



## **Booth-Kelly Mixed-Use District**

**2012 • Department of Architecture**

Jennifer Pecenka • Department of Architecture  
Brook Muller • Associate Professor • Department of Architecture

## **Acknowledgements**

City of Springfield Staff:

Courtney Griesel, Senior Management Analyst, Primary City Project Specialist

Jeff Towery, Assistant City Manager

John Tamulonis, Community Development Manager, Historical Support

Sophia Seban, Property Management Coordinator, Facilities Support

Greg Ferschweiler, Maintenance Supervisor, MillRace/Landscape Support

Critics/advisors:

Tom Osdoba, Sustainable Business Consultant, Portland

David Cook, Architect, Stuttgart

Ryan Ruggiero, McKenzie River Trust

Ken Radtkey, Principal, Blackbird Architects, Santa Barbara

Adam Sharkey, Associate, Blackbird Architects, Santa Barbara

Yianni Doulis, Yianni Doulis Architecture, Portland

Josh Cerra, Assistant Professor, Department of Landscape Architecture, Cornell University

Hannalei Rozen, Activist and Designer, City of Springfield

## **SCI Directors and Staff**

Marc Schlossberg, SCI Co-Director, and Associate Professor of Planning, Public Policy, and Management

Nico Larco, SCI Co-Director, and Associate Professor of Architecture

Bob Choquette, SCY Program Manager

Aria Seligmann, SCI Communication and Outreach Director

## About SCI

The Sustainable Cities Initiative (SCI) is a cross-disciplinary organization at the University of Oregon that promotes education, service, public outreach, and research on the design and development of sustainable cities. We are redefining higher education for the public good and catalyzing community change toward sustainability. Our work addresses sustainability at multiple scales and emerges from the conviction that creating the sustainable city cannot happen within any single discipline. SCI is grounded in cross-disciplinary engagement as the key strategy for improving community sustainability. Our work connects student energy, faculty experience, and community needs to produce innovative, tangible solutions for the creation of a sustainable society.

## About SCYP

The Sustainable City Year Program (SCYP) is a year-long partnership between SCI and one city in Oregon, in which students and faculty in courses from across the university collaborate with the partner city on sustainability and livability projects. SCYP faculty and students work in collaboration with staff from the partner city through a variety of studio projects and service-learning courses to provide students with real-world projects to investigate. Students bring energy, enthusiasm, and innovative approaches to difficult, persistent problems. SCYP's primary value derives from collaborations resulting in on-the-ground impact and expanded conversations for a community ready to transition to a more sustainable and livable future. SCY 2011-12 includes courses in Architecture; Arts and Administration; Business; Economics; Journalism; Landscape Architecture; Law; Oregon Leadership in Sustainability; and Planning, Public Policy, and Management.

## About Springfield, Oregon

The City of Springfield has been a leader in sustainable practices for more than 30 years, tackling local issues ranging from waste and stormwater management to urban and suburban redevelopment. It is the first and only jurisdiction in Oregon to create two separate Urban Renewal Districts by voter approval. Constrained by dramatic hillsides and rivers to the north and south, Springfield has worked tirelessly to develop efficiently and respectfully within its natural boundary as well as the current urban growth boundary. Springfield is proud of its relationships and ability to work with property owners and developers on difficult developments, reaching agreements that are to the benefit of both the project and the affected property owners. These relationships with citizens are what continue to allow Springfield to turn policy and planning into reality. Springfield recruited a strong, diverse set of partners to supplement city staff participation in SCYP. Partners include the Springfield Utility Board, Willamalane Park and Recreation District, Metro Wastewater Management Commission, United Way of Lane County, and Springfield School District 19.

## Course Participants

*Marc Asnis, Architecture Graduate*

*Mike Beamer, Architecture Graduate*

*Aliki Biniaris, Architecture Graduate*

*Erik Bonnett, Architecture Graduate*

*Hannah Bryant, Architecture Graduate*

*Laura Cavin, Architecture Graduate*

*Daniele Cohen, Architecture Undergraduate*

*Emi Day, Architecture and Educational Leadership Graduate*

*Heather Ferrell, Architecture Graduate*

*Shane Gibbons, Architecture Graduate*

*Kimberly Hybel, Architecture Graduate*

*Kristin Kelsey, Architecture Graduate*

*Jennifer Pecenka, Architecture Graduate*

*Alex Rosenthal, Architecture Graduate*

*Courtney Skoog, Architecture Graduate*

*Kevin Young, Architecture Undergraduate*



# Table of Contents

Acknowledgements	2
SCI Directors and Staff	2
About SCI	3
About SCYP	3
About Springfield, Oregon	3
Course Participants	4
Executive Summary	7
Introduction	9
Site Opportunities and Constraints	11
Student work	19
Conclusion	49
Bibliography	51

*This report represents original student work and recommendations prepared by students in the University of Oregon's Sustainable City Year Program for the City of Springfield. Text and images contained in this report may not be used without permission from the University of Oregon.*



## Executive Summary

Graduate and undergraduate architecture students in Professor Brook Muller's terminal studio during winter and spring terms of 2012 examined potential redevelopment scenarios for the Booth-Kelly site, located in downtown Springfield. The site plays an important role in the economic, social, and environmental prosperity of the future of Springfield. The city anticipated redevelopment concepts and guidelines developed as part of the studio could potentially be adopted into the Downtown Refinement Plan and implemented in the future.

Students identified several programmatic schemes that describe how the site could become a destination location with a pedestrian-friendly appeal. Seen as a collision of industry and nature, sharing multiple habitats and crossing paths, the site's industrial beauty and rich history are ideal for unique design solutions that exemplify these characteristics. An in-depth focus on its ecology led many students to incorporate much of the surrounding context in a systems thinking approach. Many of the designs seek to interconnect various processes, from both onsite and offsite byproducts and resources, and to bridge natural and urban resource flows.

Common themes emerged with different programmatic emphases, including: adaptive reuse, agricultural production and distribution, community education, linking downtown to industry, and adaptable piecemeal development. While each project holds a different focus, the studio collectively promoted many of the same design values. Establishing the site as a public node linked to downtown, nearby parks, and pedestrian and bicycle paths will support walkability and increased site activity for public and private events, such as a farmers market, a concert, or a wedding. Each proposal also seeks to foster appreciation of the land and wildlife through its connection and rehabilitation of habitats and awareness of ecological functions.



## Introduction

The City of Springfield currently owns and operates the Booth-Kelly Center, which includes 17 acres of land and over 200,000 square feet of large industrial building spaces currently renting to Springfield businesses. Once a very productive lumber mill, Booth-Kelly was situated on the Springfield Millrace Pond, which is currently being restored to a natural prairie and wetlands area.

Throughout the 3-term project, students collaborated with city staff, local businesses, and advisors from various backgrounds, from sustainable business consultant to wetlands experts to a Springfield school principal. Given the site's wealth of resources at the collision of nature and industry, there is much potential for immersion in nature while directly interfacing with downtown. Existing infrastructure, a millrace, a prairie, a forest, a rail spur, and a rich cultural history to tap into contribute to the value of the site, especially in its close proximity to downtown and public transportation. Goals that the studio envisioned as common underlying threads for site development include:

Re-envisioned identity for Booth-Kelly

Mixed-use

Walkability

Flexibility and adaptability

Restored habitat and biodiversity

Increased value of ecology and wildlife

Reduction of impervious surfaces

Phased or piecemeal development

Many projects address phasing for development over time, allowing for funding and business partnerships to happen as the market enables them. Initial moves become the catalyst for site growth and anticipate a more built-out future in a manner that allows for flexibility. They also account for independent operation in the event that future development does not occur.

Other projects offer a specific vision for what the site has to offer the city. A built-in program of diverse uses with social, economic, and environmental dependencies creates a resilient system, capable of adapting over time to differing needs.



# Site Opportunities and Constraints

## LOCATION

The students' design proposals address the schematic site plan for Booth-Kelly in how it connects to downtown, the Willamette River, the millrace and its larger context. However, the area of focus has the following rough boundaries:

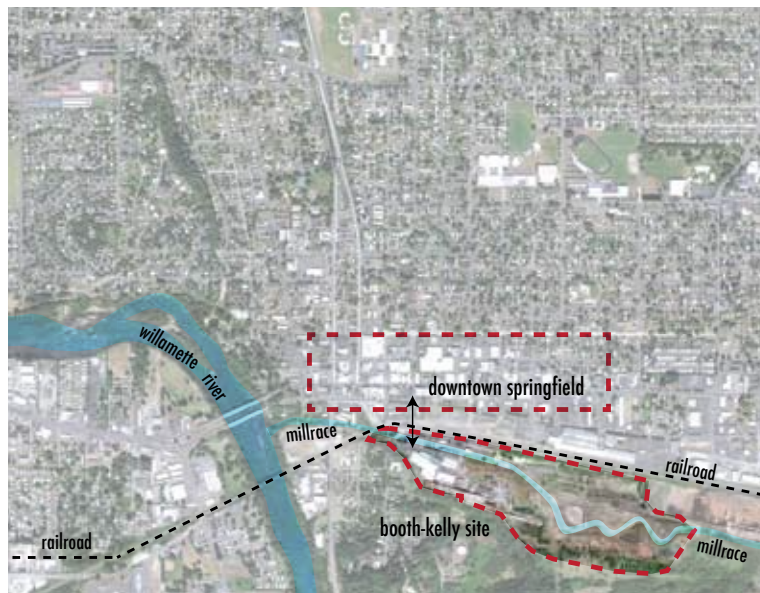


Figure 1: Vicinity map

North: Union Pacific Right-of-Way (Some proposals extend into the vacant block to the north)

South: Existing buildings to the south of the crane shed

East: Historic power generation building

West: Just west of 5th Street



Figure 2: Site map

## HISTORY

With a rich history of production and of harnessing the site's resources, Booth-Kelly has functioned as both an agricultural and industrial hub for the city. At one time employing over half the city's residents and producing much of the city's electricity, the site was a symbol of the city's cultural identity and a sense



Figure 3: Lane County Historical Museum image of sawmill, 1904.



Figure 4: Lane County Historical Museum image looking north, 1912.

of pride for the products produced. Using waste lumber and the flow of the millrace to power its mills, Booth-Kelly industries relied on connecting byproducts to processes and eliminating waste and inefficiencies. However, respect for the environment was not always a top priority, as shown by the on-site disposal of numerous materials over the years.

An evolution of the site is necessary to reinvigorate a sense of pride for its resources, jobs, and value-added products that adaptive reuse or new development could bring. A new, sustainably-minded manufacturing ethos could be adopted as part of the cultural identity.

