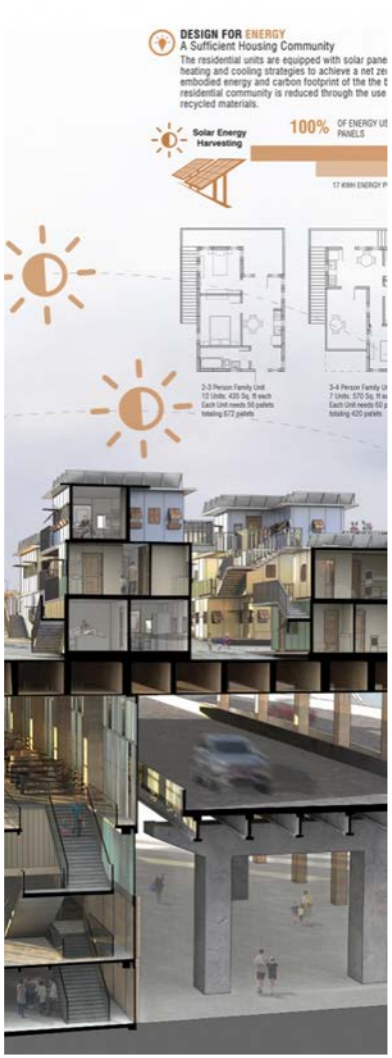


AIA
COTE Top Ten

AIA COTE Top 10 for Students Competition

AIA Framework for Design Excellence

The Framework represents the defining principles of good design in the twenty-first century. Comprised of a series of **ten value statements** and accompanied by searching questions, it informs progress toward a **zero-carbon, equitable, resilient, and healthy** built environment…It is intended to be **accessible** and **relevant** for every architect, every client, and every project, regardless of size, typology, or aspiration.

WE ARE DESIGNING A SUSTAINABLE, HEALTHY, EQUITABLE WORLD, TOGETHER

AIA

THE FRAMEWORK FOR DESIGN EXCELLENCE: TEN QUESTIONS

The AIA Framework for Design Excellence can be expressed as a set of questions to ask yourself throughout the design process:

1: Design for Integration

What's the big idea behind this project? What is its purpose?
How do its separate pieces fit together into a coherent whole?

2: Design for Equitable Community

Who gets to use this building and how does it benefit its users and its community? How has the community been engaged to shape the design? Who is invited in, who is excluded? How does its location and design promote equitable access to its benefits, strengthen its community, and reinforce means of transportation that support health and reduce emissions?

3: Design for Ecosystems

How does this project benefit the earth? How does it impact the living systems around it?

4: Design for Water

How does this project work with and delight in water, and how does it use water wisely?

5: Design for Economy

How do you provide abundance with an economy of means?

6: Design for Energy

How does the design work with, rather than fight, local climate to provide a comfortable place for people with the least energy use and carbon emissions?

7: Design for Well-Being

How does the design promote the health of those who spend time in it?

8: Design for Resources

Why did you select the materials you did? Where do they come from, what's their impact (including the pollution and carbon impact of their manufacture), and where will they go after the building is gone?

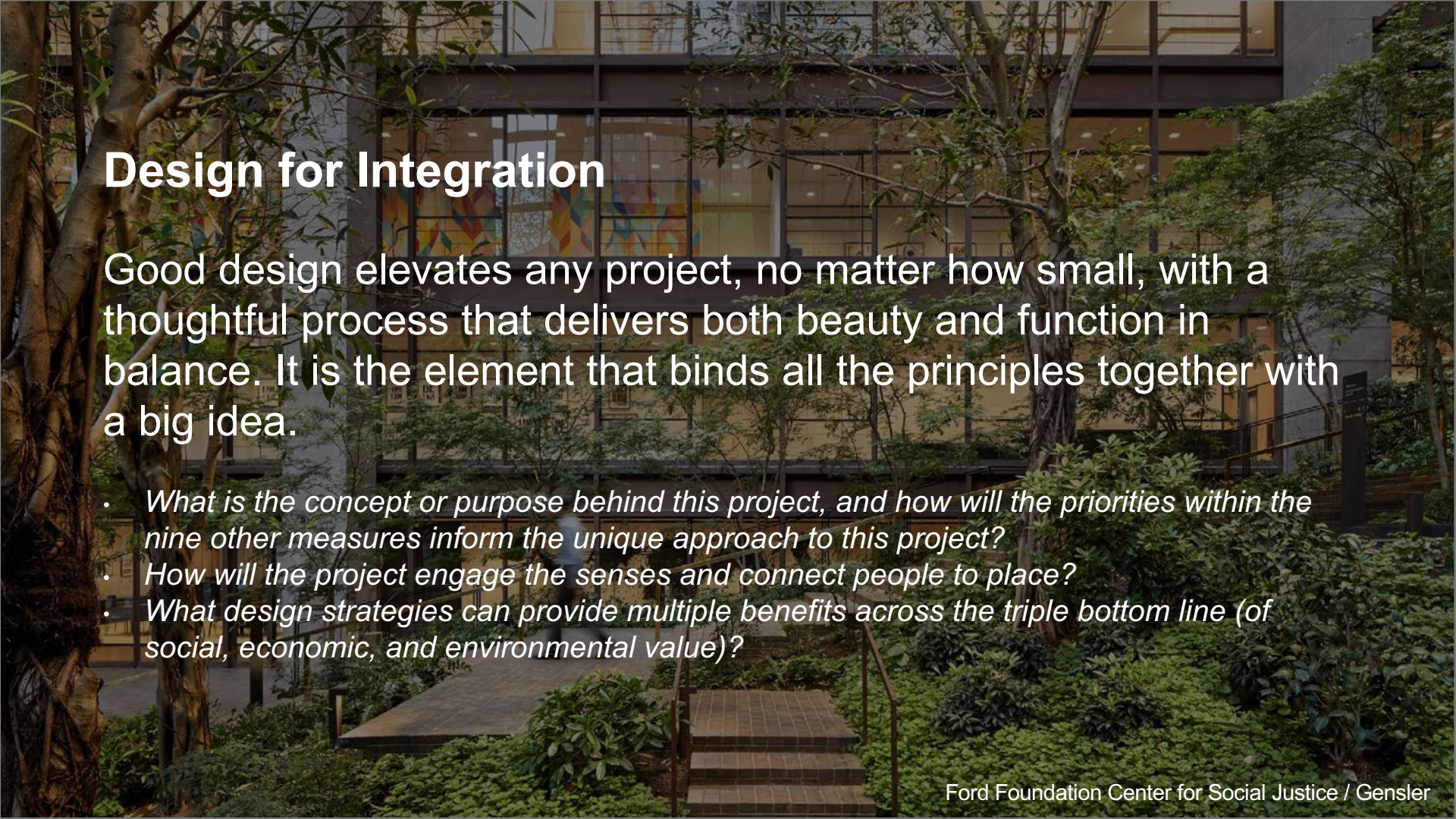
9: Design for Change

How is the project designed for a long life, yet with a 'loose fit' that allows it to be adapted to changing needs? How does the design anticipate a changing climate and recovery after disaster? How does it build social, economic, and community resilience in the face of climate change and natural disasters?

10: Design for Discovery

How does your design allow the building to learn from its users, and allow its users to learn from the building? What lessons have you learned from the project? Where have you failed, fallen short? What will you carry forward?

Ford Foundation Center for Social Justice / Gensler



Design for Integration

Good design elevates any project, no matter how small, with a thoughtful process that delivers both beauty and function in balance. It is the element that binds all the principles together with a big idea.

- *What is the concept or purpose behind this project, and how will the priorities within the nine other measures inform the unique approach to this project?*
- *How will the project engage the senses and connect people to place?*
- *What design strategies can provide multiple benefits across the triple bottom line (of social, economic, and environmental value)?*

Ford Foundation Center for Social Justice / Gensler

COMMUNITY	ECOLOGY	WATER	ECONOMY	ENERGY	WELLNESS	RESOURCES	CHANGE	DISCOVERY
Place based								
Aquifer/ watershed shared resource	Native landscape / Rainwater harvesting							
Financial resilience	Economics of biophillic design/ low maintenance	Water savings / water independence						
District systems	Bioclimatic and passive design	Energy from water transport/ treatment	Life cycle cost/ life cycle analysis					
CO2 from transportation/ air quality	Connection to nature	Water quality	Productivity and operational costs	Daylighting				
Locally sourced materials	Material extraction, mfg, trans, disposal	Aquifer/wetland conservation, quality	Durability/ maintenance of materials	Embodied carbon in materials	Material transparency/ safety			
Social equity as component of resilience	Climate change and increased natural disasters	Flooding, increased rainfall, drought	Right sizing/ flexibility for growth	Carbon's role in climate change	Passive survivability	Embodied savings from adaptive reuse		
User groups, profiles, heat maps	Biodiviersity	Mindful presence of water	Replicable investments in strategies	Measurement and verification	Tracking health impacts	Future adaptability	Post occupancy evaluations	

Integrative design connects natural and built systems to achieve deeper and higher performance. Each design measure should contribute to multiple design outcomes.

