ENVIRONMENT + ENERGY + EQUITY

Chris Reed

productive landscapes

MAKE LANDSCAPES PRODUCTIVE

- food
- energy
- healthy bodies
- art/culture/performance
- one-of-a-kind experiences
- clean soil
- remediation technologies
- research/knowledge (urban ecology, e.g.)
- training opportunities / jobs
- revenue
- ecology
- habitat
- clean water
- plant stocks (nursery, e.g.)
- social life (in many forms)

SINGLE-USE, PASSIVE LANDSCAPES ARE RESOURCE-CONSUMPTIVE; CONTEMPORARY LANDSCAPES CAN GENERATE RESOURCES.

More than just utilizing land, open-space activation produces glocal products while tapping into under-utilized resources, potential labor, and Detroit's waste streams.

9. Productive Landscape

Other Urban Agriculture

1


2


3


4

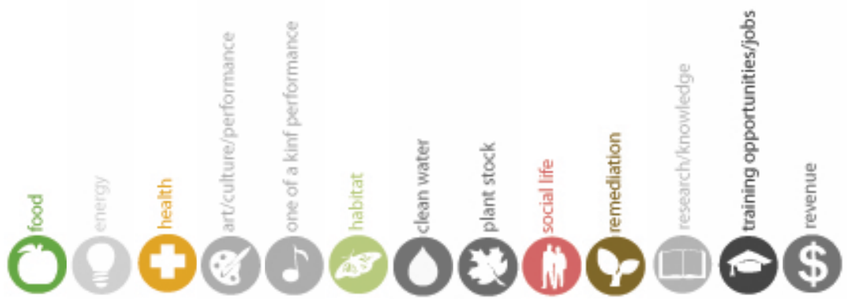
• Crops don’t have to be grown in the existing soil; alternative techniques allow food to be grown in places without soil (such as rooftops) or where the soil is contaminated

1.Grow Bags: Urban Allotments uses 70 half-ton bags filled with soil. A space for growing, socializing and eating is created

2.Rooftop herb gardens can use raised beds

3.The Romita Urban garden tests different urban agriculture techniques. Uses the space for agriculture, education, workshop space, and garden supply store

4.Raised planter beds allow agriculture to occur in areas where the soil is unsuitable for growing crops (contamination, etc.)

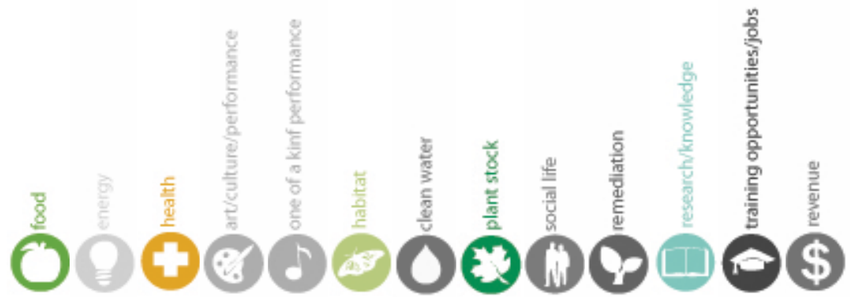


SOURCE:

STOSS LANDSCAPE URBANISM

9. Productive Landscape
Urban Orchards, Boston, USA

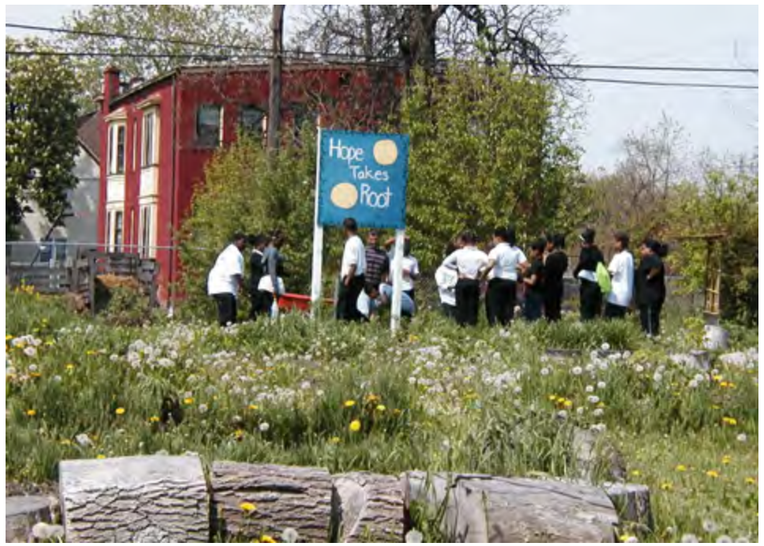
- Community-run orchards provide free fruit to local community
- New orchards are planted from saplings; community members are involved in the entire process, including operations
- Provides ecological, health, and educational benefits
- Restores city-owned natural areas
- Encourages education on science and sustainability though schoolyard orchards
- Aims to create a healthier and more sustainable Boston



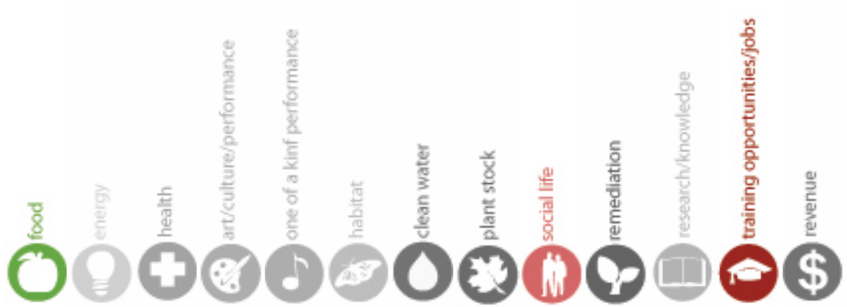
SOURCE: http://earthworksboston.org/home

10. Urban Agriculture / Landscapes for Labor

Recovery Park, Detroit, USA



•Redevelopment project for the city of Detroit that will include urban farming, education, commercial and housing development along with other projects
•Goals include community building and financial / environmental self-sustainability
•Phase I of the project has been supported by private grants. Financial commitments include Shore Bank Enterprise Detroit, Erb Family Foundation and The Kresge Foundation



SOURCE: http://recoverypark.org/park-progress

9. Productive Landscape

Shenyang Campus, Shenyang City, China

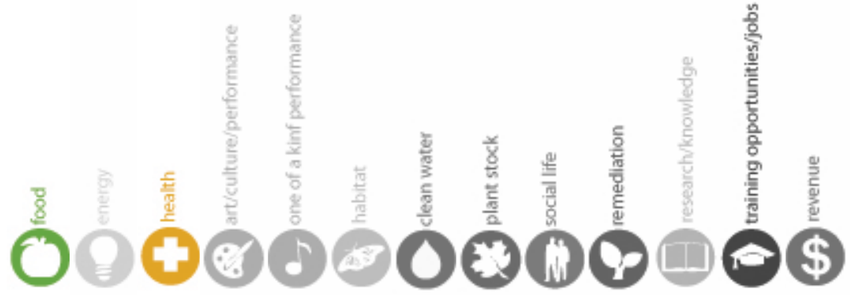
- Rice, native plants and crops create a productive, educational landscape
- Project raises awareness of land and farming among college students .
- Project demonstrate how an inexpensive, productive agricultural landscape can be laced with recreational paths and occupiable spaces
- 21ha, Completed 2004, Client -Shenyang Architectural University

SOURCE: http://www.turenscape.com/english/projects/project.php?id=324

9. Productive Landscape
Animal Husbandry

SOURCE: http://www.time.com/time/magazine/article/0,9171,1914991-2,00.html

• Prompted by growing interest in local food and self-sufficiency , urban animal husbandry movement is increasing in popularity around the country
• Common animals raised include: bees, rabbits, goats (primarily for milk), and chickens
• Rearing animals often violates local zoning laws, and some cities are responding by modifying local rules
• Examples of efforts, programs, and individuals include:
  - Detroit's Garden Resource Program - runs classes on urban bee keeping; these classes are often filled to capacity shortly after being announced
  - The Catherine Ferguson Academy in Detroit – includes a school farm adjacent to the school. It sees raising animals as a key part of education
  - Author of *Farm City: Education of the Urban Farmer*, Novella Carpenter - keeps goats, rabbits, pigs, turkey,



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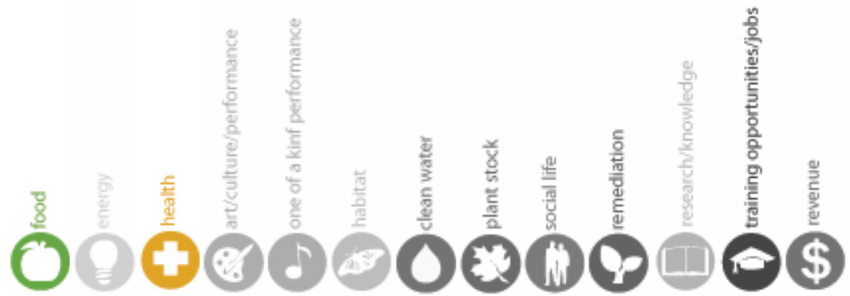
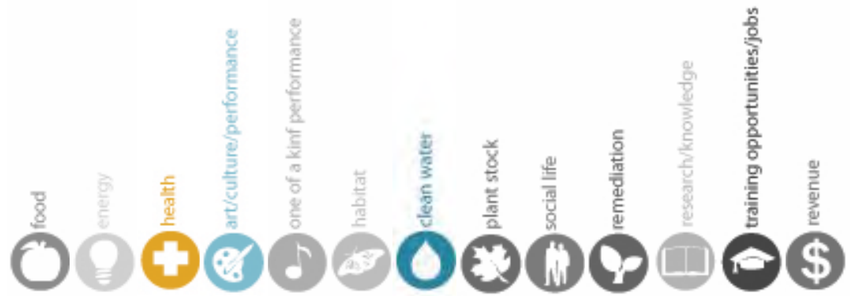