## EXISTING BUILDINGS

The crane shed occupies a significant portion of the focus area. Given the condition of its foundation (built in and atop the millrace), it will have to be

moved to another location or creatively rehabilitated so that the millrace is day-lit and functions better ecologically. It may be possible that vestiges of the crane shed are kept to maintain its legacy while new structures are built around it.

The iconic sawtooth train shed building occupies the southern portion of the site bordering the hillside and harbors a viable train car restoration tenant over the existing rail spur lines. Many students propose to keep this structurally-intact building to maintain a piece of the site's historic identity.





*Figure 5: Existing crane shed.*

Many of the other structures onsite are nearing the end of their useful lives and need significant upgrades to attract new tenants. It may be more economically feasible to demolish them and reuse building materials where possible in new construction to provide more energy-efficient, flexible buildings with smaller footprints. This will help to minimize the impervious area and integrate natural habitat areas between buildings.



*Figure 6: Sawtooth train shed as industrial icon.*



*Figures 7, 8, 9: Existing buildings*

## THE MILLRACE AND WATER QUALITY

The millrace on the immediate site might assume characteristics found further to the east, in the newly rehabilitated portion of the millrace. The Army Corps of Engineers recently re-engineered the hand-dug channel to allow a specific water flow rate and to allow for side channels and ponds that enable the formation of more diverse habitats. Salmon once populated the stream, but since the millrace has been channeled through culverts and under the Crane Shed, salmon can no longer survive the straight, dark upstream swim through much of the city's untreated stormwater.

Imperatives to revitalizing the millrace include decreasing existing impervious surface area, minimizing the amount of stormwater generated on site, and improving the quality of stormwater runoff. Treatment elements slow stormwater, infiltrate it, and reduce the amount of sediment and pollutants in stormwater runoff.

Potential features include rain gardens, stormwater planters, infiltration planters, flow-through planters, pervious pavement, tree credits, vegetated swales, ecoroofs, vegetated infiltration basins, and cisterns.

People of Springfield used to come to the millrace to fish and swim, but have since have lost this intimate connection to the water. Terraces, outdoor gathering spaces, and interactive water features could bring the public back to the millrace while providing educational elements about its restoration and history.



Figure 10: Millrace flowing under the crane shed





Figure 11: Millrace channelized



Figure 12: Millrace restoration

## LANDSCAPE ECOLOGY

Nearby (and even distant) streams, wetlands, meadows, forests, and other habitats areas can directly affect, and can be directly affected by, the habitat quality of the site. Forested habitats (wooded areas with contiguous canopy cover), prairies (meadows) and wetland/riparian areas appear to be locally present habitat types with the potential for improved ecological function.

Given the adjacent butte, forest, riparian, and wetland habitats, a variety of species live in or could potentially inhabit these ecosystems, strengthening the value of connecting wildlife corridors and bringing an aesthetic and educational importance to preservation and restoration. Establishing an appreciation and need for biodiversity ensures long-term value of the site.



*Figure 13: Millrace aerial courtesy of RaptorViews by Philip Bayles, 2011*

Innovative site features that describe, educate, or demonstrate ecosystem features, functions, and phenomena bring awareness of the ecosystem in its relationship to the built environment, reinforcing the significance of restoring the millrace and prairie.

## **SITE ACCESS**

### **RAIL SPUR**

Though a physical barrier that disconnects Booth-Kelly from downtown with frequent trains, the site's location on the train tracks, including several rail spurs to the Train Shed, offers a unique opportunity to import and export freight or people to a large site within a few blocks of downtown. This is an attractive amenity for either the development of a rail hub for passengers or distribution of products or resources. It connects downtown Springfield to the Willamette Valley, Portland, San Francisco, and beyond.

### **PEDESTRIAN ACCESS**

The focal area of Booth-Kelly is highly visible from downtown and Main Street. People arriving from 5th Street may need a landmark or another wayfinding element to provide orientation to the site. Pedestrian access from downtown is critical and challenging, as it may require a bridge or overpass structure given the increased level of railroad traffic and the possibility of a high-speed rail hub. This access element could be considered as part of a high-speed hub, and could also be built in association with a new parking structure that would serve the hub, the Booth-Kelly site and downtown.

The site is currently a barrier between pedestrian and bicycle connectivity already established east past the city's edge to the forests and farms, reconnecting to the Willamette and mouth of the millrace at Clearwater Park and Landing, and west to Millrace Park and the network of paths to Eugene along the Willamette River. Linking these paths will be vital for community connectivity, site access, and a coupling of the path along the Millrace with a wildlife corridor. This connection will strengthen the immersion in nature, and will also bring recreational users and commuters through the site for increased business and site exposure.

### **EMERGENCY ACCESS**

Development on the site requires more than one way for emergency and other vehicles to enter and leave the site. A train could potentially block access to 5th Street, as well as an extension of 6th Street out to 9th Street. One option involves using 2nd Street, which is also a truck route, to connect to South B Street from the west. Another option is bridging over the tracks, either as a pedestrian walk with emergency vehicle access or as a vehicular overpass. However, the ramp would need to clear the tracks by 20 foot 9 inches (Oregon Department of Transportation, Div. 305), which would require a ramp distance of at least 250 feet.

### **SERVICE ACCESS**

This will be important for new businesses as well as for existing and future businesses that utilize spaces adjacent to the focus area. If pedestrians arrive at the site in increasing numbers, it will be vital to ensure their safety while providing service access. Keeping industry accessible but safe for pedestrians may require a degree of separation between pedestrians and heavy machinery.

## Student work

Student work is loosely organized by the following predominant themes: adaptive reuse, agricultural production and distribution, community education, linking downtown to industry, and adaptable piecemeal development.

### RE-ENVISIONING THROUGH ADAPTIVE REUSE

The existing buildings with large spaces and high ceilings, already wired for industrial use, offer many flexible options for adaptation. The spaces can be ideal for art production, industry, large events or gatherings, or they can accommodate tenants of smaller size by breaking up the spaces with partitions, modules, or multiple floors. To attract tenants and improve the quality of spaces and the lifetime of the buildings, students looked at sustainable daylighting and ventilation, as well as integrating the buildings with outdoor spaces in their relationship to the millrace, pedestrian and vehicular paths, and the connection to the landscape.

#### MIKE BEAMER: BOOTH-KELLY BEACH

In 1851, Elias and Isaac Briggs dug channels connecting a series of preexisting sloughs to create a new braid off of the Willamette River. The channel brought the power of the river to their property and spurred the development of the city of Springfield. The Booth-Kelly lumber mill thrived along the banks of the millrace for decades, providing employment to half of the city in 1917.

Today the Springfield Millrace is largely forgotten, and the site lies generally dormant. The lumber industry's recent decline has left the site an empty shell, awaiting new life. Honoring Elias Briggs' thoughtful use of the river, this project seeks to discover the latent resources in the area and make strategic interventions to increase productivity and quality of life. The interventions aim to engage the public with the ecological and economic processes which support the city of Springfield. This engagement will foster awareness of local dependencies, promote environmental stewardship, and support a sustainable local economy.

Figure 14: Beamer, building adaptation diagram

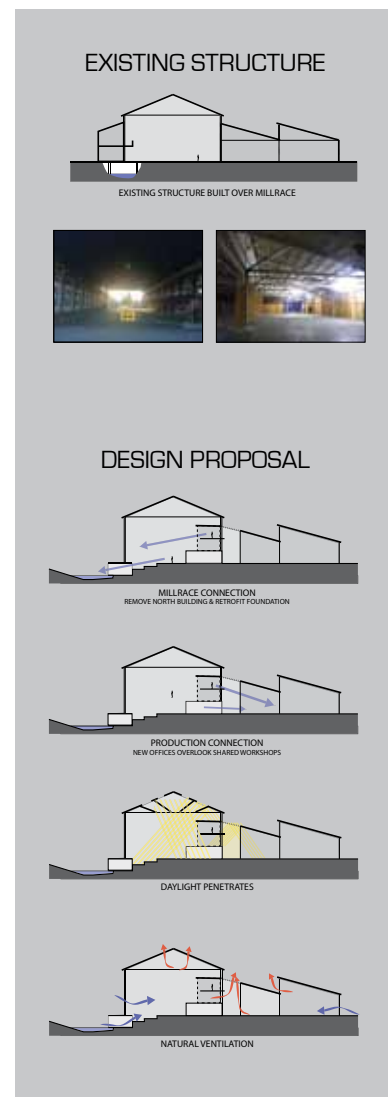






Figure 15: Beamer, Booth Kelly beach perspective



Figure 16: Beamer, Flexible use for a wedding

## COURTNEY SKOOG

A loosely woven framework sensitively filters and connects the social, ecological and industrial streams, providing a catalyst for the renewal of both Booth-Kelly and downtown Springfield. The Maker's Cooperative and the Greenhouse Gallery promote existing building reuse and flexibility of development over time.

Vestiges of the crane shed appear in the Maker's Cooperative and the Greenhouse Gallery as the renewed face of Booth-Kelly. The Maker's



Cooperative supports artisan manufacturing and incubation businesses within the multi-functional community center. Adaptable facilities with access to resources and education foster a new legacy for production in downtown Springfield. Connecting people to the natural and social resources on site, the Greenhouse Gallery enhances and emphasizes the millrace and the wetlands beyond while drawing people to Booth-Kelly through hosting year-round events, such as fundraisers, weddings, festivals, and markets, in a sheltered outdoor environment.