For instance, addressing water quality on site has a positive impact on water resources while improving human health - integrative design for integrated outcomes.

What types of synergies can you create in your project through mindful integration?

Design for Integration

Narrative: Describe how sustainability strategies are incorporated into the overall design. What are the major environmental issues and goals? How does the building respond to the local climate, site and occupant comfort?

Suggested Graphics: Building section, or other appropriate diagram that demonstrates bioclimatic strategies and concepts. A profile of local climate that illustrates appropriate design strategies, or summary sustainability diagram (for building operations)

Metric: Percent of the year that occupants will be comfortable using passive systems

Sample Strategies

- Incorporate lessons from other disciplines—such as psychology, anthropology, and neuroscience—to appeal to universal biological proclivities and culturally specific values.
- Diagram the relationship between the design concept and how sustainability measures are integrated and complementary to the project's goals for beautiful design.


BAZAAR 324
324 S Front St, Memphis, Tennessee
Confederate Park
Court Square
MISSISSIPPI RIVER
76
Very Walkable
Most errands can be accomplished on foot
61
Bikeable
Some bike infrastructure
AutoZone Park
Orpheum Theatre
Memphis Music Hall of Fame
Beale Street
Tom Lee Park
Bazaar 324
FedExForum
National Civil Rights Museum


Roof Plan
Second Floor Plan
Circulation
Public
Residents
Ground Floor Plan
Northwest Section View
Northwest Site Elevation
Southwest Sectional Perspective
Southwest Site Elevation
Tulip Poplar
Oak
Red Maple
Bradford Pear

The Six / Brooks Scarpa

Design for Equitable Communities

Design solutions affect more than the client and current occupants. Good design positively impacts future occupants and the larger community.

- *What is the project's greater reach? How could this project contribute to creating a diverse walkable (accessible), human-scaled community?*
- *Who might this project be forgetting? How can the design process and outcome remove barriers and promote inclusion and social equity particularly engaging vulnerable communities?*
- *How can the design support healthy and resilience for the community during times of need? / during times of emergencies?*

The Six / Brooks Scarpa

Design for Equitable Communities

Narrative: How does the design respond to the region where it's located? How does the design promote regional and community connectivity? What steps are taken to encourage alternative transportation?

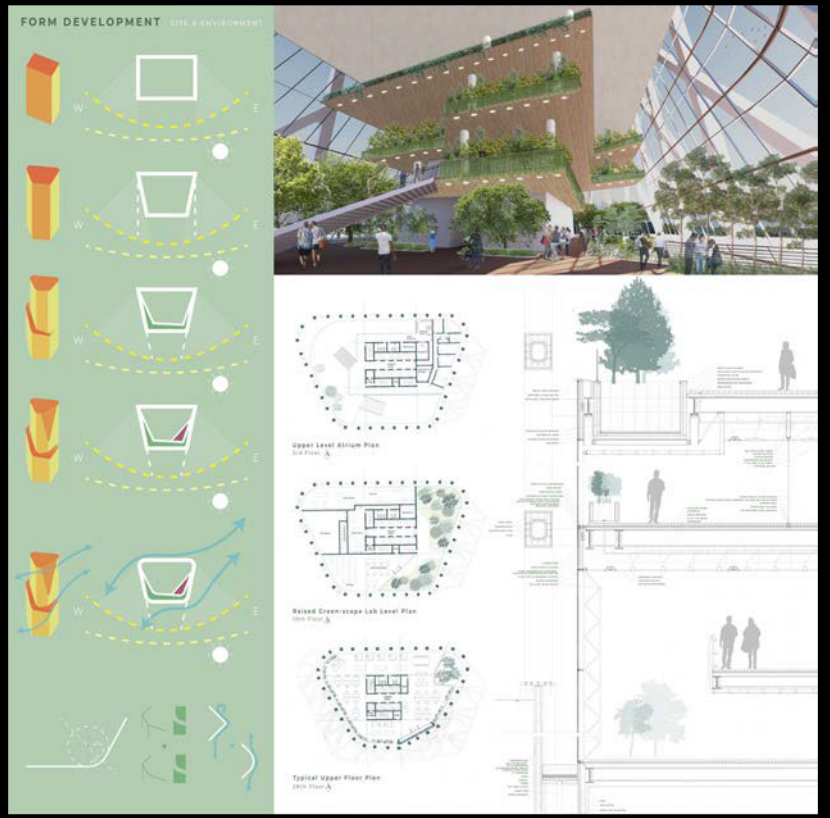
Graphic: Open

Metric: Walk score: (from Walkscore.com) and/or urban networks diagram (walk, transport, etc.)

Sample Strategies

- Seek creative strategies to promote alternative transportation and decrease dependence on single-occupancy vehicles.
- Identify your community and work with them to define shared goals.
- Go out of your way to make the project accessible to someone who might not have otherwise benefited from it.


BIO TOWER
A Green Medical Research Hub
POPULATION
TREE COVERAGE
Charlotte, NC

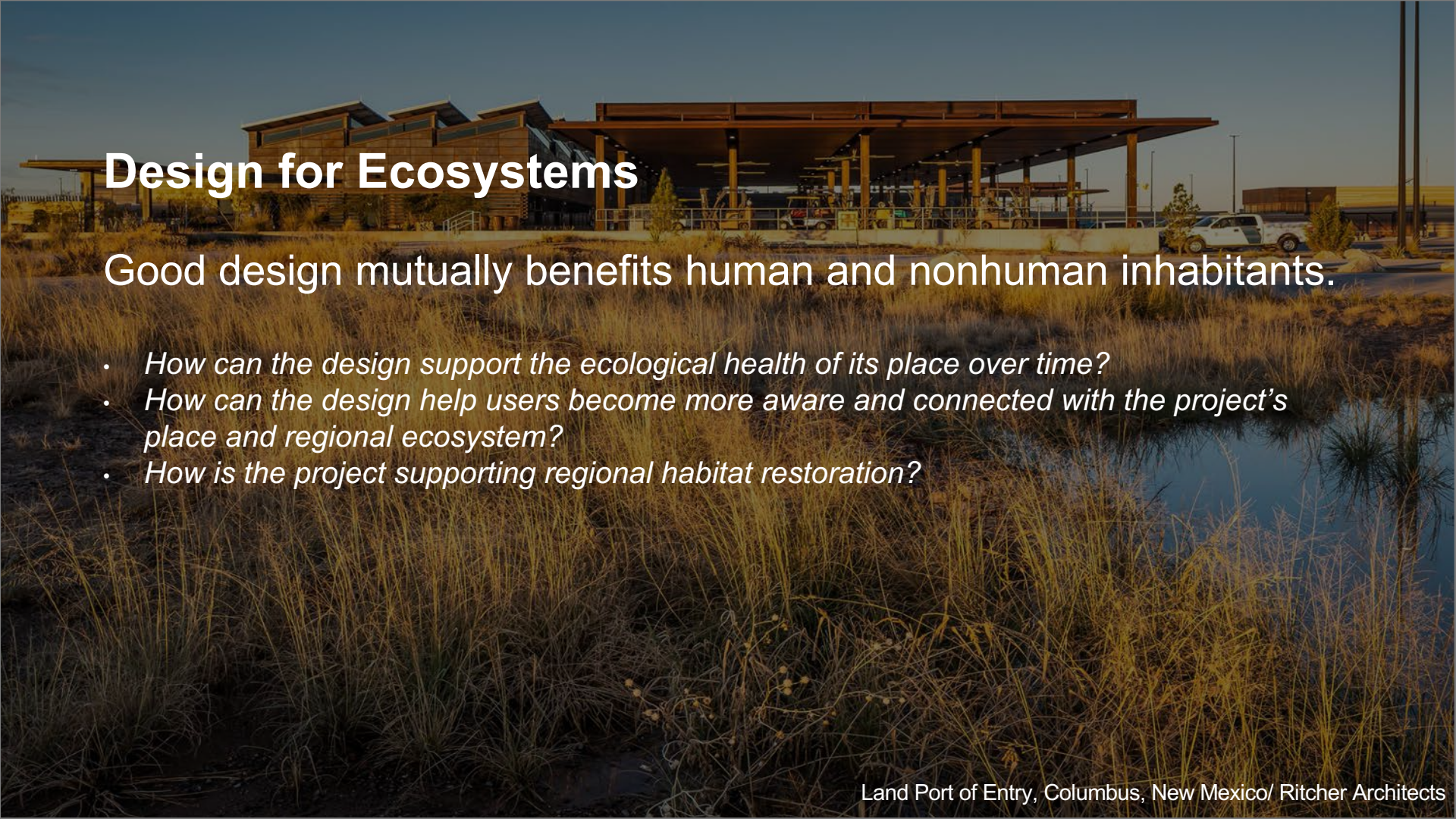

FORM DEVELOPMENT
CITE X ENVIRONMENT
Upper Level Atrium Plan
Raised Green-scape Lab Level Plan
Typical Upper Floor Plan

Land Port of Entry, Columbus, New Mexico/ Ritcher Architects

Design for Ecosystems

Good design mutually benefits human and nonhuman inhabitants.