7. Water Treatment

Grossenhain Landesgartenschau, Grossenhain, Germany

- Wetland system uses plants to filter water for a swimming pool
- Eliminates the need for chlorine or other chemicals
- Wetland incorporates sculptural element with practical function: Two mossy cupped hands reach from the bank into the pond. As water flows into the hands a misting fountain aerates it and moistens the mosses, which in turn, purify the water.
- 2001, Artist – Jackie Brookner



SOURCE: http://www.jackiebrookner.net/water.htm

10. Landscapes for Labor

Zapotec Indian Forest, Oaxaca, Mexico

- Community in south Mexico that manages their own local forest and runs a lumber business.
- All decisions about the forest are made by a local assembly of 390 towns people.
- They must contribute their labor to be part of the committee
- $230,000 profit made last year. 30% of this went back into the business, 30% went to forest preservation and 40% went to the workers and community.
- 48,000 acre forest

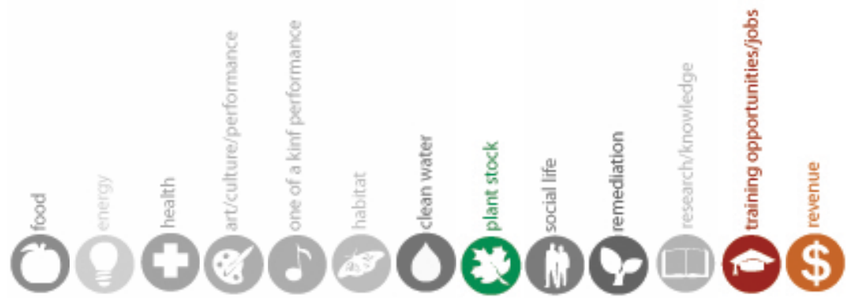
SOURCE: http://www.nytimes.com/2010/11/23/world/americas/23mexico.html

10. Landscapes for Labor

Urban Nurseries, California, USA

SOURCE: http://www.flickr.com/photos/steinermorosswedding/4487746733/

- Multipurpose corridors - Reuses the vacant space under power lines that otherwise would lie empty



RENDER LANDSCAPE AS GROUND FOR INNOVATION

SOURCE : Jena Experiment

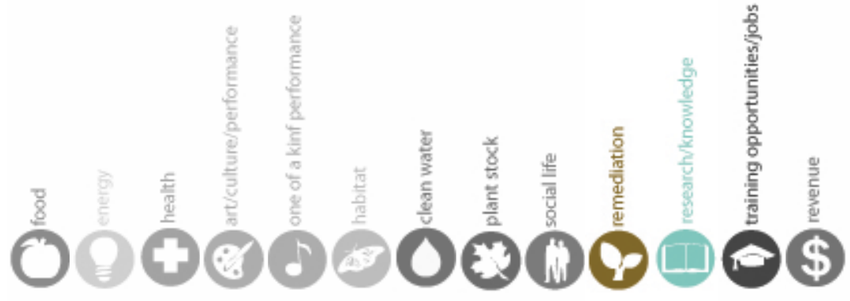
LANDSCAPES PROVIDE A TESTING GROUND FOR NEW IDEAS.

Moving forward in Detroit will require innovative solutions; these solutions can be tested through landscape experiments.

8. Remediation

Ford Rouge Facility, Michigan, USA

- APGEN teamed with MSU for a 3-year laboratory and field demonstration of various phytoremediation techniques
- 4-month laboratory treatability study screened candidate plant species for the field demonstration program
- Over 20 plant species are being recommended for use in the field tests
- Also used three demonstration plots to test the effectiveness of various wetland and terrestrial planted ecosystems

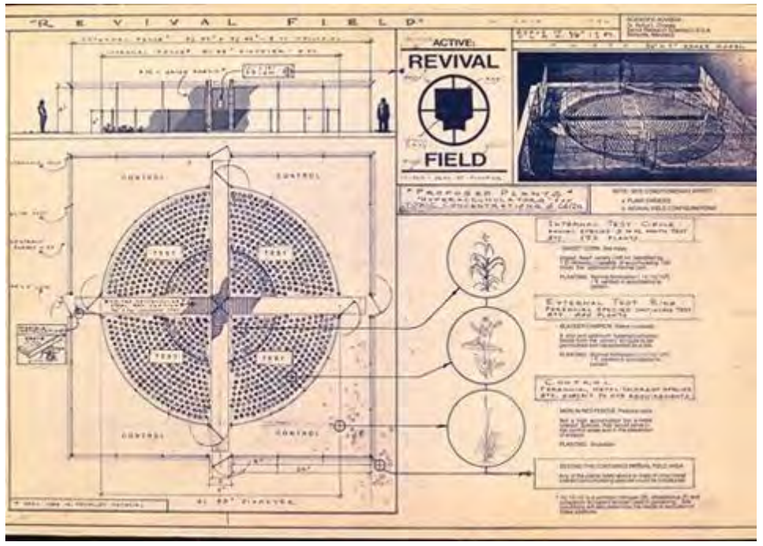


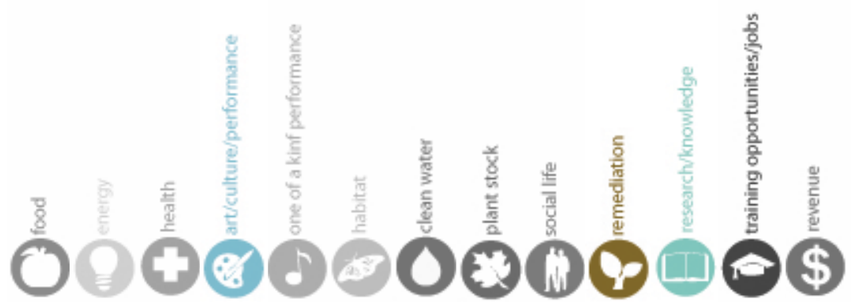
SOURCE: http://pruned.blogspot.com/2006/01/revival-field-or-7-terrestrial.html

8. Remediation

Invisible Aesthetic, St. Paul, Minnesota, USA

•60-square-foot section of the Pig's Eye landfill, a site heavily contaminated with zinc, lead, and cadmium
• By using plants that extract heavy metals Chin and Chaney gathered scientific data on the viability of using plants to clean up polluted soil
•Found that although some plants were more effective than others in removing contaminants from the soil, none were effective enough to substantially clean soil in 3 years
•Artist Mel Chin and Rufus L. Chaney



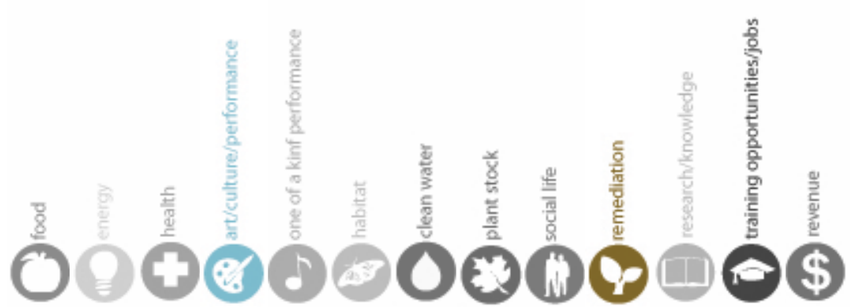


SOURCE: http://eyeteeth.blogspot.com/2006/01/mel-chins-invisible-aesthetic.html

13. Opportunistic Appropriations

Wheat Field – A Confrontation, New York City, USA

- Artist Agnes Denes
- Produced in 1982
- 2 acre site
- Yielded 100lb of wheat
- The harvested grain then traveled to 28 cities worldwide in "The International Art Show for the End of World Hunger" and was symbolically planted around the globe.

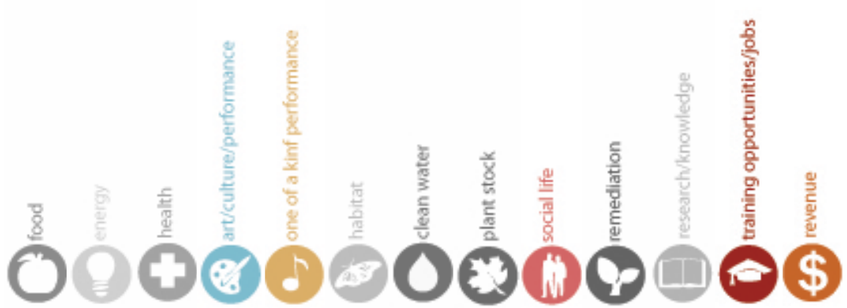


SOURCE: http://greenmuseum.org/content/artist_index/artist_id-63__nosplit-z.html

12. Cultural Enterprise/Event Landscape

Westergasfabriek, Amsterdam, Holland

- 1993 energy corporation vacated buildings
- Temporary uses were organized until the buildings were modified for their final use
- Initial groups using the spaces consisted of a film studio (Studio Wenek) and an artist collective (patchwork)
- To keep the interim uses as diverse as possible a program was organized by Liesbeth Janse
- Other activities included a circus, bar restaurant, carnivals, festivals, fun fairs, 'Puck en Hans' fashion show and Netherlands largest Opera (2000 people)
- Temporary events continued for 7 years due to their success



SOURCE: westergasfabriek culture park by Olaf Koekeakker

EMBRACE URBAN, SUCCESSIONAL ECOLOGIES

SOURCE : Sweet Juniper.