Figure 17: Skoog, crane shed reinvisioned for a wedding

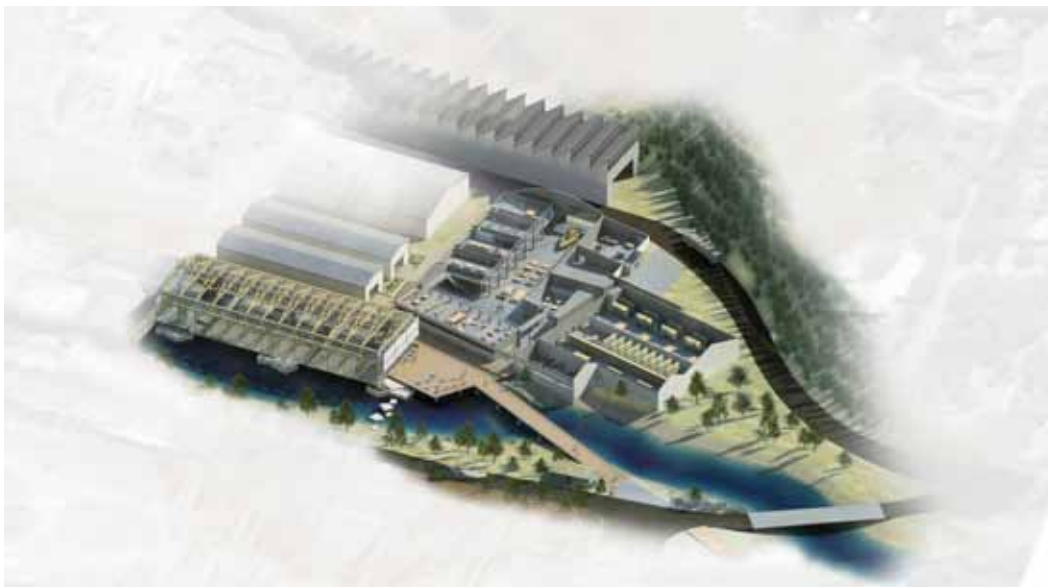


Figure 18: Skoog, aerial view of development

## AGRICULTURAL PRODUCTION + DISTRIBUTION

As oil prices continue to increase, thus increasing the cost of food production and transportation, local, organic food will take precedence over petrochemical pesticides and fertilizers, oil-fueled farm equipment, and rising transportation costs for traditional, industrial-scale monoculture farms. With the trend toward urbanization, a projected 80 percent of the world's population will live in urban areas by 2050 (<http://www.verticalfarm.com>). Farming in the city, linking industrial and agricultural byproducts, and distributing locally could bring food closer to the table, save valuable land and resources, and reduce the carbon footprint of food production. The social and economic benefits of focusing on community food security with better access to locally grown, processed, and distributed food will greatly improve the city's support for local businesses, walkability in downtown, and marketability for new residents and businesses.

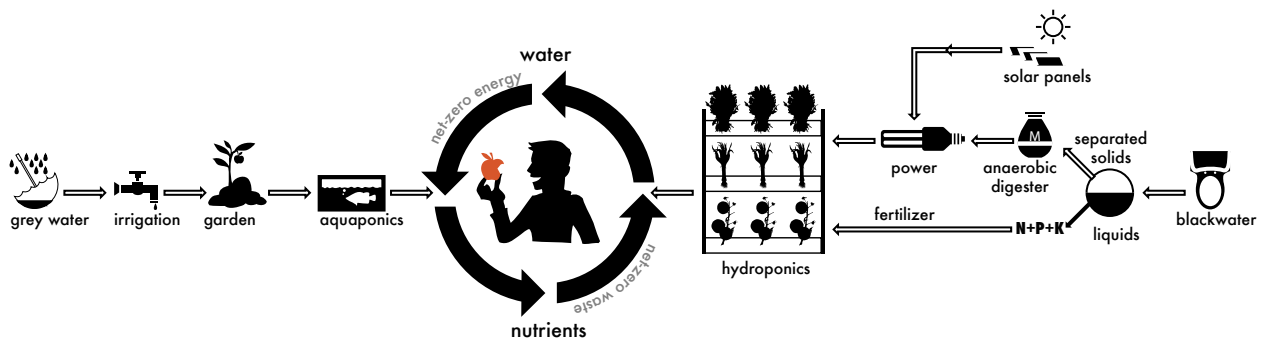


Figure 19: Pecenka, *Ecological Cycles of Urban Agriculture*

### JENNIFER PECENKA: FOOD CANOPY CO-OPERATIVE

According to Food for Lane County's website, one in three people is eligible for emergency food in Lane County, compared to one in seven nationwide (<http://www.foodforlanecounty.org/>). Of those affected in Oregon, 29 percent are children, the highest rate of any state.

The Food Canopy Co-operative addresses the local rate of food insecurity and poor access to groceries with

both community and production facilities centrally located next to downtown Springfield on rail, bike, and pedestrian networks. With business incubation

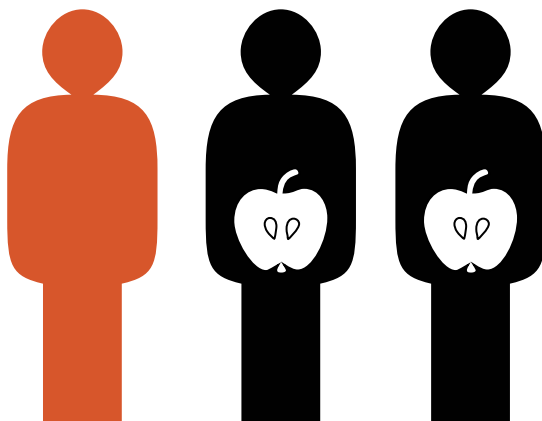


Figure 20: Pecenka, *food security infographic*

space, educational classrooms, artist live/work studios, and shared industrial farm and processing equipment, the importance of youth education, business training, and a community resource sharing is paramount to the programmatic space and organization of the site. Common threads among these activities, the canopy walk, the restored millrace, and recreational paths, will reconnect residents, students, farmers, and entrepreneurs to ecological processes and local resources while exhibiting the process of food from farm to table.

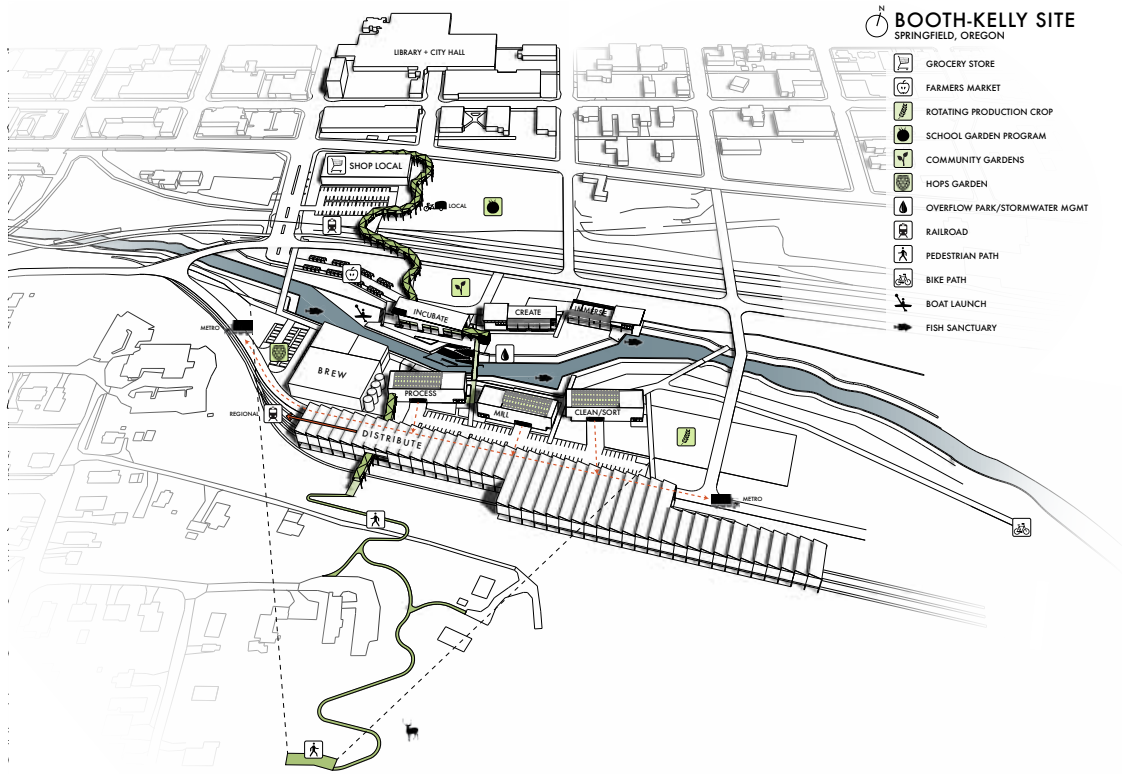


Figure 21: Pecenka, Aerial perspective from farm to table

The initial phase of development unearths and daylights the millrace while constructing a community center and several gardens focusing on community education and food production. Production facilities, including food processing, milling, and seed sorting and cleaning later augment this. The final phase supports the complete process of food harvesting and distribution while building potential for biomass cogeneration with the composting of agricultural residues. Working toward food production and education with net-zero energy and net-zero waste, the site aids the City of Springfield in becoming food secure, in incubating small businesses and local farmers, and in reconnecting people to water, food, and energy systems.



*Figure 23: Pecenka, Millrace is intersection of social and industrial activity.*

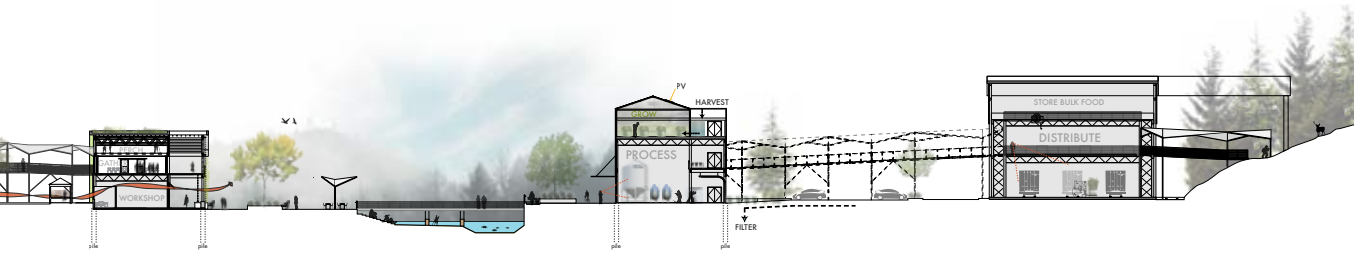


Figure 22: Pecenka, Site section of Food Canopy Walk

## ERIK BONNETT: ARABLE INTERFACE HUB

The Arable Interface Hub proposes a vision for how agriculture and cities can relate sustainably and resiliently. This vision is situated in the context of (1) climate changes that may shift food agriculture patterns toward higher production in the Willamette Valley, (2) recognizing that grass seed demand is declining and food processing infrastructure is rapidly developing elsewhere in the South Willamette Valley to meet rising demand, and (3) that agricultural industries could provide stable economic development in Springfield because of relatively low demand volatility and the strategic location.