- *How can the design support the ecological health of its place over time?*
- *How can the design help users become more aware and connected with the project's place and regional ecosystem?*
- *How is the project supporting regional habitat restoration?*



Land Port of Entry, Columbus, New Mexico/ Ritcher Architects

Design for Ecosystems

Narrative: How does the development of the site respond to its ecological context? Consider water, air, plants, and animals at different scales.

Suggested Graphic: Natural systems diagram (on-site, context) and/or Native Landscape Profile (flora, fauna)

Metric: % site area designed to support vegetation

Sample Strategies

- Develop a project-specific indexing framework that assesses attributes of the surrounding pre-development, quantitatively and qualitatively.
- Design landscaping composed of 100 percent native plantings, especially species that attract pollinators. Avoid all decorative turf grass.
- Integrate bird collision deterrent design strategies.
- Create natural nighttime habitat conditions by eliminating unnecessary artificial light and sounds while no humans are present.

ELEVATED INTEGRATION

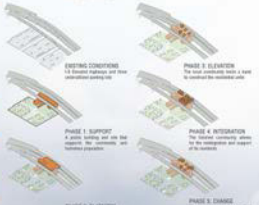
OF PORTLAND'S HOMELESS FAMILIES AND YOUTH

DESIGN FOR INTEGRATION
Addressing Portland's Growing Population Facing Housing Insecurity

Elevated Integration is a direct response to Portland's growing number of families that are facing housing insecurity. The integration of these families into an environment designed to promote the ideals of community, wellness, development, and support offers a solution to assist these families into a more stable lifestyle.

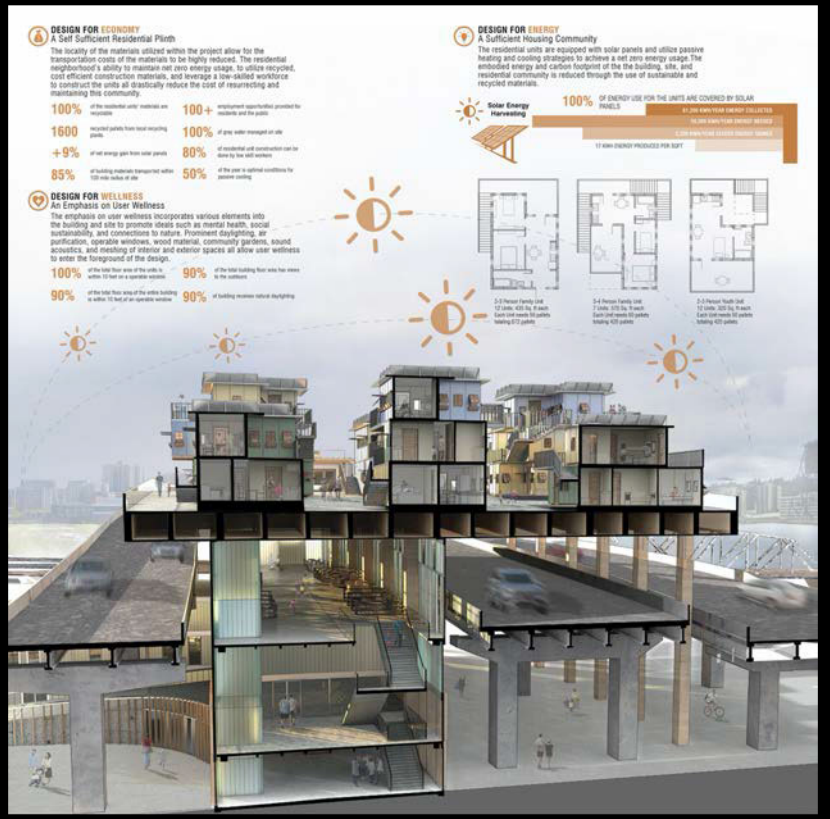
EXISTING CONDITIONS

A supportive approach resides in designing a building capable of producing an income and providing human necessities. The residents have the ability to gain knowledge and skills that allows them to reintegrate back into society.



DESIGN FOR DISCOVERY
Self Discovery Within a Marginalized Population

The building integrates a marginalized population back into a public setting. The residential neighborhood, library, public market, and public site allow for social interaction between populations that would otherwise be divided. This sense of community allows for self discovery, and promotes senses of progression.

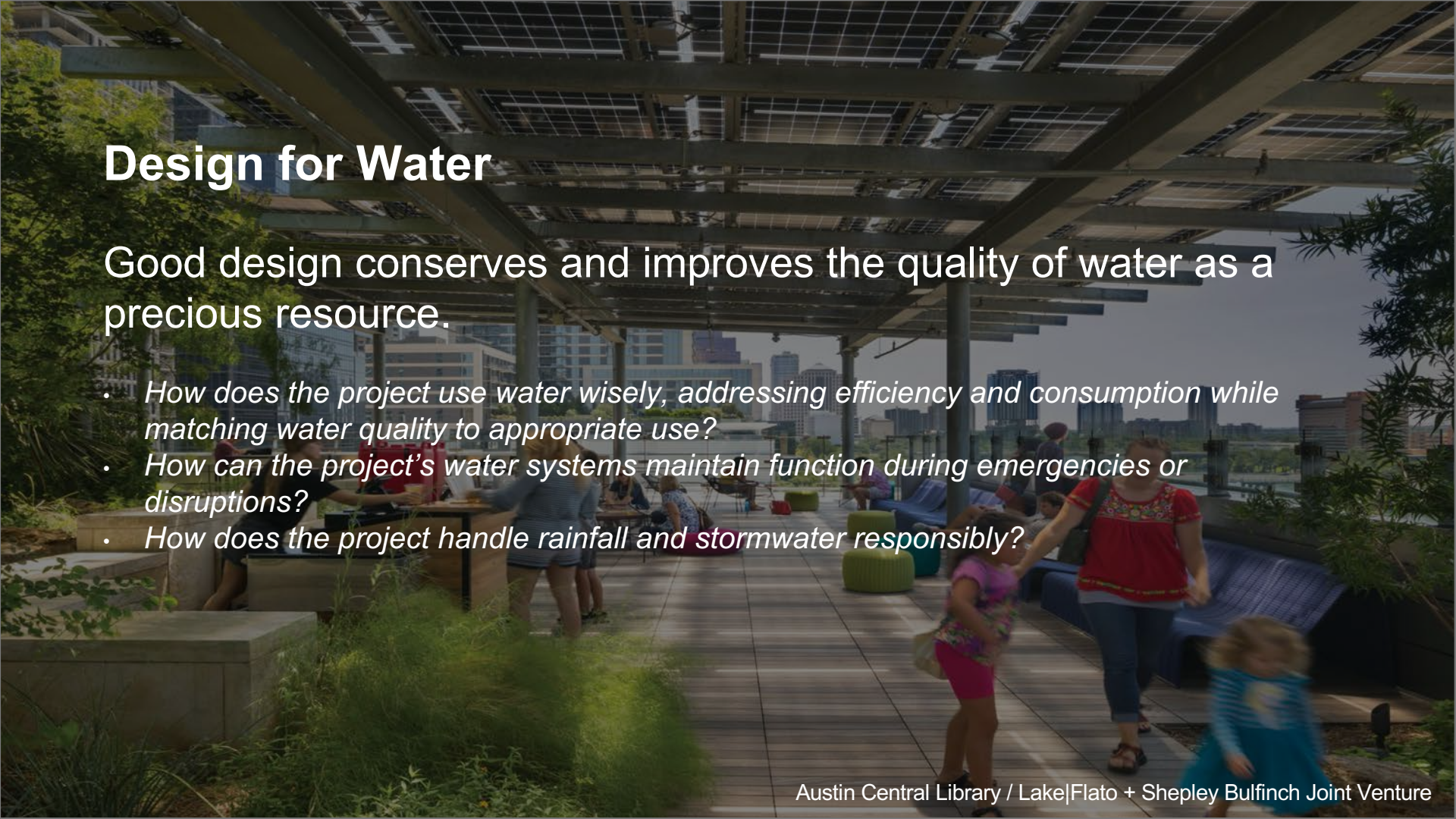


Austin Central Library / LakelFlato + Shepley Bulfinch Joint Venture

Design for Water

Good design conserves and improves the quality of water as a precious resource.