SUCESSIONAL ECOLOGIES CAN BE RE-BRANDED TO FOCUS ON FUNCTIONAL PERFORMANCE

•Carbon, water, and contamination accounting enable the city to capture the fiscal and quantitative benefits of emergent ecologies.

•Educational moments and artistic interventions provide a way to capture community interest and involvement.

14. Urban Forestry / New Nature Parks

Nature Park Südgelände, Berlin, Germany

- 18 ha site
- opened in 2000
- A former rail yard
- Site was saved from new rail yard development by am active local group of citizens in 1980
- Still retains railtarcks and water tower

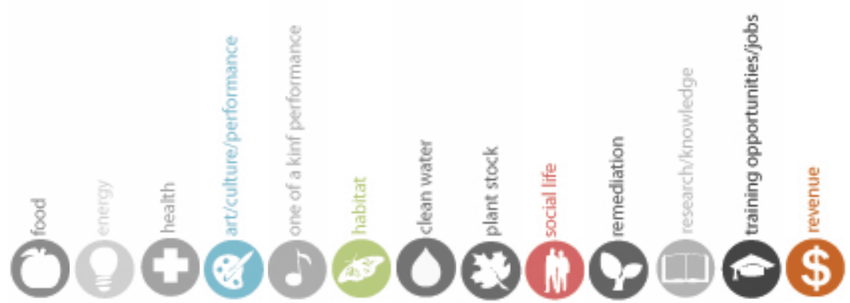
SOURCE: http://www.bi-suedgelaende.de/html/english.html

STOSS LANDSCAPE URBANISM

15. Seeding and Claiming Strategies / Interim Landscapes

Greenaid seed bombs, Los Angeles, USA

- Seed Bombs are small balls of soil and seed combined. The soil and compost surrounding the seed create a built-in mini-environment, which enables the seeds to germinate in areas that are hostile to plant growth.
- Specific seed bombs are made for the ecology of the local environment where the vending machine is destined
- over 30 machines across west LA



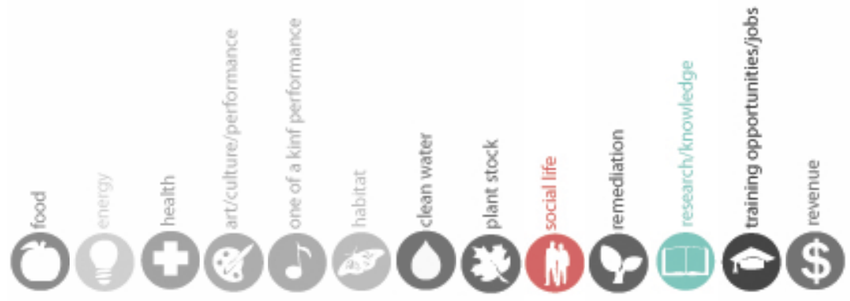
SOURCE: http://ecosalon.com/greenaid-for-change-guerrilla-gardening-and-the-seed-bomb/

15. Seeding and Claiming Strategies / Interim Landscapes

Dessau, Germany

SOURCE: http://www.werkstatt-stadt.de/en/projects/186/

•In 2000 Dessau's population dropped declined from 100 000 to 80 000. There were 6 000 vacant housing units
• Concept that as buildings fall, landscapes evolve in their place
•Two landscape modules used. Oak clusters focus on long term effect. Claim landscape module, allows people and organizations to claim and cultivate a plot of land, free of charge
• All other spaces are left for cultivation as meadows, with little maintenance required
• '400m2 Dessau' is the strong branding for the project. Inspired by the 20 x 20m plots the brand is stamped onto the landscape



INITIAL INTERVENTION APPROACHES

EXPERIMENT

test ideas through demonstration projects

• Identify additional open space typologies to incorporate bio-remediation, phyto-remediation, urban agriculture, and urban ecology systems.

•Establish pilot sites for the use of alternative, less costly green remediation practices.

•Identify ‘grey infrastructure’ maintenance/update needs, partner to provide delivery of these needs through ‘green infrastructure’ systems to create cost savings and new open spaces.

•Encourage basic greening practices and buffering bio-mass to enhance air quality in residential areas near highways and major industrial uses.