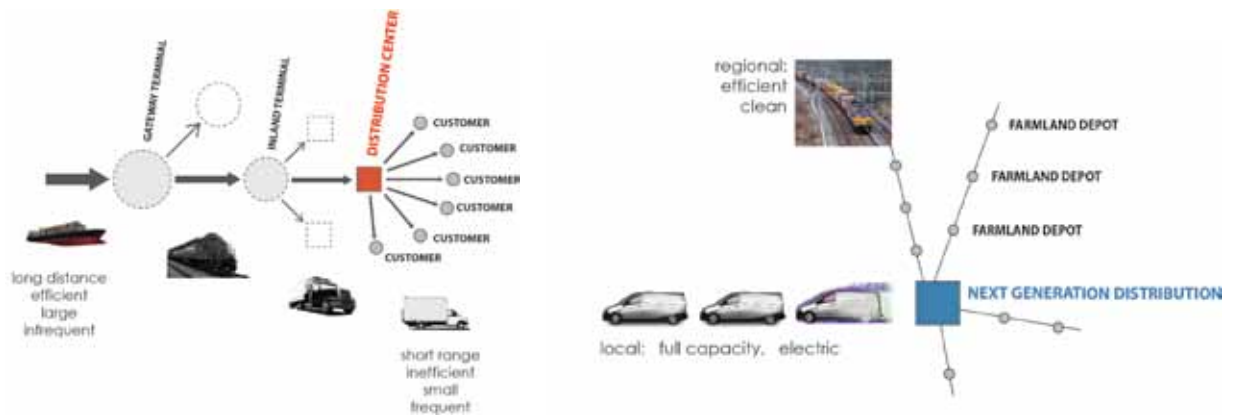


Figure 24: Bonnett, Efficient and clean transportation





Figure 25: Bonnett, Regional grower aggregation

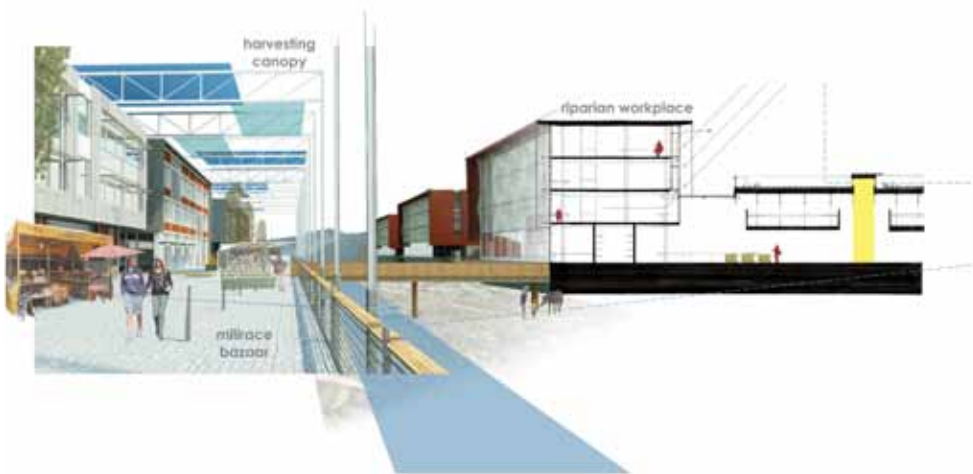


Figure 26: Bonnett, Landscape and buildings structure the interface of food production, wetlands, and public life.

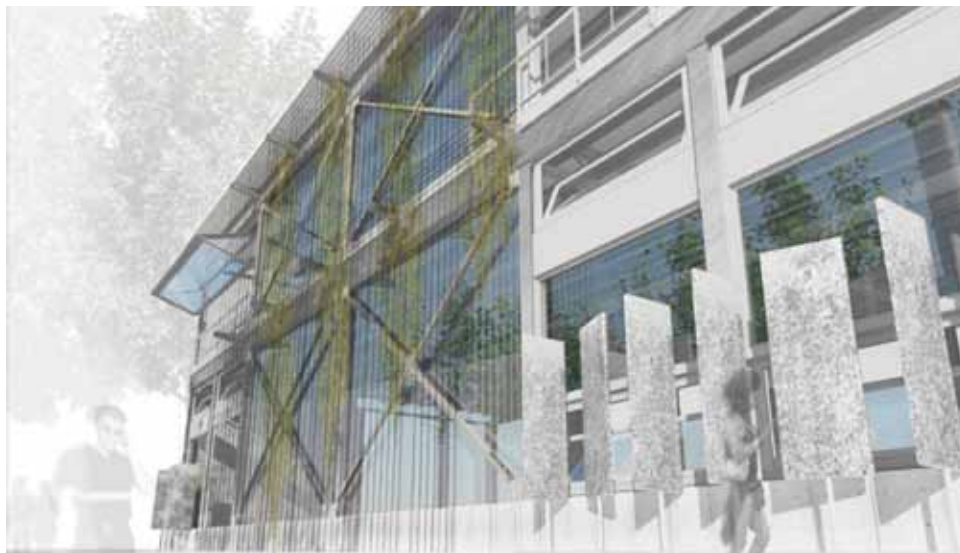
## KIMBERLY HYBEL: [EM] POWER GENERATION

With the inefficiencies of energy production and mass resource consumption within the United States, [Em] Power Generation intends to challenge and radically change the current systems and frameworks in place for non-renewable energy sources, inefficient large-scale industries, and centralized grids. Through the production of energy integrated with biosystems and overlapped with social experiences, the project demonstrates and induces sustainable small-scale industries, ecological business practices, and more efficient means of energy production. It carries the potential to act as a model or catalyst for a sustainable new frontier of industry and the next generation of a city.



*Figure 27: Hybel, Harnessing the energy potential from organic waste.*

Booth-Kelly's location in the Pacific Northwest with respect to its access to abundant renewable wood sources, its deep rooted history as an industrial site, and its access to a rail spur for large shipments, make the site ideal for a new generation of wood product industries paired with biomass cogeneration. At the forefront of the site sits a 25 megawatt biomass cogeneration facility, which collects and converts wood waste from a 50-mile radius into electricity and heat for the entire site and carries the potential to sell power back into Springfield's grid. Behind the facility is the iconic saw tooth building, repurposed for woody biomass storage, railcar repair, and office space above.



*Figure 28: Hybel, Microbrewery perspective.*

A multi-faceted pedestrian bridge provides movement of power, storage of woody biomass, stormwater management, recreational spaces, and commercial spaces. Workspaces and anchor businesses, such as a microbrewery, high value wood and glass product manufacturing, and a culinary kitchen, support public use, provide usable byproducts, and economically back program feasibility. Between these buildings, capillary streams from the millrace promote the health of the river and local ecologies while aiding in stormwater management and filtration.



Figure 29: Hybel, Multi-faceted pedestrian bridge.



## COMMUNITY EDUCATION

Students found a variety of issues to address relating to the social fabric of the city, especially in relation to its youth and educational opportunities. Low graduation rates, a lack of community activities, and a disconnection from the natural landscape surrounding Springfield lends design opportunities for recreation, places for inspiration and creativity, and building awareness of ecological processes into the architectural language.

### EMI DAY: THE CENTER FOR LEARNING ECOLOGIES

Only 62% of students in Springfield graduate from high school on time (US Department of Education). There are many challenges facing schools today, including the difficult process of redefining the set of skills this generation will need to be successful in the workforce.

A Center for Learning Ecologies, including a library, coffeehouse, and digital media center, represents a new vision of the future of learning. This is a place for peer-to-peer instruction, intergenerational dialogue, unexpected working groups, hyper-local digital storytelling, and international collaboration. The proposal is a system that provides constant incentives for change, supports the serendipitous nature of learning and celebrates the environment's interactive role as a factor affecting knowledge construction, creative revitalization of cities, and our relationship with each other and with nature. It is a space that illustrates the learning continuum as well as a scaffold meant to inspire people to engage with the world.

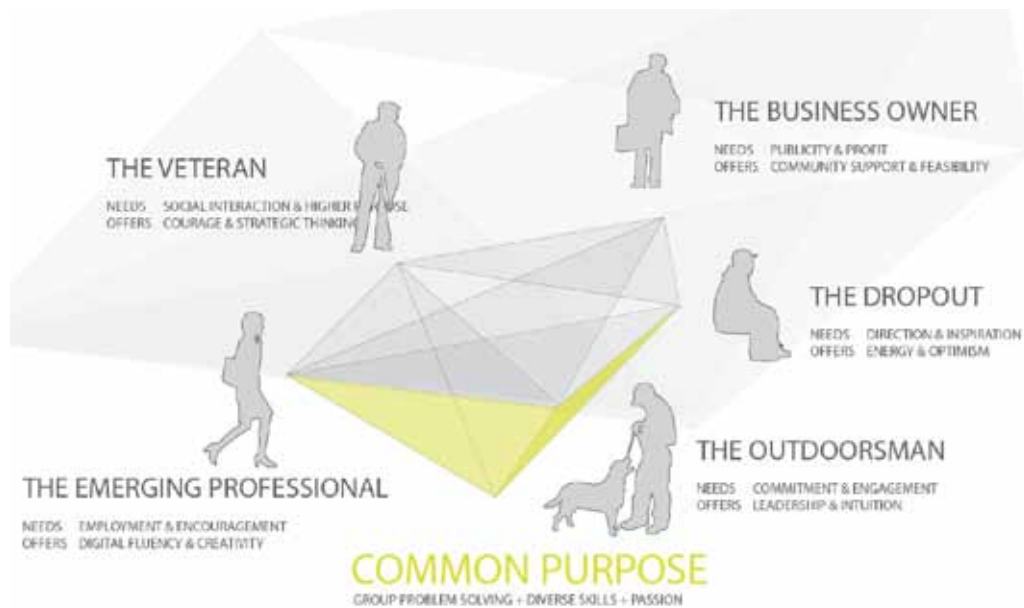


Figure 30: Day, Diagram: "ecology of minds: a common purpose"

The Booth-Kelly site could be a place that Springfield residents return to again and again for inspiration, for birthday celebrations, to buy their groceries, to people watch, and to discover the richness of their local community. The project seeks to increase ones chances of meeting someone new, learning something new, and creating something new. It is a space for people of different disciplines to co-mingle and to come together for a common cause.

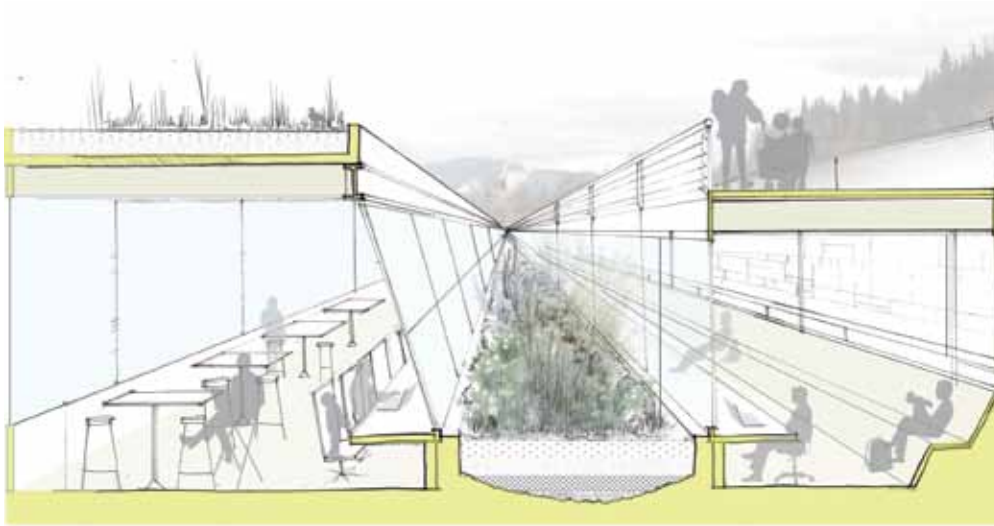


Figure 31: Day, Section: "gaze through the grass"



Figure 32: Day, Perspective: "sleep on the slope"

Architectural strategies for learning include LED feeds imbedded in pavers to display real-time events or quotes, signage synced with Linked-In or Facebook to help orient people to skill sets or access points for learning face-to-face, and transparent interactive smart boards framing the landscape around. The prisms in the building not only serve as a lighting and ventilation system, but display building-level data that people look up to for reference, such as the schedule of events or sustainability metrics, including the gallons of water collected and treated, the flow of the millrace, and the rate of rainfall.