- *How does the project use water wisely, addressing efficiency and consumption while matching water quality to appropriate use?*
- *How can the project's water systems maintain function during emergencies or disruptions?*
- *How does the project handle rainfall and stormwater responsibly?*



Austin Central Library / Lake|Flato + Shepley Bulfinch Joint Venture

Design for Water

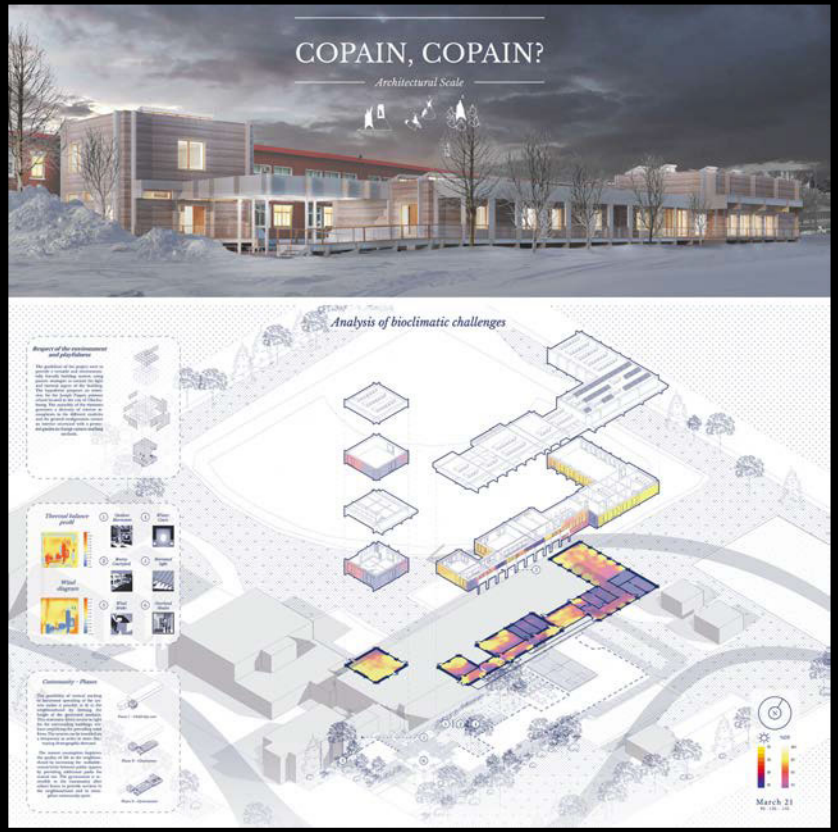
Narrative: How does the design manage stormwater? How does the design conserve potable water? How is the project innovative in the way that it uses and treats water?

Suggested Graphic: Diagram representing how water arrives onto the site, how it is used or reclaimed, and how it leaves the site.

Metric: Percent of storm water that is managed onsite: (2 year, 24-hour event. Use supplied spreadsheet to calculate)

Sample Strategies

- Benchmark indoor water use and compare this number to anticipated use.
- Reduce or eliminate outdoor water use (Irrigation Reduction/Elimination).
- Manage stormwater runoff with the goals of increasing on-site infiltration and improving water quality downstream.
- Capture and reuse rainwater on-site (stretch goal).


COPAIN, COPAIN?
Architectural Scale
Analysis of bioclimatic challenges
Respect of the environment and playfulness
Thermal balance profil
Wind diagram
Community - Phases
March 21

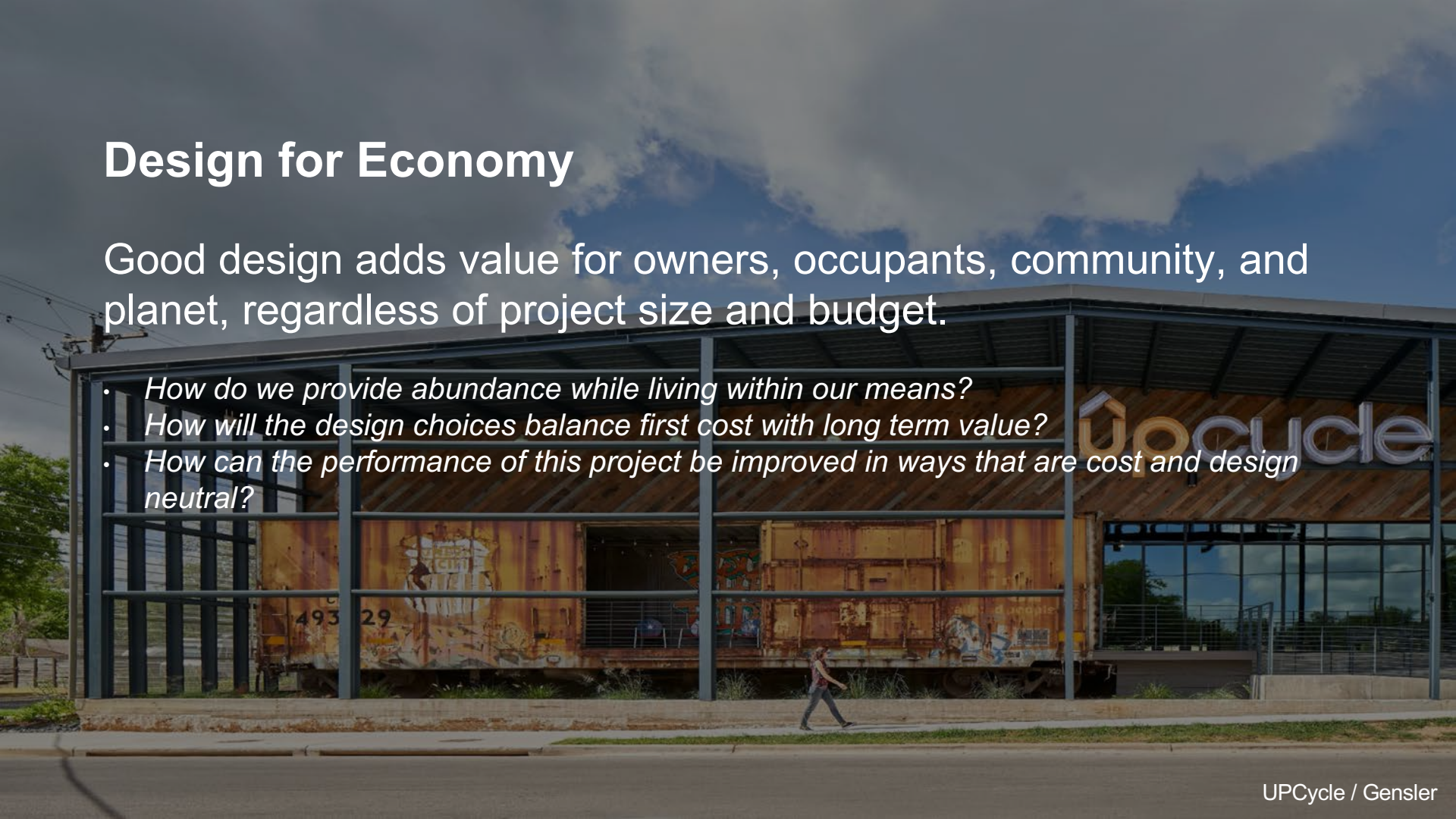

Constructive process
Machining
Implementation
Comparative energy balance
CLT
Straw Panels
LVL
Wall panels
Waffle Roof
Insulation panels
Thermal Balance profil
1 Insulation panels assembly
2 External protection cladding
3 Vegetation pockets composition

UPCycle / Gensler

Design for Economy

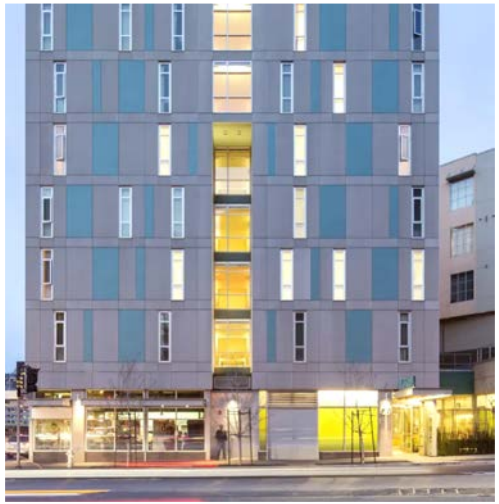
Good design adds value for owners, occupants, community, and planet, regardless of project size and budget.