• Establish test fields

WATER

+

SPORT

+

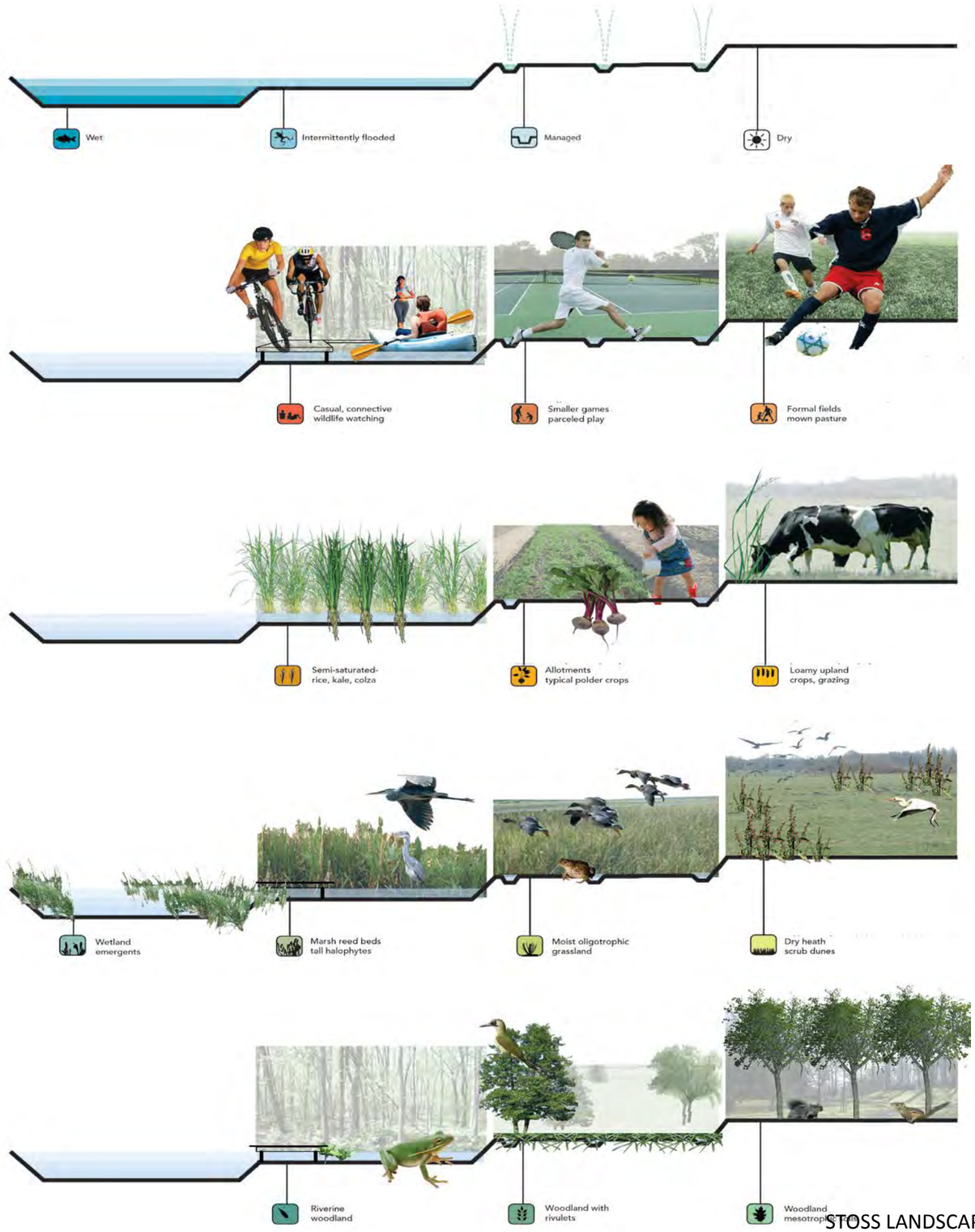
AGRICULTURE

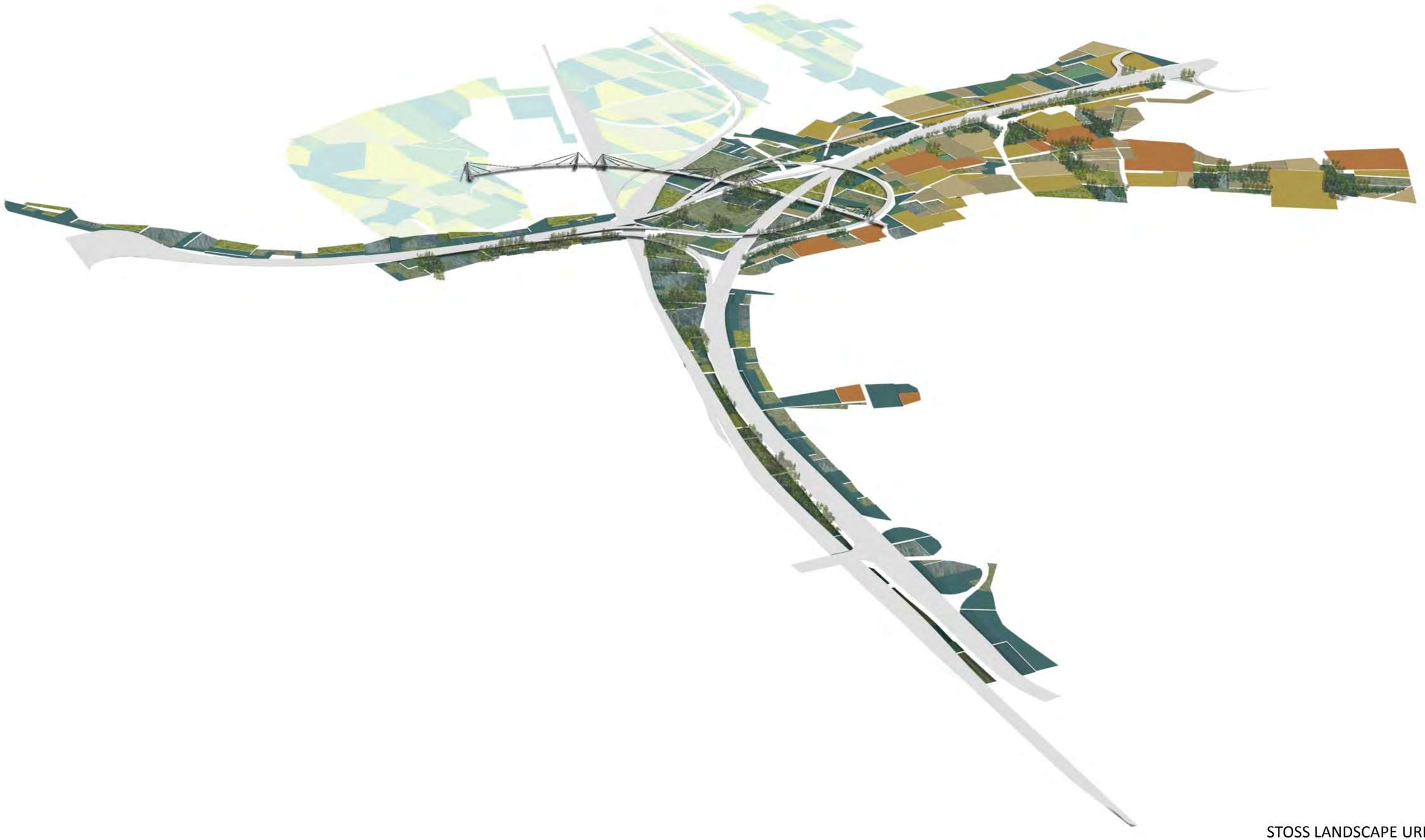
+

ECOLOGY

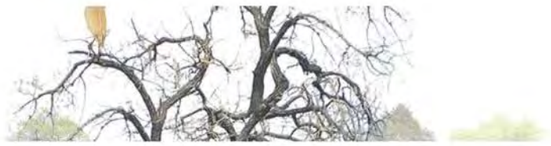
+

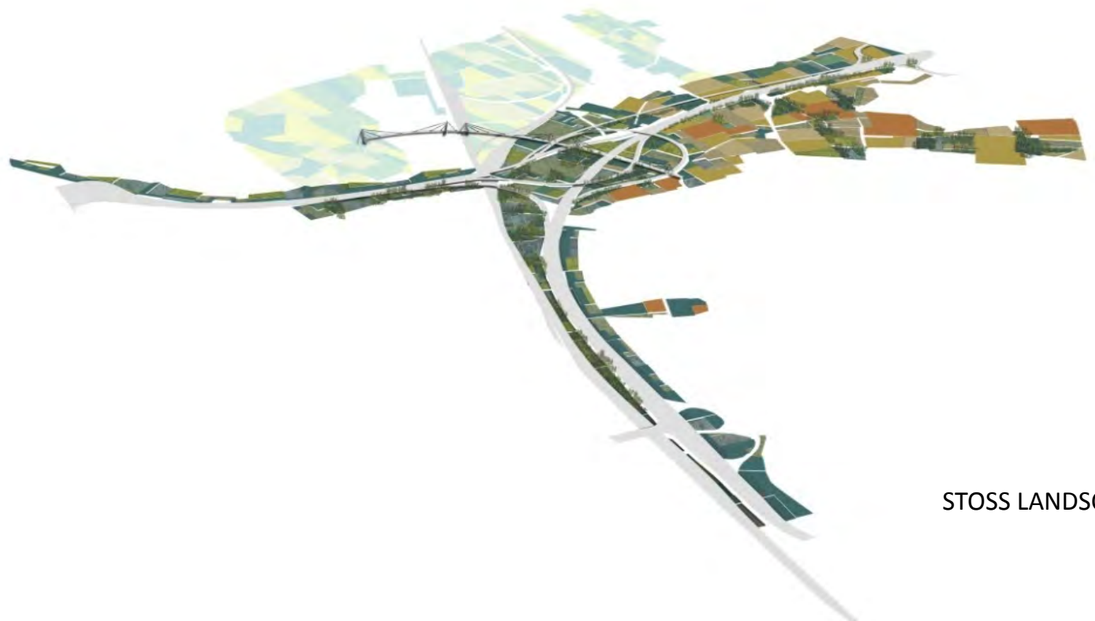
SILVICULTURE





STOSS LANDSCAPE URBANISM





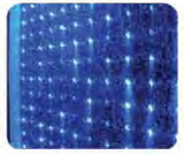
STOSS LANDSCAPE URBANISM

INITIAL INPUTS

PERM. PAVE