“Our only hope for the future is to adopt a new conception of human ecology, one in which we start to reconstitute our concept of the richness in human capacity” (Sir Ken Robinson, educational leader).

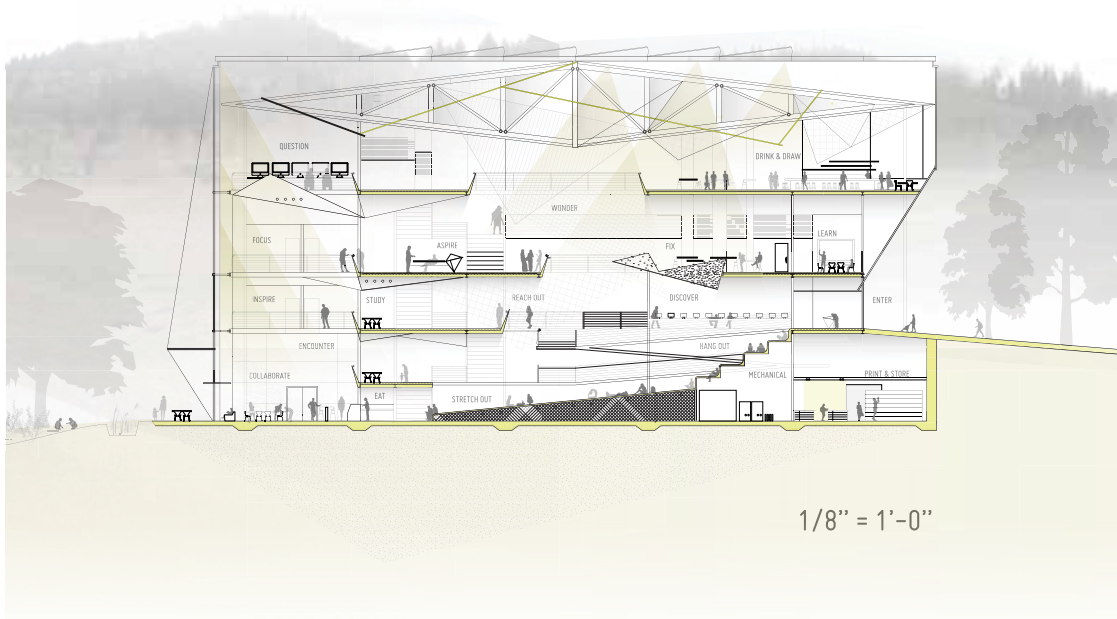


Figure 33: Day, Section

## SHANE GIBBONS: URBAN FIELDS

Urban Fields looks to create a dialogue between natural and cultural systems. The site strives to reveal interactions between natural processes and human habits spanning a range of temporal scales. Structuring the landscape enables users to more easily understand the complexities of these non-linear relationships and engage both cultural and natural processes. Physical barriers and visual separations structure the landscape allowing for intricate ecological systems to be detangled and presented to both recreational users and scientific observers. Fragmented landscape processes accompanied by the decentralized placement of buildings throughout the landscape contribute to define the qualities of these complex spaces.

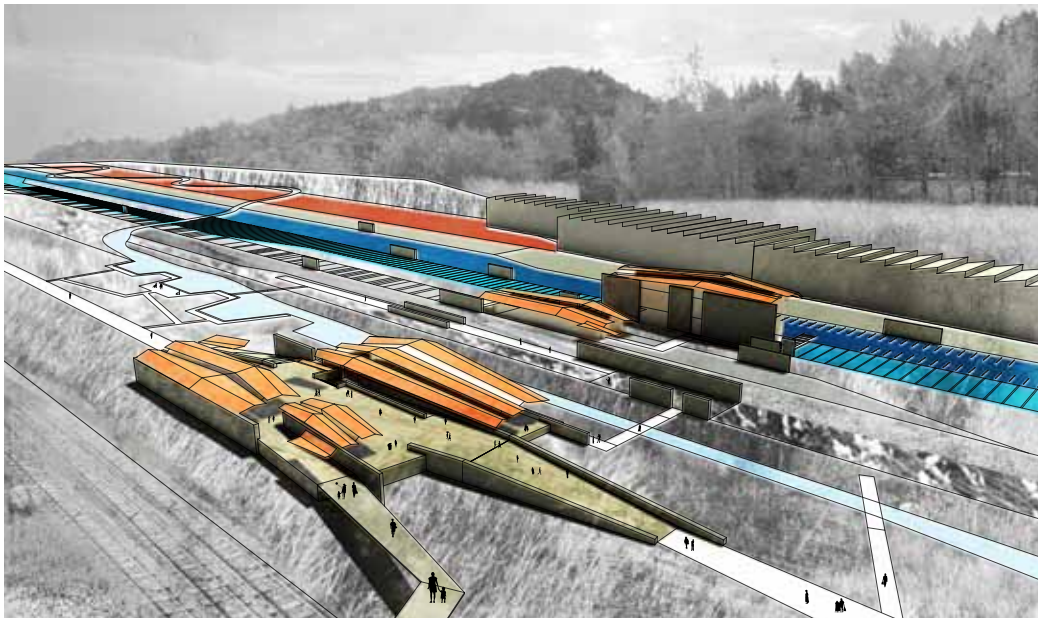


Figure 34: Gibbons, Aerial Perspective



Figure 35: Gibbons, Section

## ALIKI BINARIS: SPRINGFIELD YOUTH AND COMMUNITY CENTER

A youth and community center in Springfield proposes to become an integral part of community activity and recreation in Springfield. The center provides a safe and positive place for youth to hang out in addition to providing classes, recreation activities, and opportunities for event planning. With spaces for existing programs like Planned Parenthood, trained counselors for support, and recreation facilities, such as basketball, volleyball, rock-climbing, a trampoline room, a skate park, and meditation and yoga classes, teens can develop real world skills and knowledge.

The youth members are encouraged to take on the role of stewards in helping to care for the site. The key word is integration; as it is both a youth and community center, individuals can take on different roles at different times, from participant to teacher. This integration encourages all members of the city to take part in creating a social center and community atmosphere. Events like movie nights, community mural painting, and cooking classes will help foster this atmosphere and promote a healthy lifestyle.

The mixed-use aspect of the program helps create a diverse and active site with activities and interests that will reach a wider demographic. A community of artists, boardwalk business owners, and youth center patrons commingle in the celebration of the arts and recreation with a transparency of development, integral for interactions within the spaces that foster viewing, learning, and exploring.

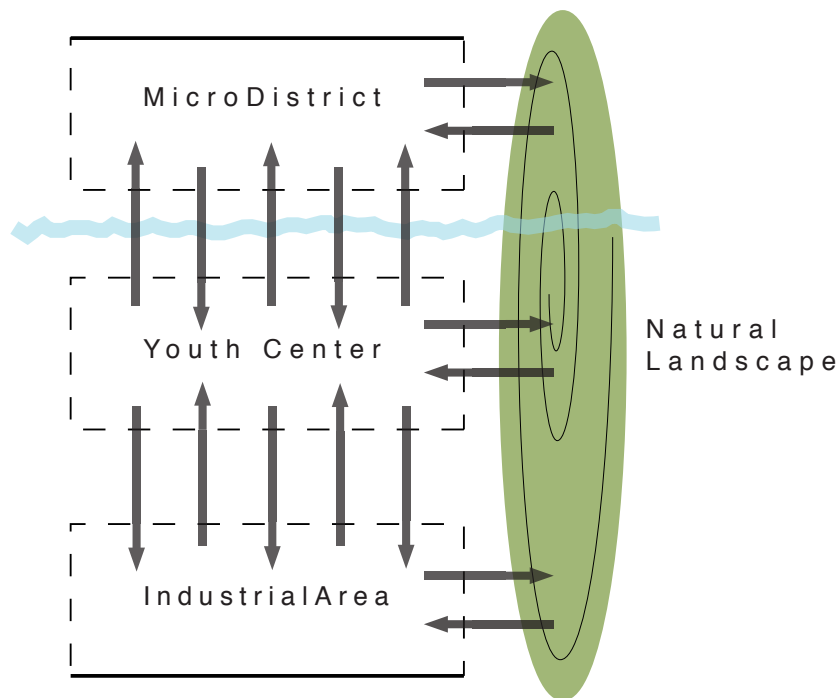


Figure 36: Binaris, Transparency of function and interaction with the natural landscape.





Figure 37: Binaris, *Creating community through celebration of the arts*

### **HANNAH BRYANT: SPRINGFIELD ACADEMY**

This vocational-technical high school is based on the belief that local economic development is most sustainable when grown from within. Its academic curriculum teaches contemporary, innovative applications of traditional regional trades while providing professional and practical experience. When not in use by the students, the facilities are available for a variety of rental uses: incubator businesses may utilize the commercial kitchens and woodshops while community events, weddings, and conferences can occupy indoor and outdoor spaces. Adjacent commercial space along the North Bank feeds upon the energy and the commercial base of the school, making it a prime location for cafes, artist studios, and other small businesses.

Beyond the building program, the site has been rehabilitated to foster space for playful exploration for folks of all ages. The Millrace meanders through the site, creating seasonal beaches, eddies for wading and pockets of current for leaf races. The school campus is connected to the commercial North Bank with a series of bridges, as well as a seasonally flooded stepping stone sculpture that encourages the adventurous to leap from stone to stone to get across.



