings, save the pole barn, will be removed by that time. Materials from those buildings can be salvaged for new construction if deemed suitable by the students.

As part of the design plan for the site, students should avail themselves of the knowledge of sustainable sites and water efficiency from the LEED guidelines as well as from other sources.

There will be several distinct building uses on the site. (Students can break these up or conjoin them in any combination as they see fit)

Primary Research Building:
General environmental science unit = 5,200 sq. feet
Water control, storage, and testing = 10,000 sq. feet
Hydrological studies center = 4,600 sq. feet
Urban reclamation studies = 3,400 sq. feet
Biodiversity studies unit = 3,000 sq. feet
    Monitoring center
Public spaces = 4,500 sq. feet
    Entry Lobby
    Conference room
    Coffee shop
    Restrooms
Administration and support = 6,000 sq. feet
    Executive administration
    Staff offices
    Files and Storage
    Technology and Servers
Building support = 4,150 sq. feet
    Circulation
    Mechanical
    Central plant
    Maintenance

Community Building:
Lobby/Information = 200 sq. feet
32 bed bunkhouse, 8 rooms (4 beds/rm.) @ 120 sq. feet each = 960 sq. feet
2 bathrooms w/ showers (male/female) @ 250 sq. feet each = 500 sq. feet
Kitchen (cooking/food storage) = 450 sq. feet
Dining/Classroom = 800 sq. feet
Outside Dining/Classroom = 800 sq. feet
Storage = 400 sq. feet
Subtotal 4350 sq. ft.

Teaching Building:
Laboratory (open space w/ lab benches and cabinets) = 1200 sq. ft.
3 Offices @ 180 sq. feet each = 540 sq. ft.
2 bathrooms unisex @ 150 sq. feet each = 300 sq. ft.
Subtotal 2040 sq. ft.

Visiting Researcher and Instructor Residence Building:
20 beds, 10 rooms (2 beds/rm.) @ 100 sq. feet each = 1000 sq. feet
1 communal space adjacent to bedrooms = 500 sq. feet
2 bathrooms w/ showers (male/female) @ 250 sq. feet each = 500 sq. feet
Subtotal 2000 sq. feet

Total = 49000 sq. feet