RETENTION

INDEXICAL ILLUMINATION



HYDRO_AFFECTS

AS

AERATION

UV CLEANSING

SYSTEM ADDITIONS

SOIL SEEPAGE

ROOF RUNNELS

SETTLING

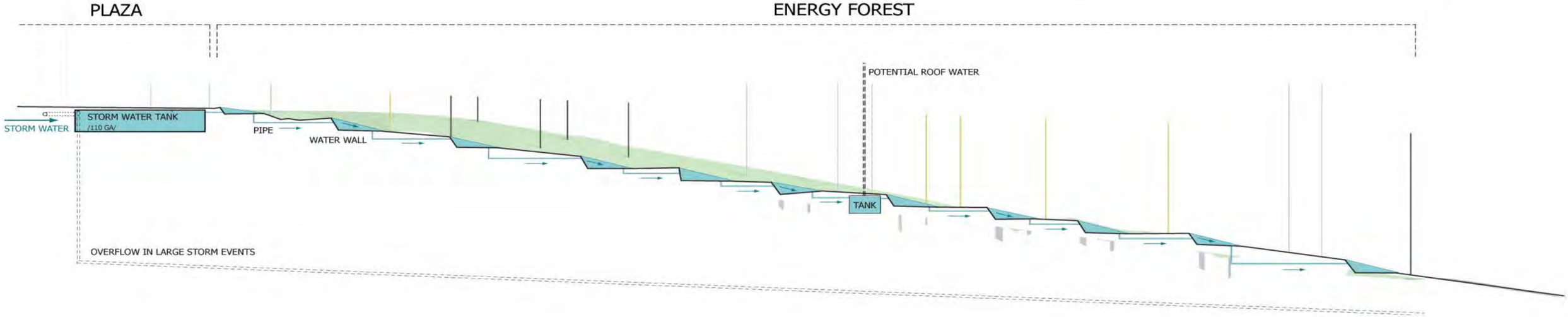
CLEANSING

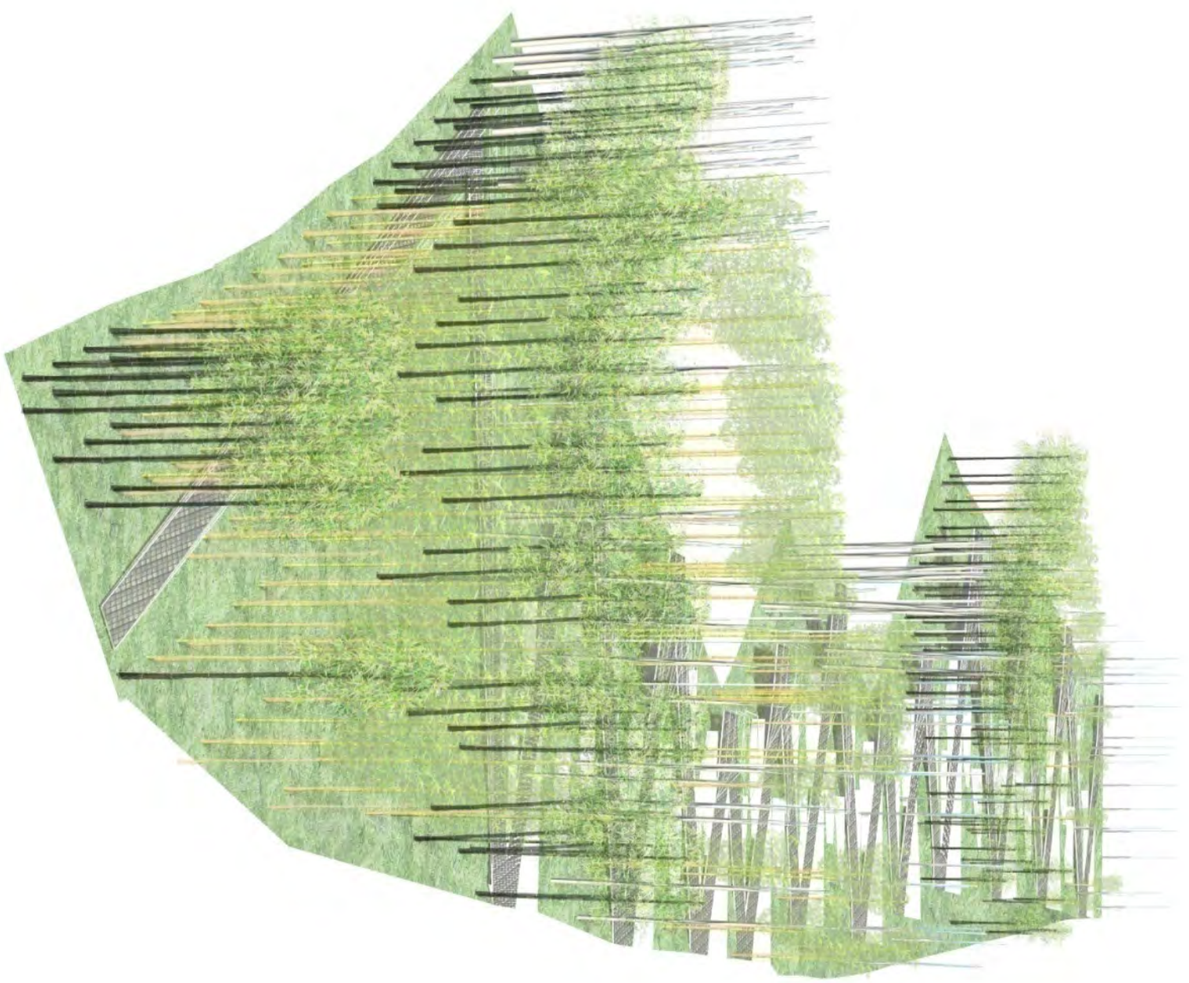
DELAY RELEASE

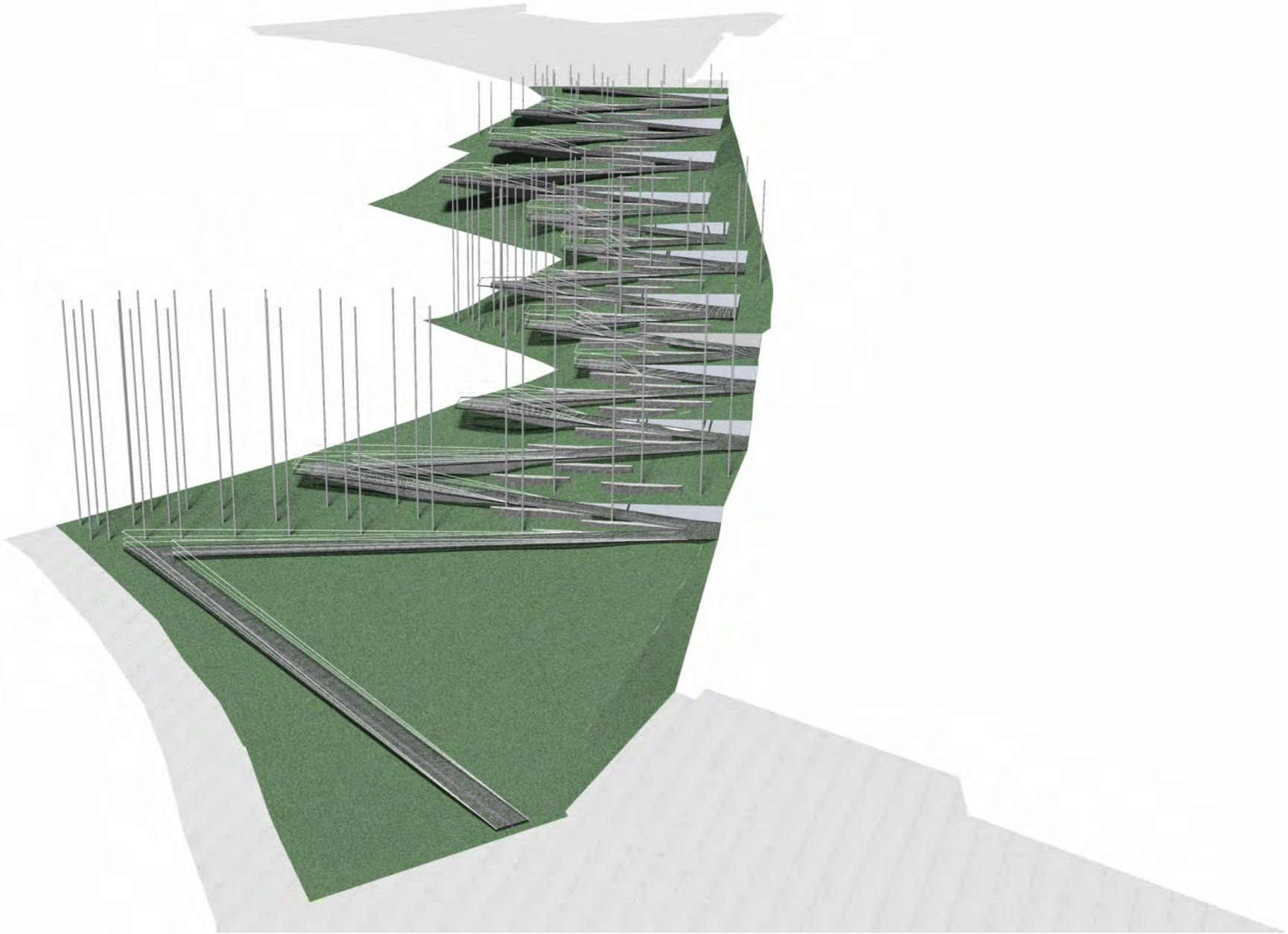
HYDRO_EFFECTS

PLAZA

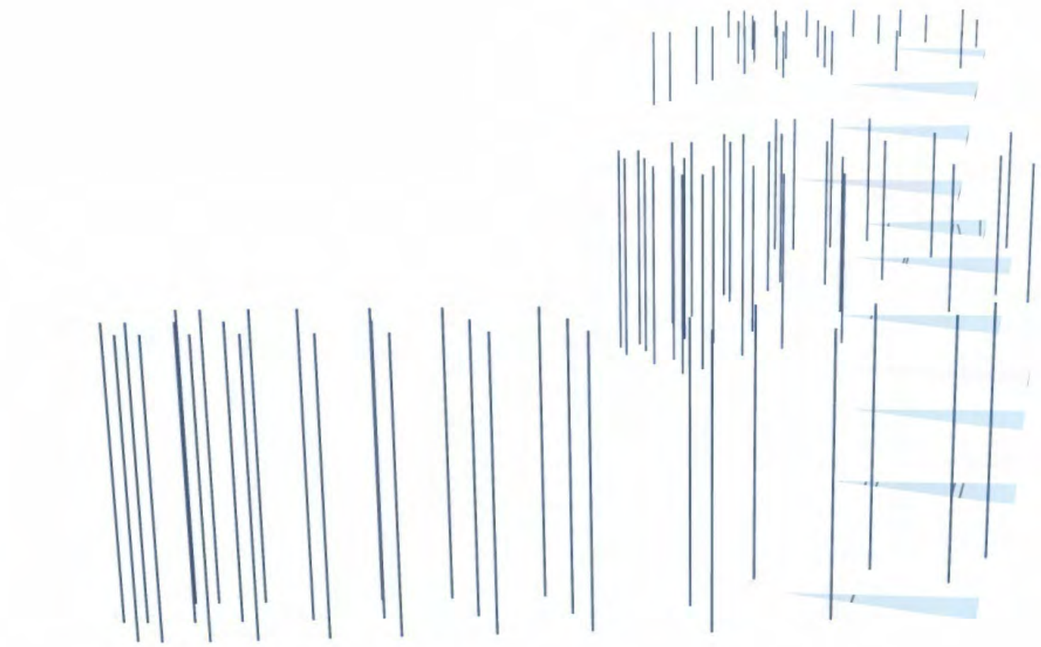
ENERGY FOREST