Figure 38: Bryant, Programmatic plan diagram

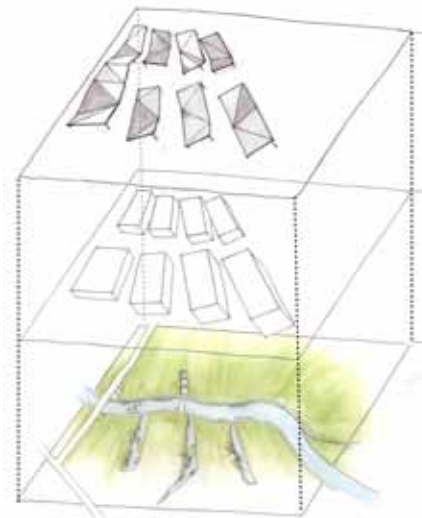


Figure 39: Bryant, Layered systems diagram

The vibrancy of the school campus, the commercial opportunities of the North Bank, the excitement of passing trains, and the childlike joy of crossing foot bridges and playing near water all serve to draw a wide variety of local citizens to the site. Once there, many will discover the vast expanse of rehabilitated wetland with its walking and biking trails and its secret ponds and wildlife to the east. This site

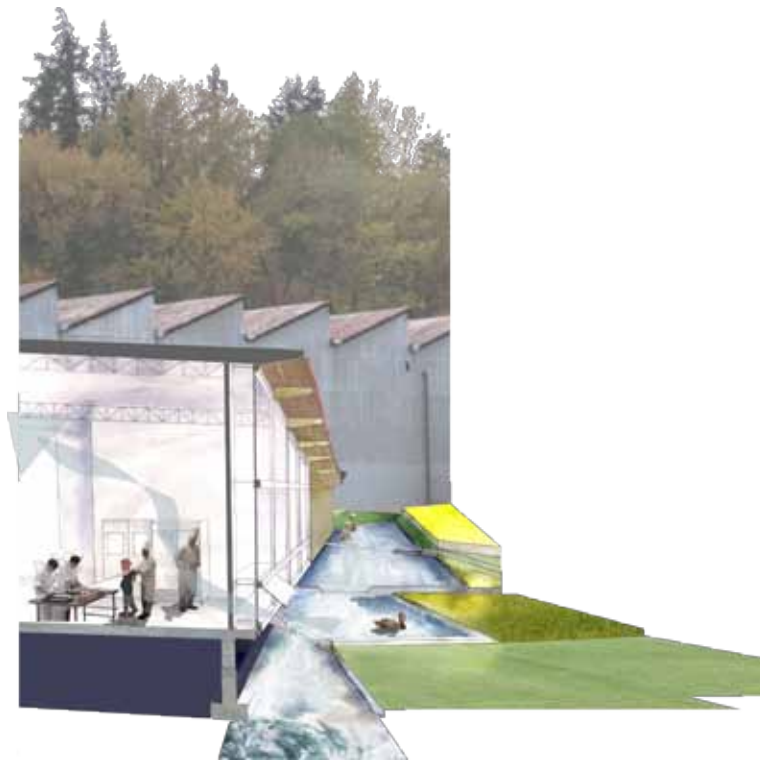


Figure 40: Bryant, Section perspective

serves as a gateway for exploring and appreciating the natural beauty just blocks from downtown while helping to grow the economy for the future.

## LINKING DOWNTOWN TO INDUSTRY

Springfield's rich history revolves around production, and the center of the city's productive capacity has long been the Booth-Kelly lumber mill, two blocks south of downtown. The decline of the mill since its peak in the early 20th century has left a vacancy in the urban fabric, and has contributed to Springfield's diminished sense of identity. Bringing industries to the Booth-Kelly site, which produce and sell goods on site, could bring value-added products and a newfound sense of pride in industry and art.

### HEATHER FERRELL: ARTCYCLE PARK: MATERIAL RECOVERY FACILITY & INDUSTRIAL ART CENTER

The average American generates 4.6 pounds of trash per day, 1,460 pounds per year. In a collaborative effort, we throw away 195 million tons of garbage per year (US Environmental Protection Agency). Traditional designs of solid waste facilities promote expedience and a design intended to conceal the facility. In contrast, the goal of artCycle is to reveal the waste disposal and recycling processes as well as to encourage the definition of resources to include products that currently populate the landfill.



Figure 41: Ferrell, A waste spectacle

A Material Recovery Facility (MRF) is the first step in the recycling process. Single-stream recyclables are brought to the facility where they are cleaned



and meticulously sorted by people and machinery. A thorough sorting process results in high quality reusable material.

Building off the Millrace Restoration Project, artCycle Park has the potential to create a connection between the parks of Springfield and Eugene. It would be a link between the already developed bike and running paths of Alton Baker Park to the northwest and Clearwater Park to the southeast. Intercepting recreationists in a spectacle of waste diversion, the Industrial Art Center is a place for artists and incubator businesses to take advantage of materials coming in on the waste disposal pipeline. Shared resources, such as wood, metal, and glass shops, as well as space for community workshops and youth programs, facilitate creative reuse of materials.

### ALEX ROSENTHAL: MILLRACE MAKE LAB

The Millrace Make Lab is architecture of beneficial disturbance - a catalyst that reconnects the Booth-Kelly site to downtown Springfield and to a neighboring wetland complex currently undergoing restoration. The Make Lab serves as a public gateway to the restored millrace and wetland complex, and recharges a culture of craft in Springfield and the region while honoring the culture, history and ecology of the Booth-Kelly site.

Composed of a series of three buildings, the Make Lab rises from the millrace and is oriented toward downtown Springfield with a large transparent face that engages the public with the process of making. The public park that occupies the north bank of the millrace becomes the auditorium, while the Make Lab itself is the stage. The actors, engaged in production, present a new face for Booth-Kelly and renew the public's connection to its history and place.

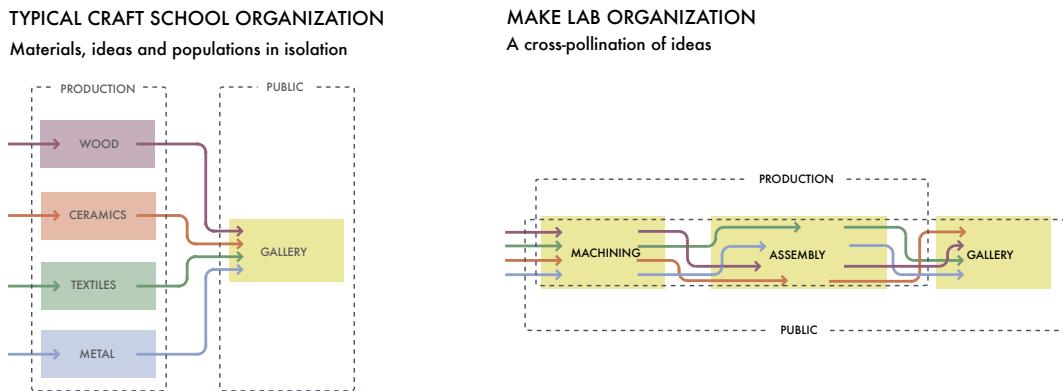


Figure 42: Rosenthal, Make Lab organized as a cross-pollination of ideas.

The Make Lab serves not only as a way to engage the public with a culture of craft and the process of production, but it also exposes the users of the workspace to new materials, techniques and creative processes. The organization of the workspace encourages people to work side-by-side with people who are using different materials, assembly techniques, or processes of their own. This collaboration and cross-pollination helps build a community of craft.

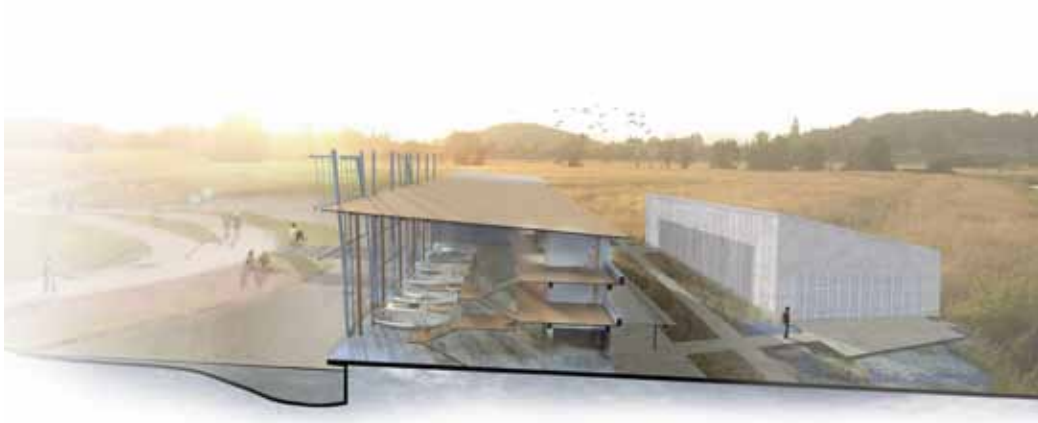


Figure 43: Rosenthal, A theater of production.



Figure 44: Rosenthal, Cultivating a community of craft in Springfield.

## KEVIN YOUNG: SPRINGFIELD ECOLOGICAL ENERGY DEMONSTRATION (SEED)

Reinventing how we look at waste is crucial to achieving sustainability.

The Springfield Ecological Energy Demonstration (SEED) is a project focused around the rethinking of waste flows and the economic and ecological potential of re-using waste as a resource. The site as an intersection of industry, natural ecosystems, and the city has caused a detrimental condition to arise in the soil and existing ecosystems. As a result, it has become important to rethink the manner in which waste is handled on a daily basis, by turning waste into fuel in a cyclical, rather than linear process.

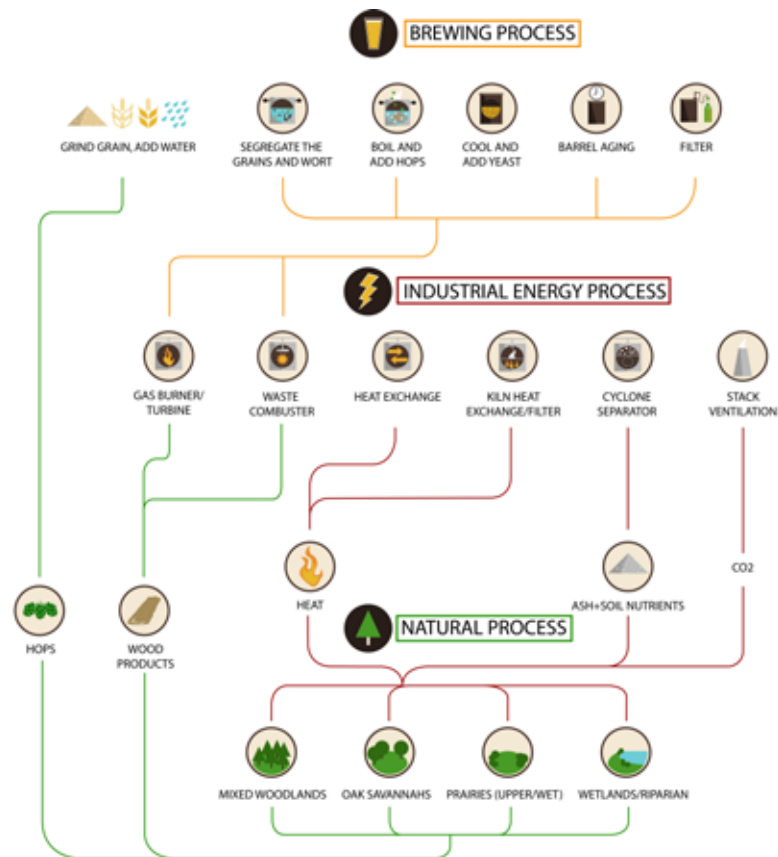


Figure 45: Young, Diagram of functional relationships

The program centers around brewing production while identifying and reusing biowaste byproducts as a resource for biomass cogeneration (heat and power). In turn, the byproducts of cogeneration (carbon dioxide, heat, and ash) can feed into natural ecological systems, such as heating thermal baths. By creating this interaction of resources in a closed-loop system, a symbiotic relationship can occur between public elements (drinking, making beer, and soaking) and private elements (energy production) as a unique, insightful experience.