- *How do we provide abundance while living within our means?*
- *How will the design choices balance first cost with long term value?*
- *How can the performance of this project be improved in ways that are cost and design neutral?*



UPCycle / Gensler

Design for Economy



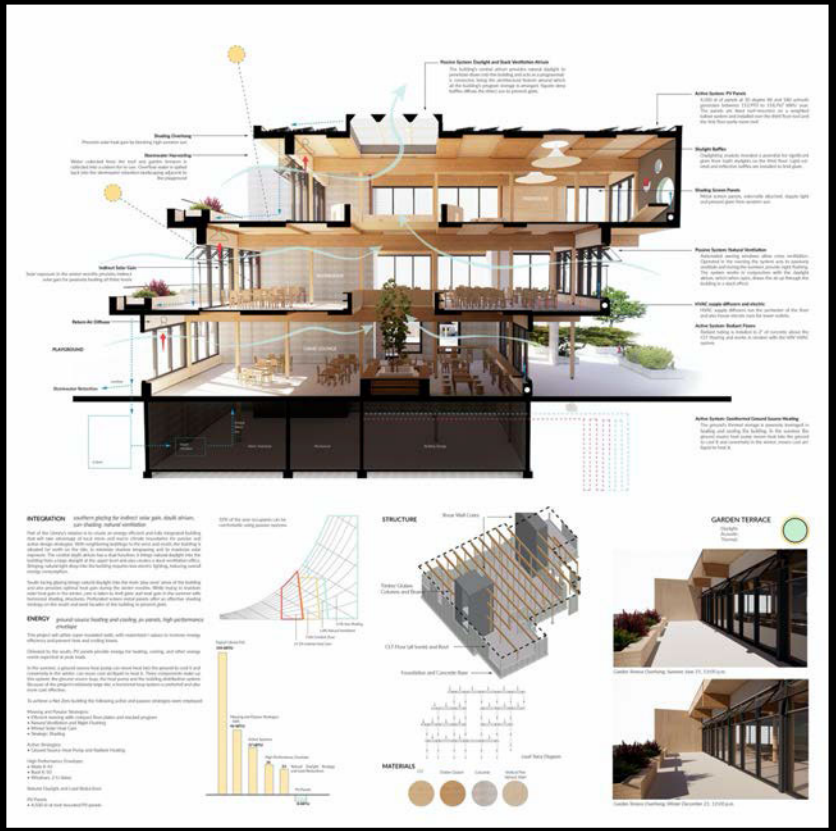
Sample Strategies

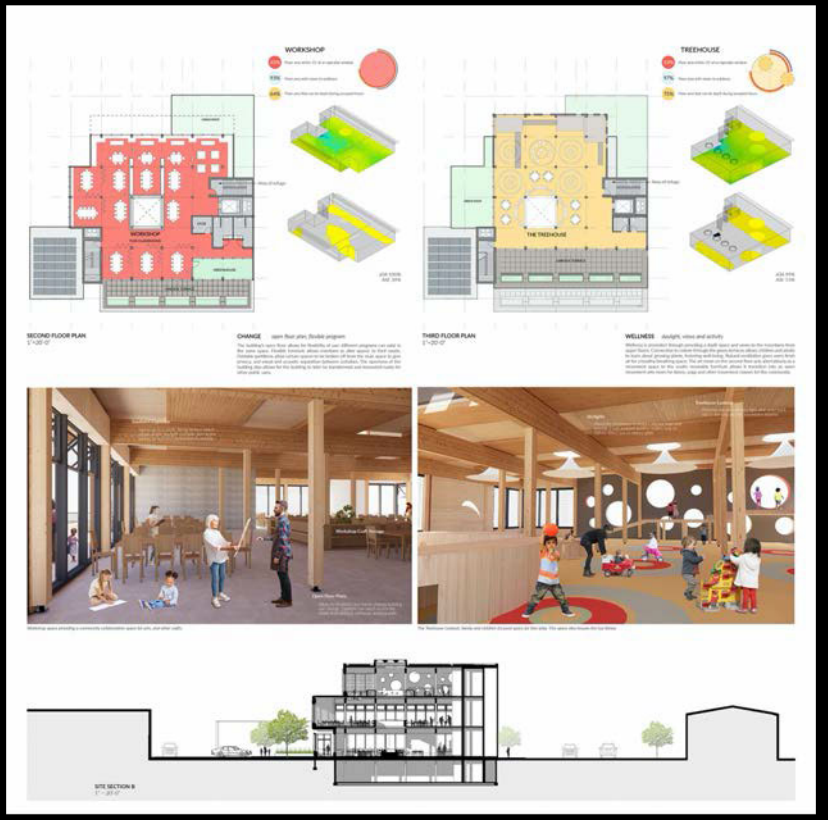
- Reuse an existing building if possible.
- Rightsize the program early and keep the square footage as efficient as possible while managing design for change.
- Edit your palette: Keep the total number of materials to a minimum.

Narrative: What do you think your project might cost to build? How would this construction cost compare with ‘typical’ buildings of the same building type? How does your design represent true economy by providing more value for what it costs?

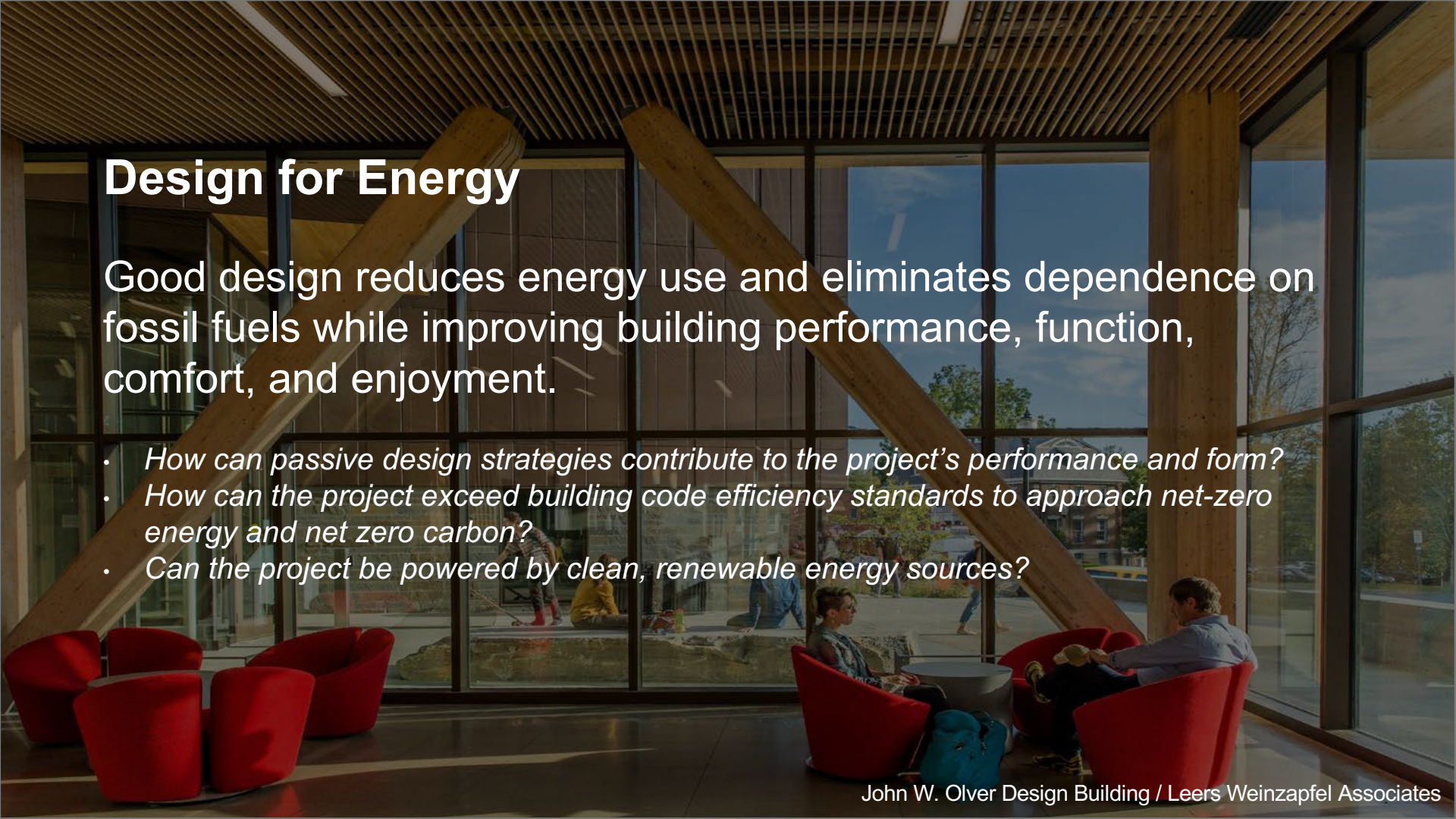
Suggested Graphic: Lifecycle cost or value diagram