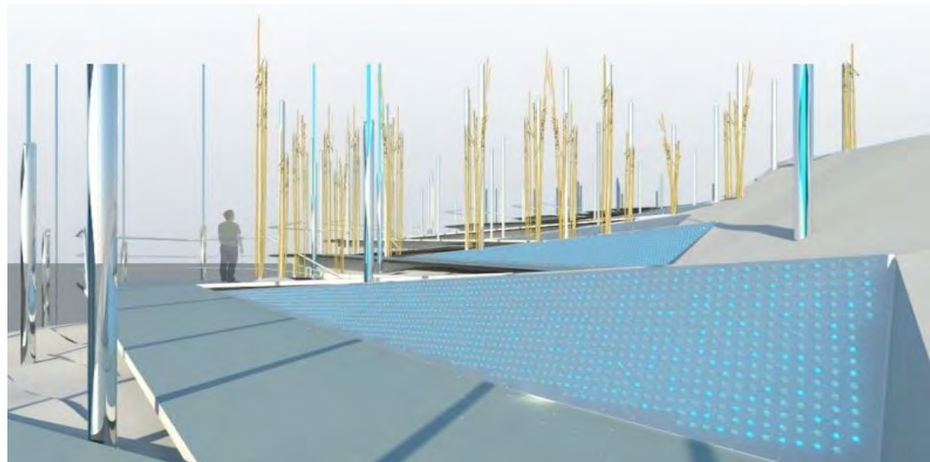


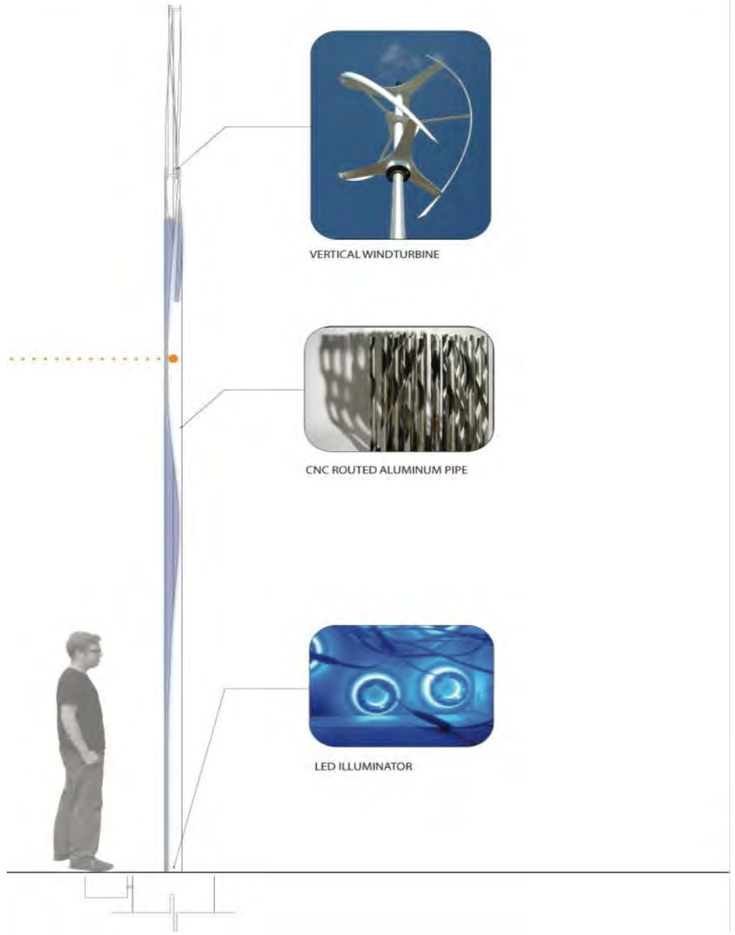


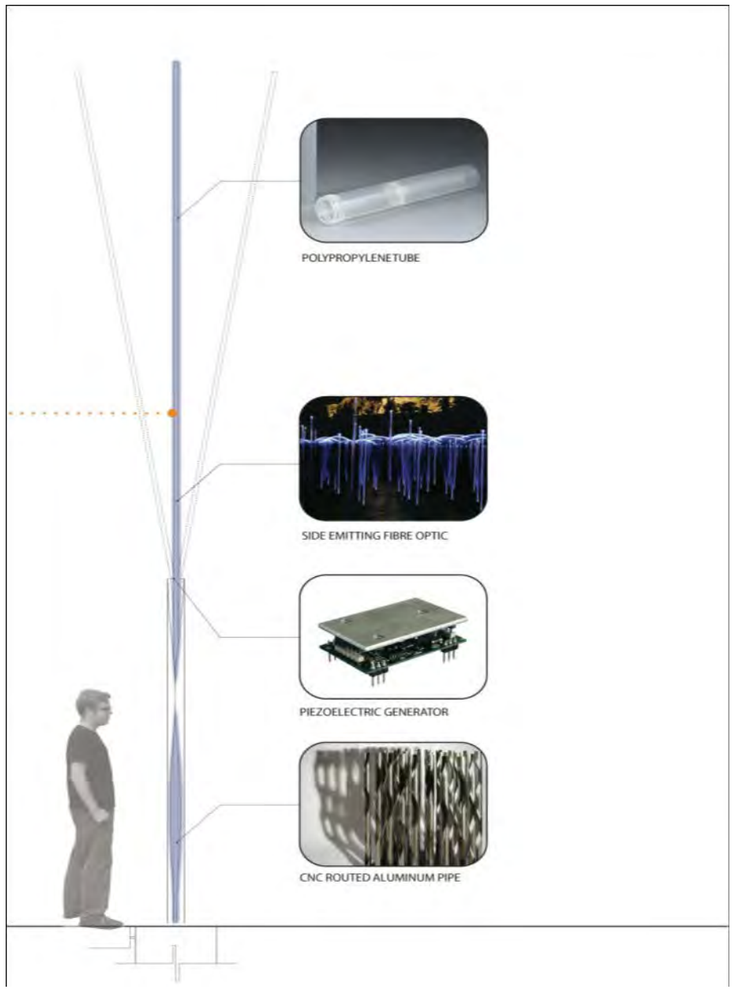


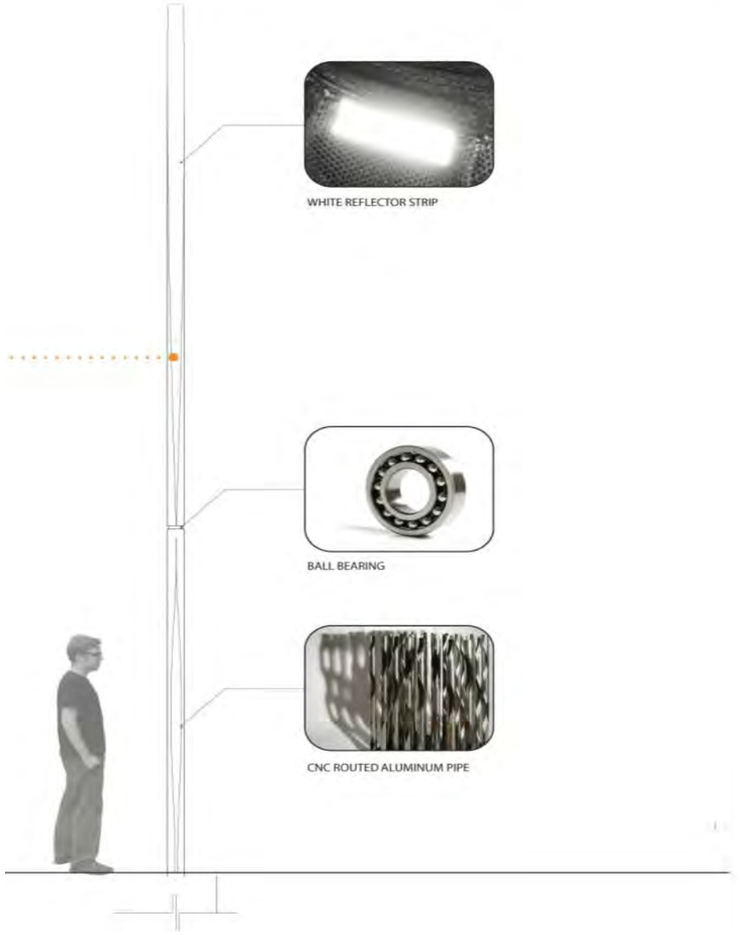
wind reeds + water walls

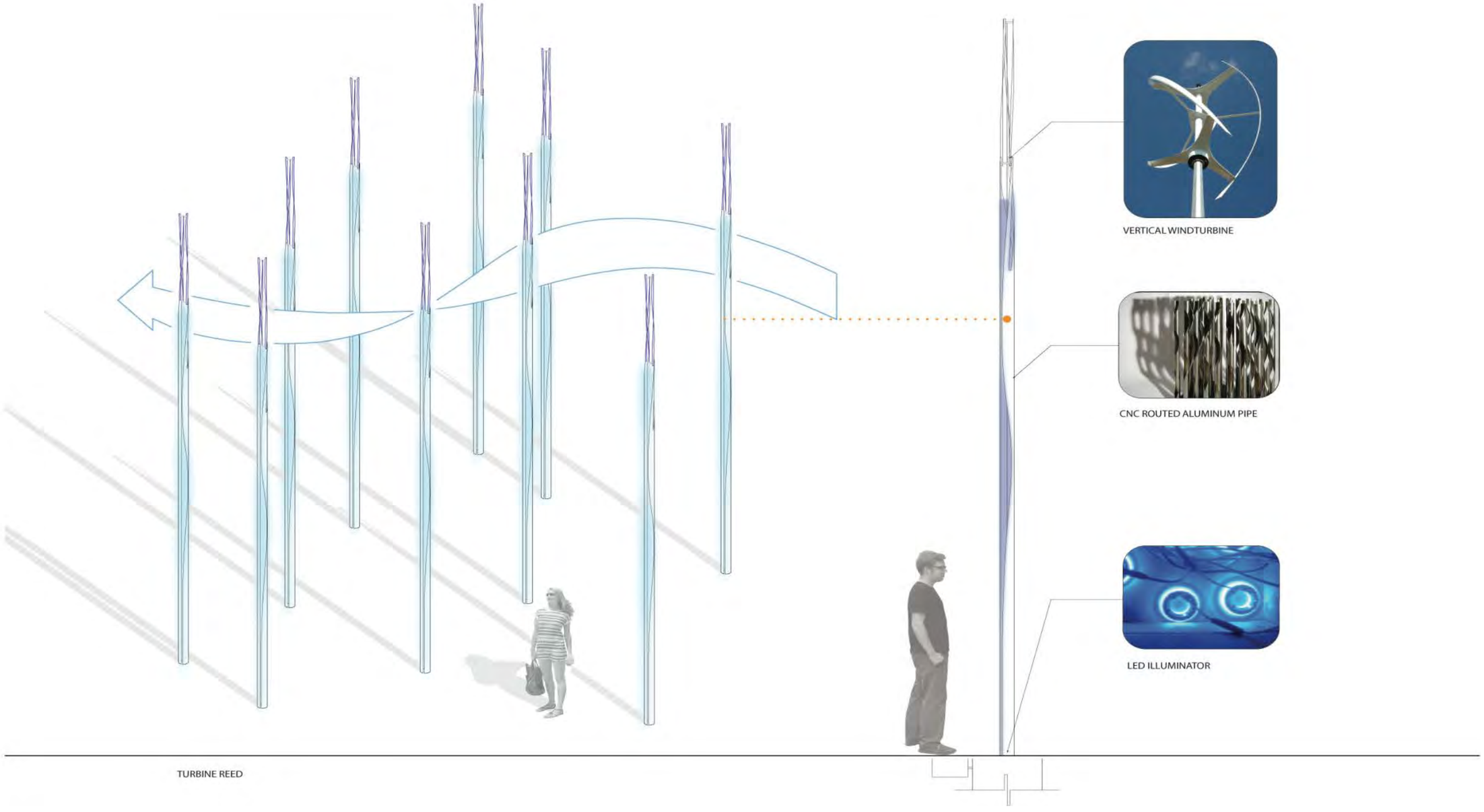


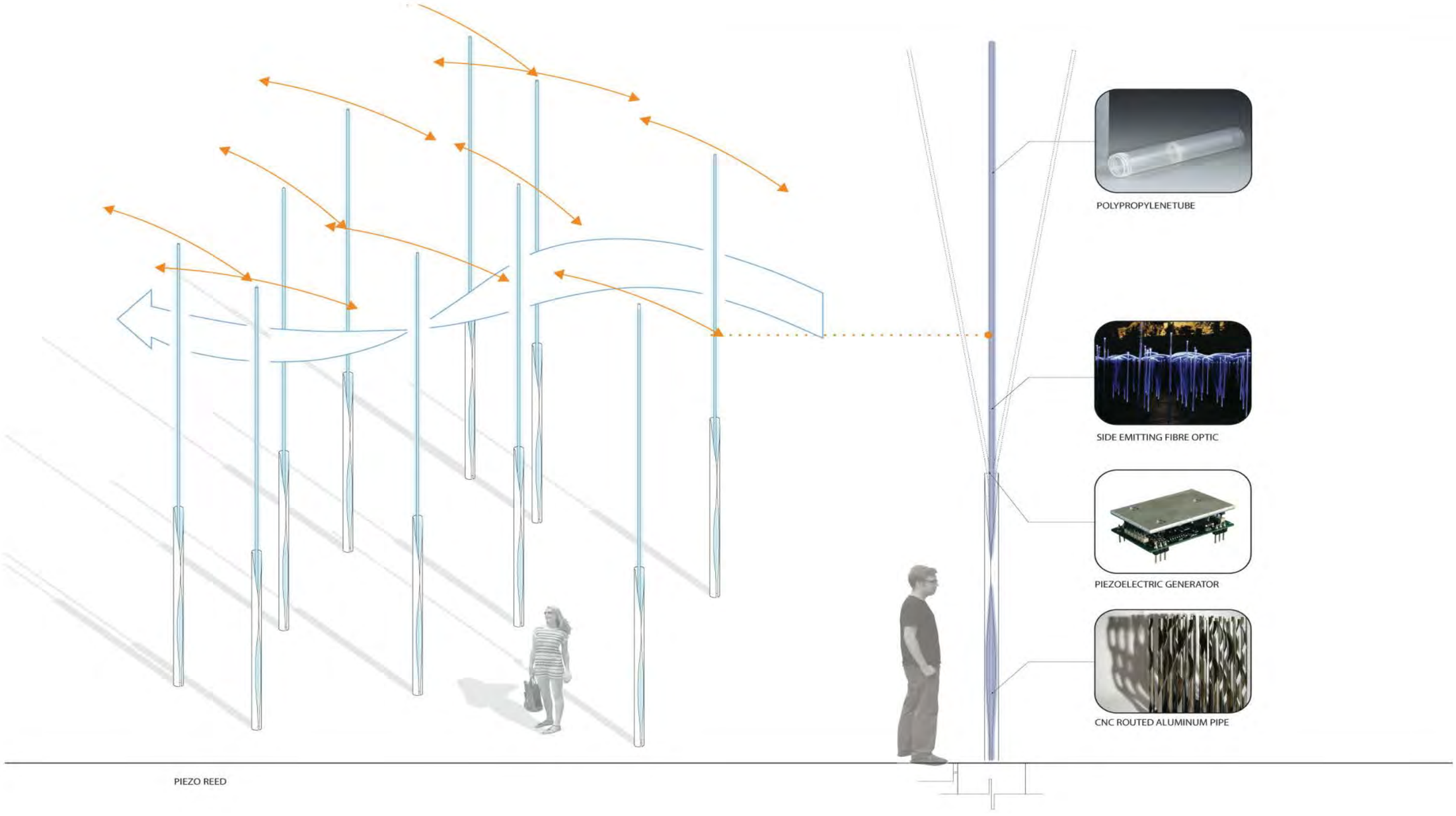



VERTICAL WINDTURBINE
CNC ROUTED ALUMINUM PIPE
LED ILLUMINATOR


POLYPROPYLENE TUBE
SIDE EMITTING FIBRE OPTIC