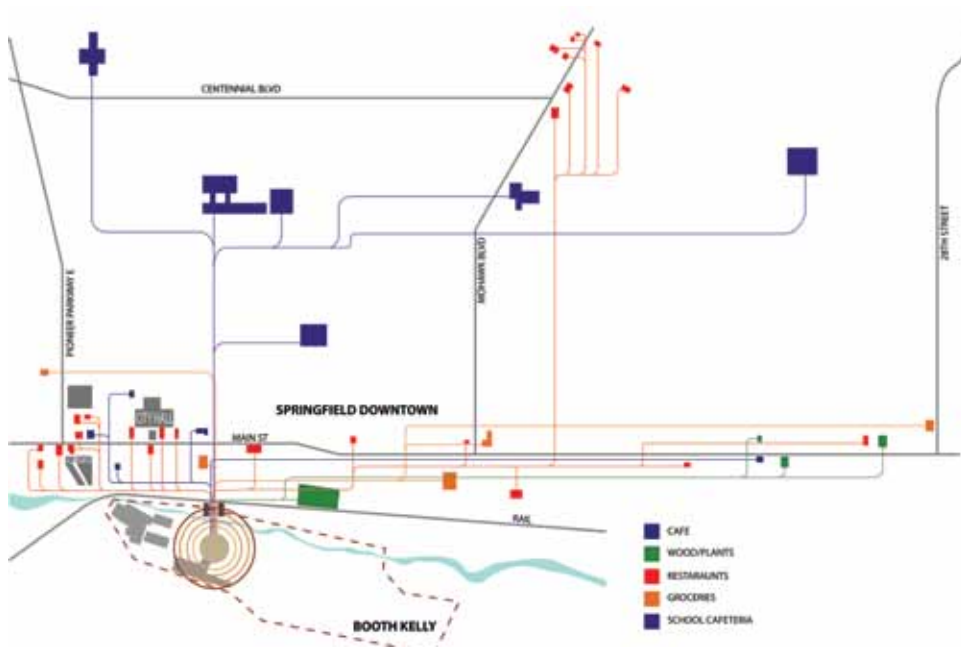


Figure 46: Young, "Feeding the system."

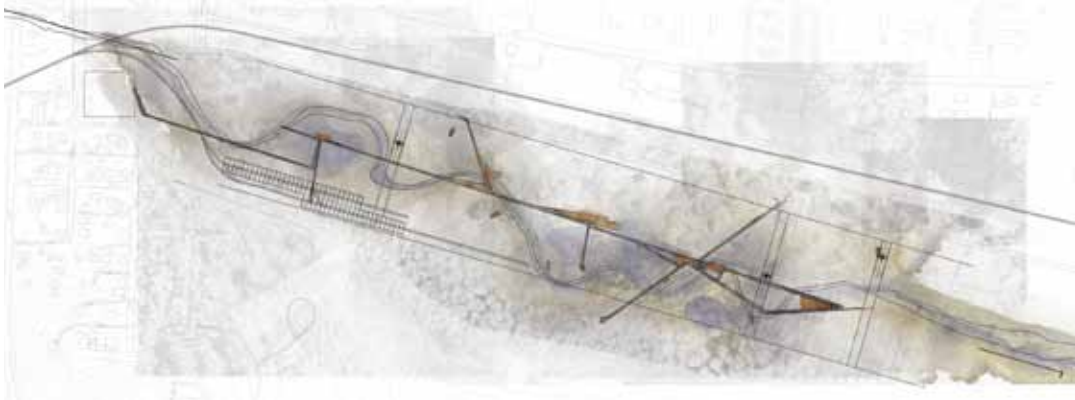


Figure 47: Young, Interior perspective

## KRISTIN KELSEY: WETLAND GRAFTING FOR RESTORATIVE LANDSCAPES

Wetland grafting is a proposal for a wetland farm that harvests grafts of the landscape for wetland propagation in other areas of the Pacific Northwest. The ex-industrial site is situated at the bow of a river, the edge of a city grid, the base of a butte, and the place of historical and future extremes. Since the first disturbance at Booth-Kelly, industrial processes have rubbed up against its wilder edges. This place, formed by disparate and controlled uses, must look for a future state built on the weaving of its latent infrastructural and ecological potentials.

The wetland farm harvests restored wetland scions on the Booth-Kelly site, utilizing existing timber facilities and a Union Pacific rail spur to export these sections of landscape. A recipient site is excavated to receive the mature wetland graft. This disturbance regime will more rapidly propagate wetlands in other areas. As proof of wetland resiliency, this testing site of extreme conditions motivates the stitching of new architectures into the existing infrastructure of Booth-Kelly. This proposal looks to exploit existing extremes through their reorganization.



*Figure 48: Kelsey, Site plan of restored wetland environment*

The architecture sits lightly within this landscape, becoming the sinuous link between the heavy industrial equipment and the restored wetland environment. This relationship questions attitudes and use patterns of protected natural landscapes and the exploitation of industrial landscapes. What are the infrastructure opportunities for the integration of these ecosystems in the formations of new productive landscapes?

How can we sustainably harvest natural resources without creating wastelands in contrast with highly protected and idealized natural landscapes? Can their intersection and re-imagination lead to more livable and conscientious people places?





Figure 49: Kelsey, Wetland harvest



Figure 50: Kelsey, Scions transplanted in urban context

## DANIELE COHEN: THE FARM

The Farm at Booth Kelly proposes to restore the site's vital connection to Springfield, providing jobs, education, and spaces for recreation for the entire community. Today the main entrance to Springfield is by car. This proposal builds on the city's efforts to become the terminus of a new high speed rail line - creating a new gateway for Springfield. A public plaza anchors the station and a renovated 'civic street' supports and connects it to the library and city hall along Sixth Street. This path continues along the

spine of the building itself which serves as a bridge, connecting the city to the 'village well' and the restored wetlands.

The design will foster resilient micro-infrastructures that serve as 'ecosystem services' for businesses, people and wildlife. The proposal includes Lane Community College's new extension Tech campus, a data center that utilizes environmental cooling strategies, and office spaces for IT companies and small businesses. This mix of business and education facilities will provide financial stability for the city, bring people to the site, and create opportunities to support smaller start-ups by offering world class working facilities at affordable rates.

Supporting this industrial network is a revitalized millrace that acts as a social hub, a place to gather with family and friends, greet the salmon, and rekindle an old connection to the urban stream. Taking cues from both the revitalized wetland to the east and the history of industrial water use on the site, this proposal

seeks to combine storm water management with public gathering spaces to create a gradient of spaces for everything from active recreation to quiet reflection.



Figure 51: Cohen, North facade



Figure 52: Cohen, South facade

## ADAPTABLE PIECEMEAL DEVELOPMENT

“In order to create successful urban environments, we must create a planning system that is permanently adjustable” (Stig Andersson, *Process Urbanism: City as Artificial Ecosystem*).

The consequences of the current global recession, as well as a general lack of consumer interest in downtown revitalization has left many commercial vacancies within Springfield’s downtown district. Many large, vacant commercial spaces remain unoccupied due to rigidity in terms of building subdivision and lack of a variety of leasing opportunities. Gateway Mall and its adjacent big box stores currently dominates the shopping culture in Springfield, further promoting the vehicle-centric culture.

More flexibility in the design of spaces accommodates the needs of various types and sizes tenants. On a site such as Booth-Kelly, where development could occur over decades as needed, a framework plan could lay ground rules for development while allowing flexibility in growth, developers, uses, and architectural styles. Looking holistically at energy networks, circulation, wildlife corridors, and building phasing, a piecemeal approach to development could aid the city in sustainably managing and funding the site for long-term use and adaptability.

## MARC ASNIS: METABOLIC NETWORKS

Metabolism: A set of chemical reactions that happen in living organisms to sustain life. These processes allow organisms to grow, reproduce, maintain their structure, and respond to their environment.

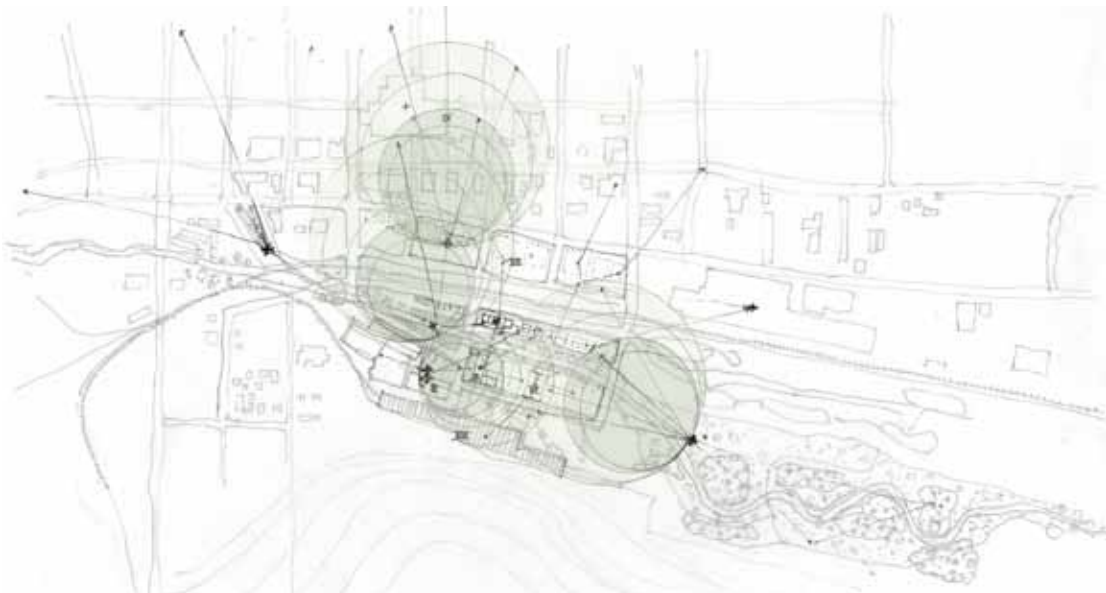


Figure 53: Asnis, *Metabolic networks diagram*

By emulating the process of metabolism, downtown Springfield will become a dynamic environment that will perpetually grow and change in response to the economical, natural, and social environments. The framework plan's primary objective is to transform Springfield into a resilient, bustling city that can adapt to the constant fluctuation of economic, environmental, and social variables. The city's long-term prosperity will be achieved through various stages of development, which are incrementally incorporated over the next 50 years.