Metric: None


Passive System: Daylight and Stack Ventilation Atrium
Active System: PV Panels
Daylight Baffles
Shading Screen Panels
Passive System: Natural Ventilation
Indirect Solar Gain
HVAC supply diffusers and electric
Return Air Diffuser
Active System: Radiant Floors
PLAYGROUND
Stormwater Retention
Active System: Geothermal Ground Source Heating
INTEGRATION southern glazing for indirect solar gain, double atrium, sun shading, natural ventilation
ENERGY ground-source heating and cooling, pv panels, high performance envelope
STRUCTURE
GARDEN TERRACE
MATERIALS


WORKSHOP
TREEHOUSE
SECOND FLOOR PLAN
1" =20'-0"
CHANGE open floor plan, flexible program
THIRD FLOOR PLAN
1" =20'-0"
WELLNESS daylight, views and activity
SITE SECTION B
1" = 20'-0"

John W. Olver Design Building / Leers Weinzapfel Associates



Design for Energy

Good design reduces energy use and eliminates dependence on fossil fuels while improving building performance, function, comfort, and enjoyment.

- *How can passive design strategies contribute to the project's performance and form?*
- *How can the project exceed building code efficiency standards to approach net-zero energy and net zero carbon?*
- *Can the project be powered by clean, renewable energy sources?*

John W. Olver Design Building / Leers Weinzapfel Associates

Design for Energy

Narrative: How does the design seek to decrease the total energy use and carbon footprint of the building? Emphasize strategies to reduce heating and cooling loads, reduce electricity demand, reduce plug loads, and generate on-site carbon free energy.. Describe your approach towards achieving carbon neutrality.

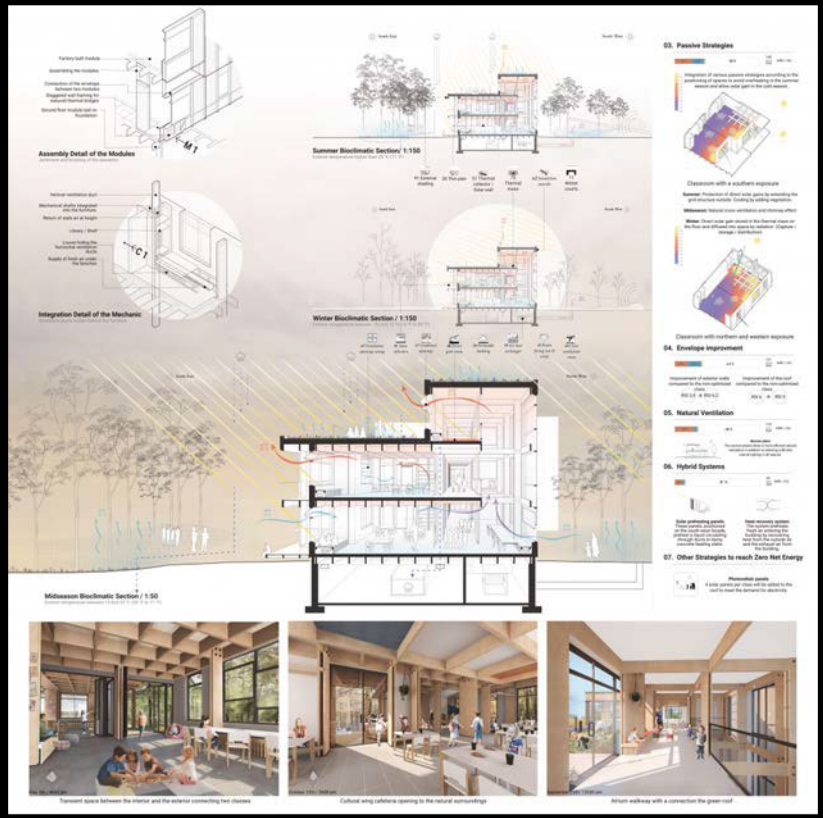
Graphic: Open

Metric: Total energy use intensity (EUI) in kBtu/sf/yr: (build a simple energy model to calculate EUI using DesignBuilder, ArchSim, HoneyBee, eQuest, Sefaira, Autodesk® Insight 360, or another energy modeling program); Energy generation (if any) in kWh/yr: (use PVWatts® Calculator or solar-estimate.org for solar or wind); Net EUI (with renewables if applicable).

Sample Strategies

- Benchmark and set an Energy Use Intensity (EUI) goal.
- Establish design benchmarks and targets for Lighting Power Density (LPD), Window-to-Wall Ratio (WWR), and plug loads.
- Select climate and program-appropriate passive strategies.
- Model for energy performance.
- Understand and work with behavioral patterns (automated v. manual window shades).
- Conduct a post-occupancy evaluation and commission.
- Design solar-ready buildings.


01. First Simulation / Non-optimized class
334 kWh / m2
Energy load for heating
Energy load for cooling
Artificial Lighting and electronic equipment
Energy saving *
02. Reduction in energy demand
Legends
Ground Floor of the Cultural Wing / 1:150
Ground Floor Plan of the Community Wing / 1:150