PIEZOELECTRIC GENERATOR
CNC ROUTED ALUMINUM PIPE


WHITE REFLECTOR STRIP
BALL BEARING
CNC ROUTED ALUMINUM PIPE


VERTICAL WINDTURBINE
CNC ROUTED ALUMINUM PIPE
LED ILLUMINATOR
TURBINE REED


POLYPROPYLENETUBE
SIDE EMITTING FIBRE OPTIC
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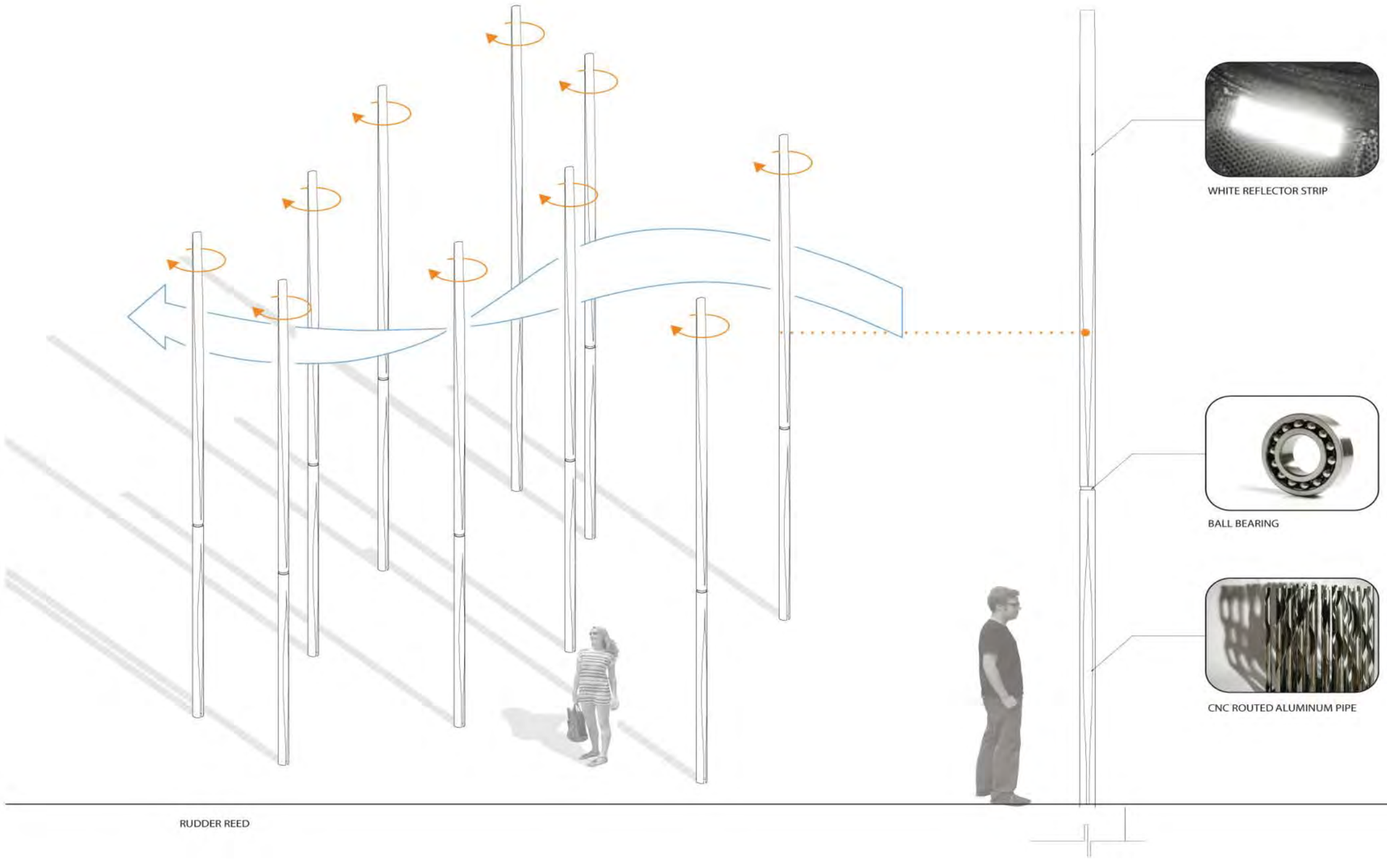
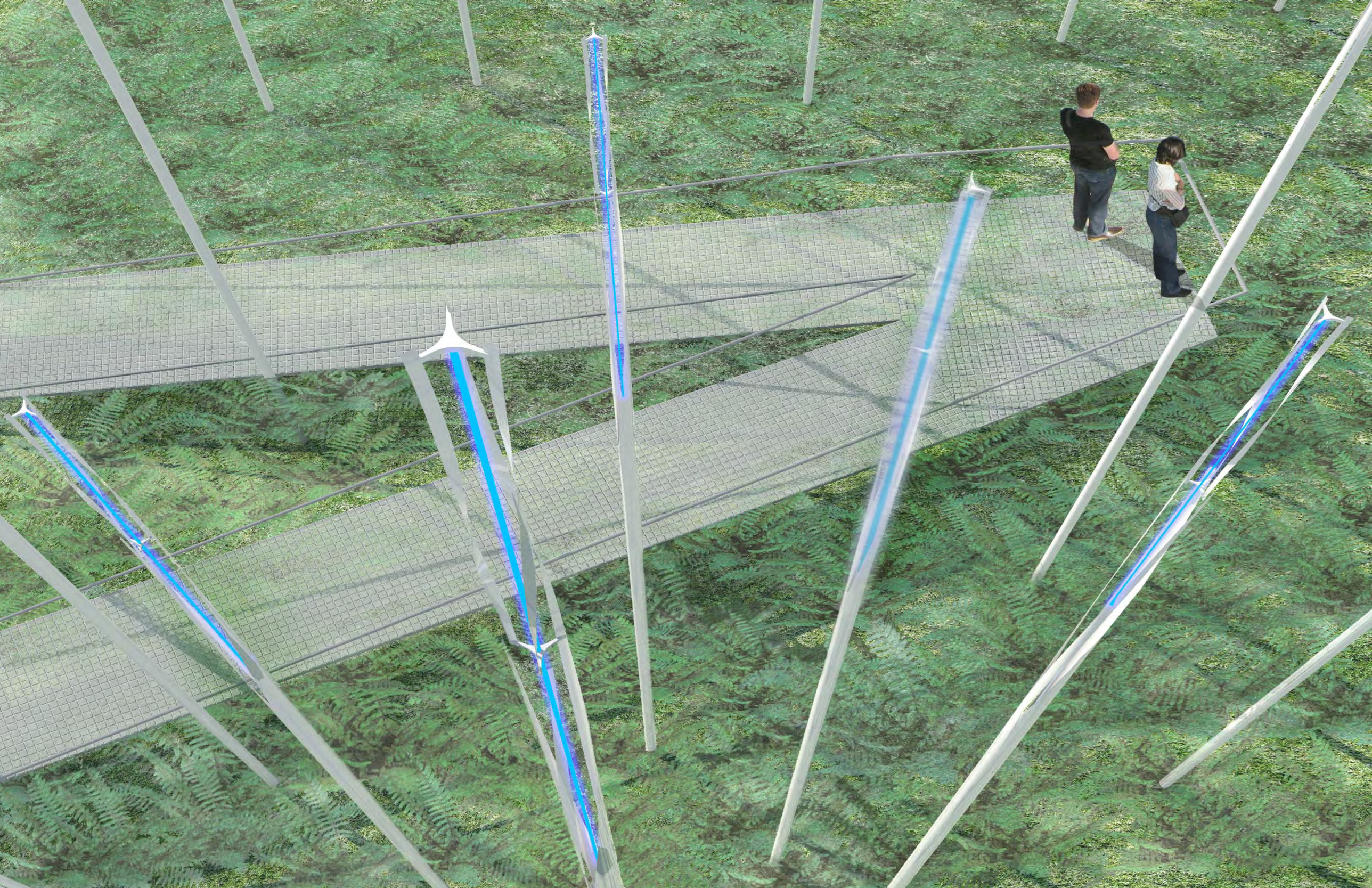