*Figure 54: Asnis, Module cluster interior courtyard*



*Figure 55: Asnis, Night rendering of a movie in the park*



## LAURA CAVIN: TOWARD ADAPTIVE PRODUCTIVITY (TAP)

TAP's mission is to connect the ecological, economic, and social resource nodes in Springfield by positioning the Booth-Kelly site as a new model for high-value production spaces. The blurred boundaries between indoor and outdoor and industry and ecology encourage spontaneous interactions and collaboration.

Current extractive economies and manufacturing blips occur when the economy demands continual growth, and provides for it through natural resource depletion. The definition of growth must shift to focus on the regenerative properties and the ability to create value-added products produced from locally available renewable resources, such as water and wood. Human innovation and collaboration are necessary to merge systems and create an interconnected regenerative economy, social network, and ecological systems.

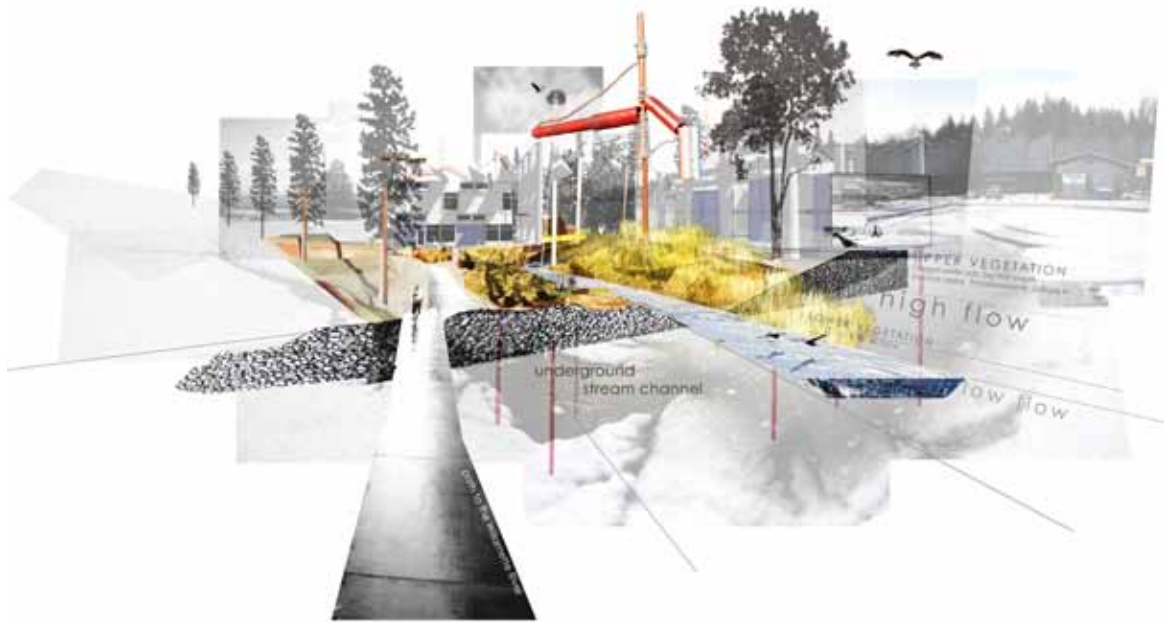


Figure 56: Cavin, Infrastructure development perspective

TAP provides places for fluctuation to occur beneficially with resilience through flexibility. Seasonal water variations expose the natural processes to the community. Phased development occurs as the economy allows, and buildings



are flexible with 'under designed' spaces that allow for a diversity of uses and tenant investment, ownership, and alteration.

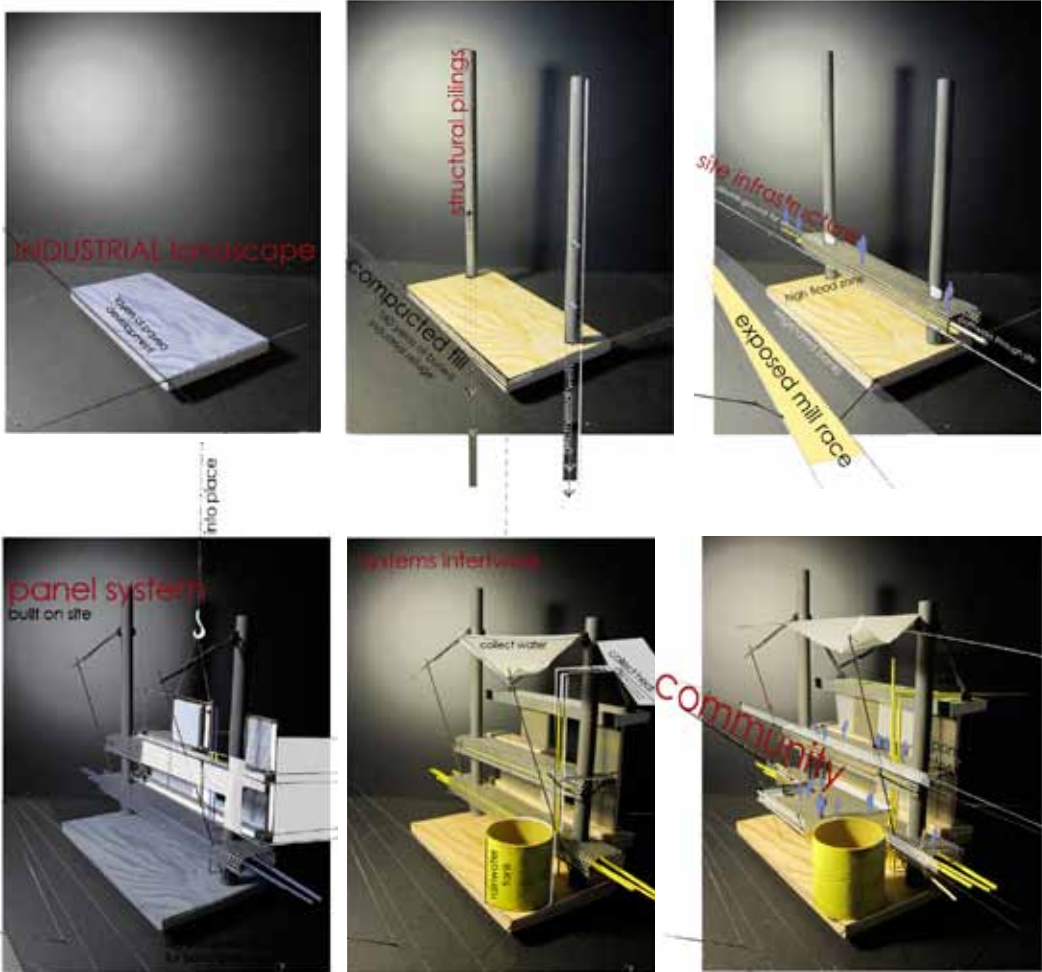


Figure 57: Cavin, Construction phases of development



## Conclusion

Such a collision of industry and nature and of urban grid and curving millrace requires a sensitive design that responds to converging paths and seemingly disharmonious uses or users. Booth-Kelly can reclaim its importance in the community by providing a mixed-use development rooted to its context while giving back to its residents. With the understanding that architecture is not a static object in space but a dynamic, living process integrated into a larger evolving network, proposed solutions should allow for diversity, adaptability, evolution, and transparency of process. As a living system, processes such as water, energy, waste, and other resource flows are interconnected, thus creating a regenerative system. Whether a design concentrates on community events, youth and education, recreation, food security, or value-added products, the importance of holistic systems thinking is paramount in the future sustainability of the site and potentially, the city.

“What can give force to such projects is precisely this capacity to give new impetus to a place, in the sense of creating resonance, synergy, interaction with it, while at the same time transcending it, criss-crossing it, multiplying it rather than completing it. This would bring out its potentials, would overcome its inertias and would reveal the landscape of what already is together with what is not yet” (Gausa).



## Bibliography

City of Springfield Millrace & Mill Pond Restoration Project. Online. 11 June 2012. <<http://www.springfield-or.gov/Pubworks/MillRace/index.htm>>.

Department of Transportation, Rail Division. Division 305: Overhead Clearances. Oregon Secretary of State. 2012. Online. 24 June 2012. <[http://arcweb.sos.state.or.us/pages/rules/oars\\_700/oar\\_741/741\\_305.html](http://arcweb.sos.state.or.us/pages/rules/oars_700/oar_741/741_305.html)>.

Food for Lane County. 2012. Online. 24 June 2012. <<http://www.foodforlanecounty.org/>>.

Gausa, Manuel. "Architecture is (Now) Geography." Archilab's Earth Buildings: Radical Experiments in the Architecture of the Land. ed. by Brayer and Simonot. Thames and Hudson, 2003.

Guy, Simon and Farmer, Graham. Reinterpreting Sustainable Architecture. Wiley and Sons, Inc. 2001.

Johnson, C.W., G. Bentrup, and D. Rol. "Conservation Corridor Planning at the Landscape Level—Managing for Wildlife Habitat." National Biology Handbook. USDA, Natural Resource Conservation Service. 1999.

Koolhaas, Rem. "Beyond Delirious." Theorizing a New Agenda for Architecture. Ed by Kate Nesbitt. New York: Princeton Architectural Press. 1996.

Lyle, John Tillman. "Chapter 3: Strategies for Regenerative Design." Regenerative Design for Sustainable Development. John Wiley and Sons. 1996.

Muller, Brook. Architectures of Beneficial Disturbance. University of Oregon. 2012.

O'Neill, R.V et al. A Hierarchical Concept of Ecosystems. New Jersey: Princeton University Press. 1986.

Paul, Michael and Meyer, Judy. Streams in the Urban Landscape. Institute of Ecology, University of Georgia. Annual Reviews. 2001.

Taleb, Nassim Nicholas. The Black Swan. New York: Random House. 2007