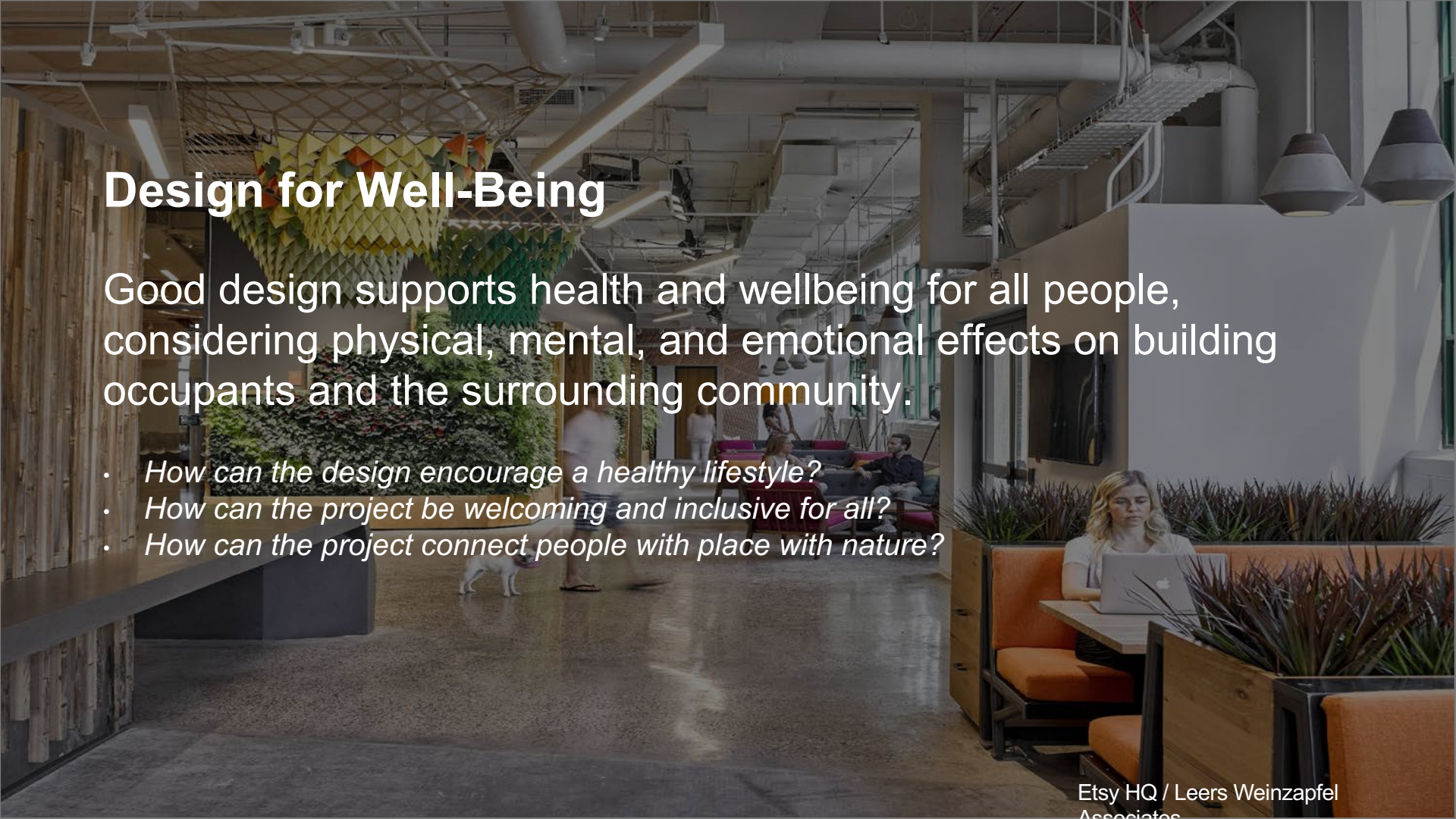

Assembly Detail of the Modules
Integration Detail of the Mechanic
Summer Bioclimatic Section / 1:150
Winter Bioclimatic Section / 1:150
Midseason Bioclimatic Section / 1:50
03. Passive Strategies
Classroom with a southern exposure
Classroom with northern and western exposure
04. Envelope improvement
05. Natural Ventilation
06. Hybrid Systems
07. Other Strategies to reach Zero Net Energy
Transient space between the interior and the exterior connecting two classes
Cultural wing cafeteria opening to the natural surroundings
Atrium walkway with a connection the green roof

Etsy HQ / Leers Weinzapfel Associates

Design for Well-Being

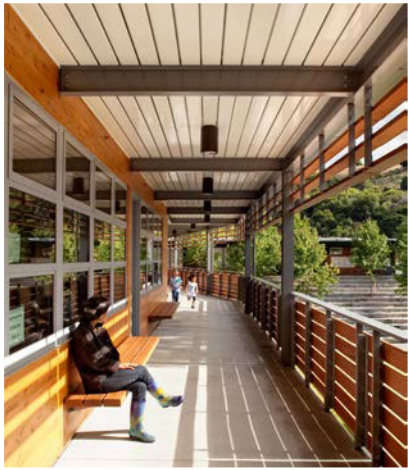
Good design supports health and wellbeing for all people, considering physical, mental, and emotional effects on building occupants and the surrounding community.

- *How can the design encourage a healthy lifestyle?*
- *How can the project be welcoming and inclusive for all?*
- *How can the project connect people with place with nature?*



Etsy HQ / Leers Weinzapfel Associates

Design for Well-Being



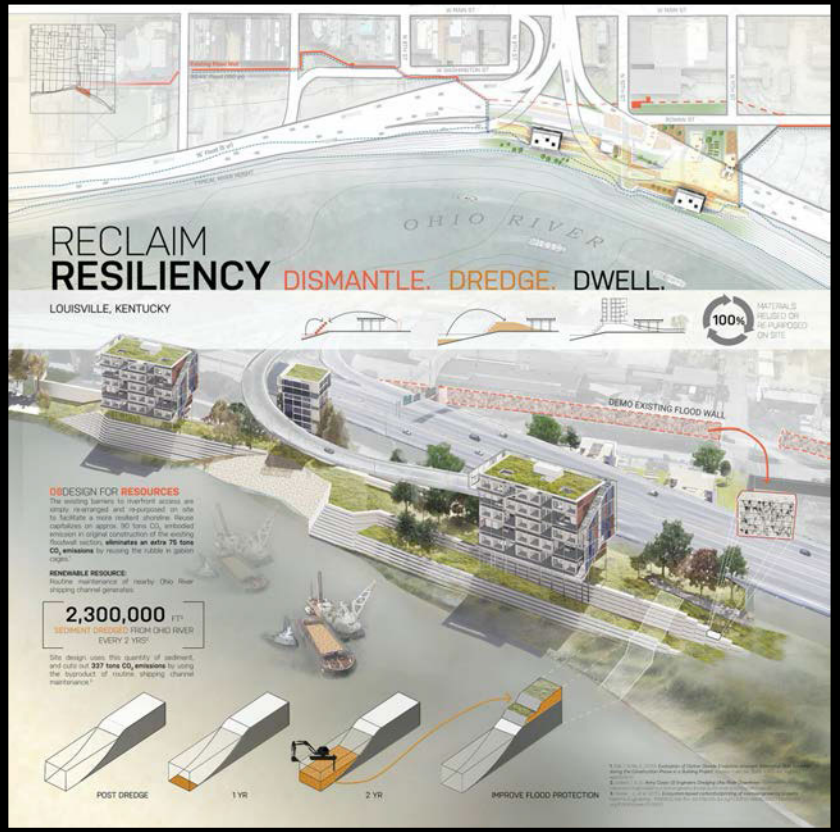
Narrative: Discuss design strategies for optimizing daylight, indoor air quality, connections to the outdoors, and thermal, visual, and acoustical comfort.

Suggested Graphic: Model photos, drawings or diagrams of daylight and ventilation strategies; test models.

Metric: Percent of the building that can be daylit (only) during occupied hours; Percent of floor area with views to the outdoors; Percent of floor area within 15 ft. of an operable window. Daylight performance using the following concepts: Daylight Availability, or Annual Sunlight Exposure along with Spatial Daylight Autonomy: % of regularly occupied area achieving at least 300 lux at least 50% of the annual occupied hours.