WHITE REFLECTOR STRIP

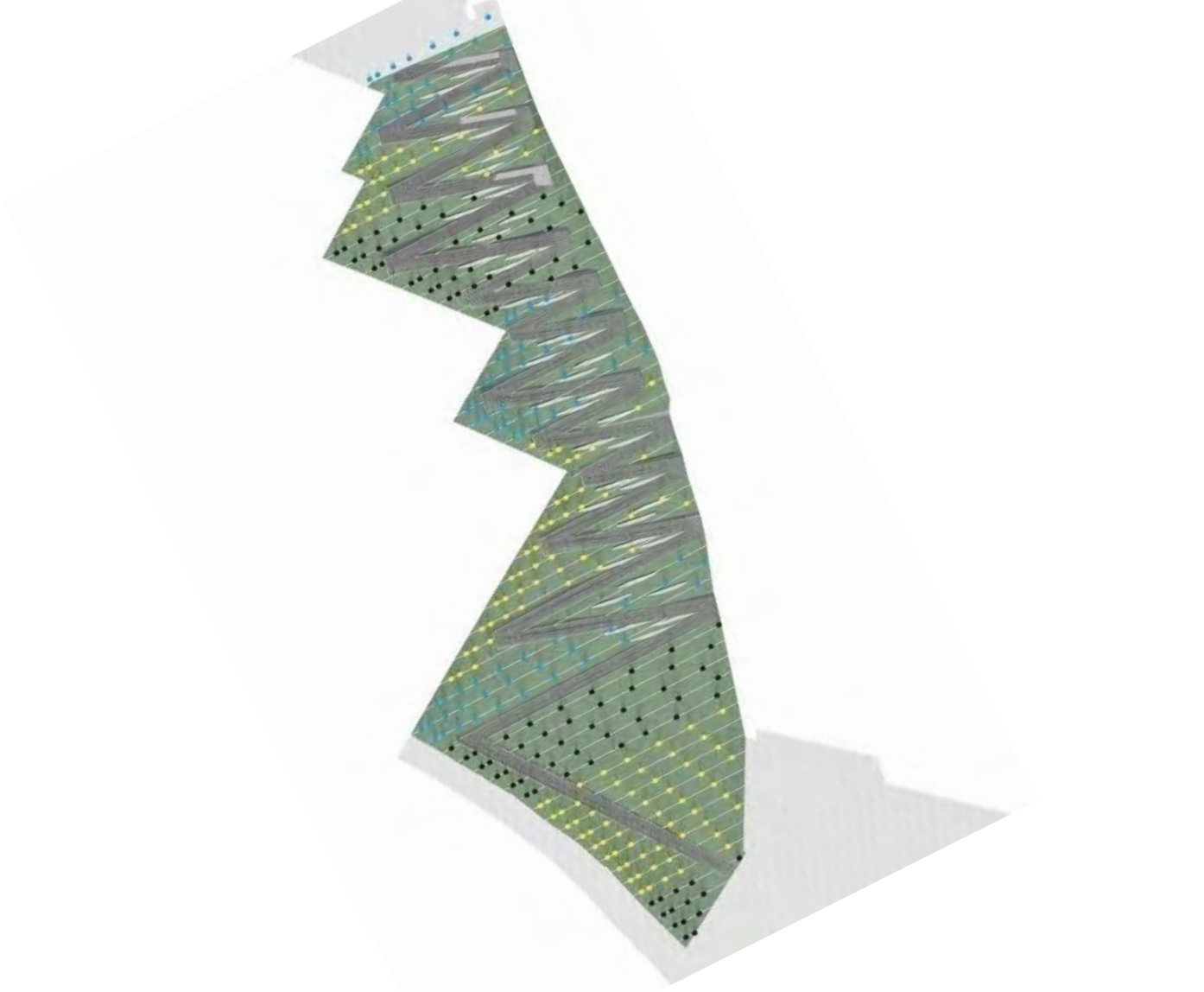
BALL BEARING

CNC ROUTED ALUMINUM PIPE

RUDDER REED



the sustainable urban forest




wind, water, light, bamboo; passers-by, lingerers, sports fans, lovers:
all caught up in a rich choreography of civic and environmental dynamics.

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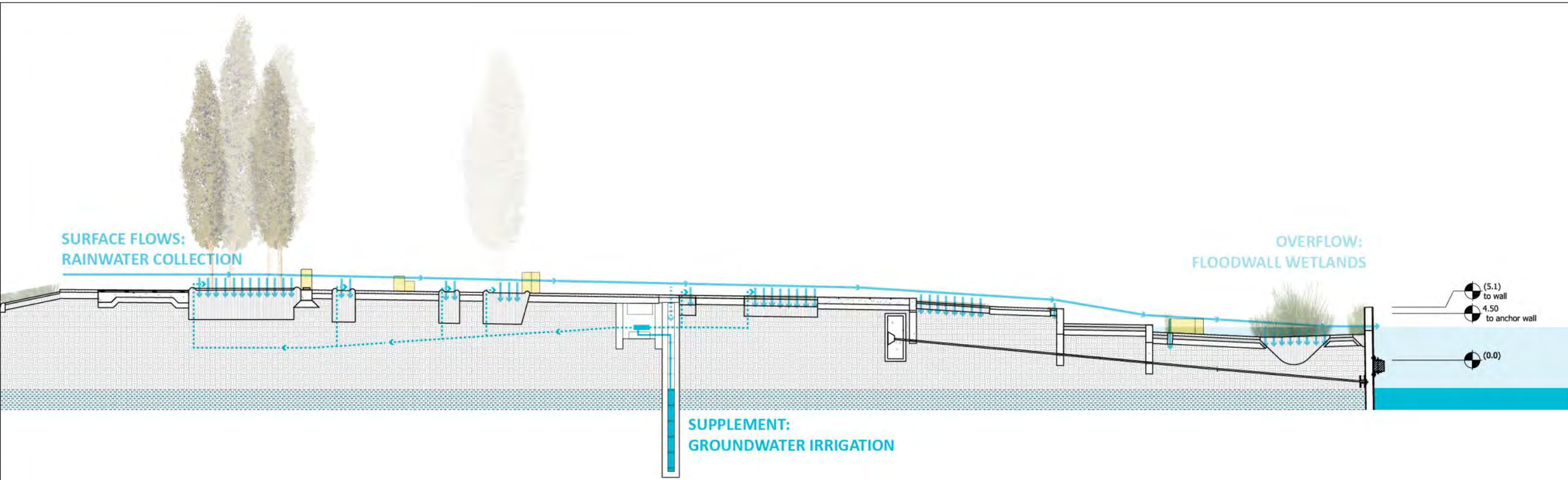
SURFACE FLOWS:
RAINWATER COLLECTION
OVERFLOW:
FLOODWALL WETLANDS
(5.1)
to wall
4.50
to anchor wall
(0.0)
SUPPLEMENT:
GROUNDWATER IRRIGATION