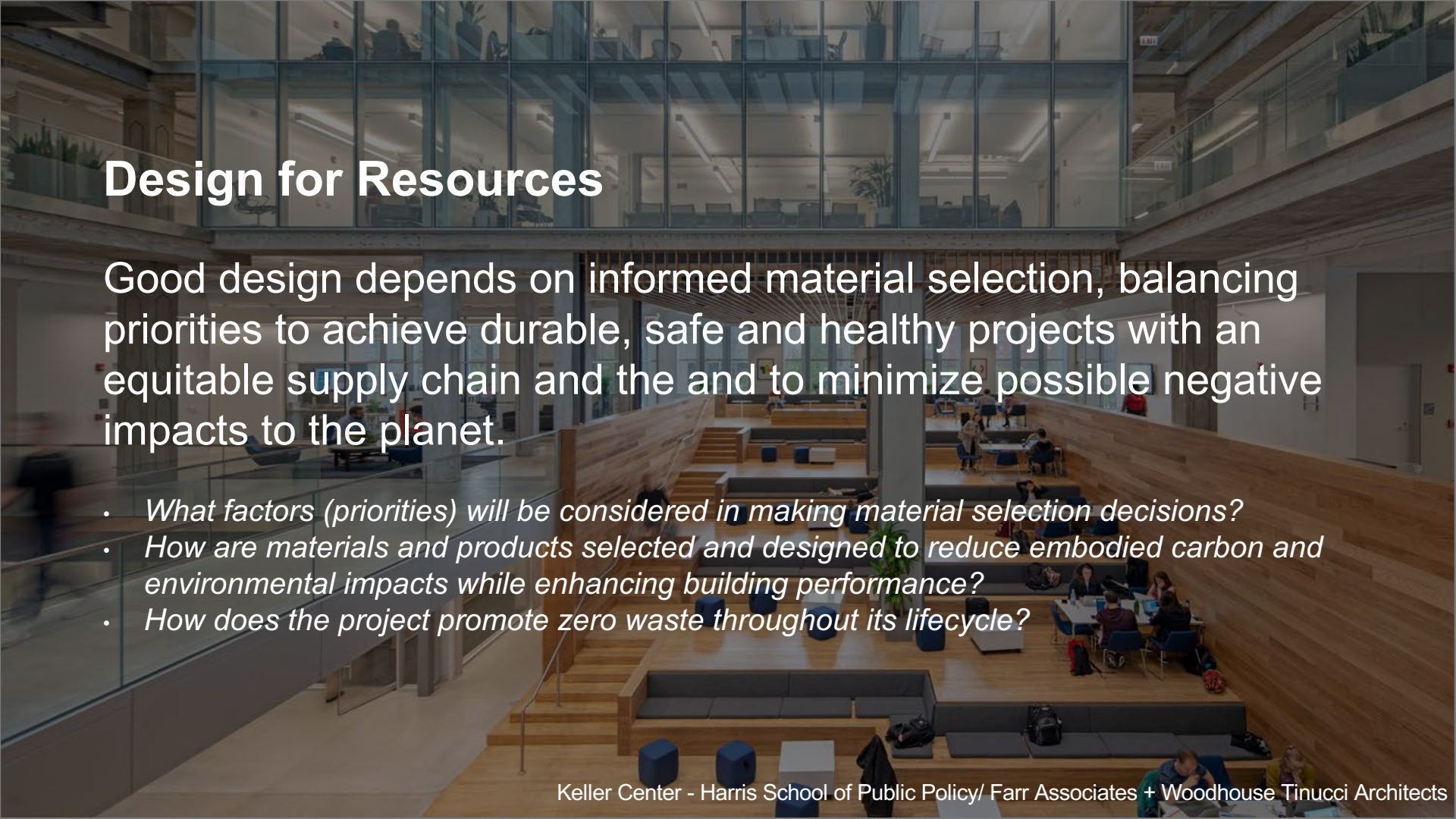
Sample Strategies

- Ensure that all occupied spaces have access to an operable window.
- Give all occupants individual control over their immediate environment.
- Allow occupants to experience natural, biophilic elements through a variety of senses.
- Develop acoustical goals and a plan for achieving them.


RECLAIM
RESILIENCY DISMANTLE. DREDGE. DWELL.
LOUISVILLE, KENTUCKY
OHIO RIVER
100%
MATERIALS REUSED OR RE-PURPOSED ON SITE
DEMO EXISTING FLOOD WALL
09DESIGN FOR RESOURCES
The existing barriers to riverfront access are simply re-arranged and re-purposed on site to facilitate a more resilient shoreline. Reuse capitalizes on approx. 90 tons CO_2 embodied emission in original construction of the existing floodwall section, eliminates an extra 75 tons CO_2 emissions by reusing the rubble in gabion cages.
RENEWABLE RESOURCE:
Routine maintenance of nearby Ohio River shipping channel generates:
2,300,000 FT³
SEDIMENT DREDGED FROM OHIO RIVER EVERY 2 YRS
Site design uses this quantity of sediment, and cuts out 337 tons CO_2 emissions by using the byproduct of routine shipping channel maintenance.
POST DREDGE
1 YR
2 YR
IMPROVE FLOOD PROTECTION


ACTIVATE RECLAIMED SPACE
INITIAL PROJECT
09DESIGN FOR CHANGE
River sediment is a replenishing material that can allow the existing flood wall to be phased out in segments over time. Possibly by 2030, 2 miles of shoreline adjacent to downtown and West Louisville can be fortified by a public, vegetated wall that helps mitigate flood activity with bios-walles and vegetation while also protecting against the threat of a rising river.
RESIDENTIAL BUILDINGS
Each building houses 24 units intended for mixed income levels. Sited adjacent to both the central business district and subsidized housing units, the objective is for diversity this resident to across the social and economic spectrum and foster a healthy community.
MARKET STALLS
Dedicated open-air spaces for farmer's markets, craft fairs, and festivals brings healthy food options and community events closer to Louisville's to previously marginalized neighborhoods.
DINING/SWAP SHOP
This commercial core offers a swap shop for people to leave items that others may find uses for, a Co-op that sells produce and goods made from the on-site community garden, and also hosts farm-to-table dining options.
EXISTING
100 YR FLOOD EXISTING
100 YR FLOOD PROPOSED
04DESIGN FOR WATER
Native and drought resistant flora on site require no irrigation, and yet the site is capable of handling excessive runoff by shedding water into bioswales that drain water into the ground.
Elevated buildings and the engineered dike offer protection from floods up to 50 feet, while a rainwater cistern collects water to be used in the buildings for non-potable uses.
45' FLOOD (500 YR)
30' FLOOD (50 YR)
15' FLOOD (5 YR)
COLLECTED WATER FOR NON-POTABLE USES ON SITE
10DESIGN FOR DISCOVERY
Weaving together multi-faceted solutions to combat the issue of flooding, highway pollution, and social and economic challenges near the site involved thorough investigation of existing autonomous powers and procedures that could be leveraged to find solutions.
02DESIGN FOR ECOLOGY
88% of site area designed to support natural vegetation for animal habitats and flood mitigation, and 100% of the area is intended for native and climate-appropriate plants. Green roofs on each building also provide habitats for birds, insects, and natural pollinators.

Keller Center - Harris School of Public Policy/ Farr Associates + Woodhouse Tinucci Architects



Design for Resources

Good design depends on informed material selection, balancing priorities to achieve durable, safe and healthy projects with an equitable supply chain and the and to minimize possible negative impacts to the planet.

- *What factors (priorities) will be considered in making material selection decisions?*
- *How are materials and products selected and designed to reduce embodied carbon and environmental impacts while enhancing building performance?*
- *How does the project promote zero waste throughout its lifecycle?*

Keller Center - Harris School of Public Policy/ Farr Associates + Woodhouse Tinucci Architects

Design for Resources

Narrative: Describe the project's construction, material selection criteria, considerations and constraints. What efforts were made to reduce the amount of material used and waste and the environmental impact of materials over their lifetime? Discuss specific materials used.

Suggested Graphic: Wall section of the building envelope design and either a hygro-thermal analysis or life cycle assessment.

Metric: Estimated carbon emissions associated with building construction (lbs CO2/sf, using The Construction Carbon Calculator, Athena Impact Estimator for Buildings, Tally®, or other)

Sample Strategies

- Choose one or a few chemicals of concern, such as vinyl, to avoid in the project's materials.
- Choose building products that are known to be low carbon, such as wood and other natural materials.
- Specify concrete mixes with high percentages of supplementary cementitious materials (SCM) in order to minimize high-embodied carbon Portland Cement.
- Use only FSC-certified lumber

Romberg Center for Ecology and Resilience

High Performance Historic Renovation

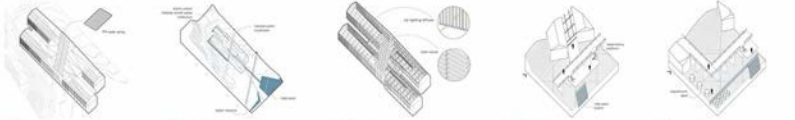
Existing Condition

Site Analysis - Sea Level Rise, Access, Vegetation

Masterplan Proposal

Historial Timeline

COTE Top Ten



Design for Economy
The design incorporates the use of renewable energy and reusable construction materials to reduce costs.

Design for Ecology
Integration with the site landscape allows the natural flow of water to be treated naturally by the local vegetation.

Design for Wellness
It is designed for a well-lit spaces in various spatial conditions, from single to double-height space and all embedded in the landscape.

Design for Integration
The design integrates multiple scales to form a cohesive site and link site and buildings as well as past and present.

Design for Discovery
Design with an alternation of program type allows for an observation possibility without interference.

Design for Energy
Other than the renewable energy, the design introduces natural ventilation and thermal insulation technique to reduce energy.

Design for Water
The outer edge is designed to be able to cover a ten feet sea level rise while at the same time, providing an experiment pool.

Design for Community
It has a central gathering space, surrounded by programs that related to both local and public users, i.e., laboratory and classroom.

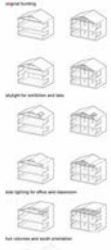
Design for Change
The high performative historical preservation helps to provides changes for an interdisciplinary environment.

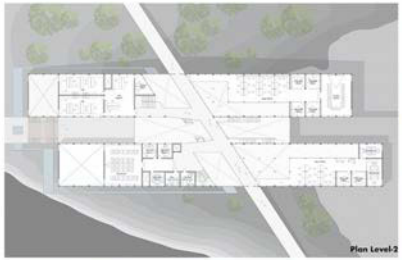
Design for Resources
The site has a lot of resources, like water, energy, construction material, and vegetation preservation.

Spatial Organization

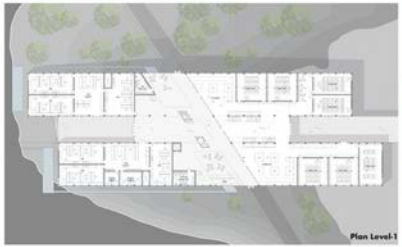
Formal Development

- *Design for Integration*
- *Design for Wellness*





Plan Level-2

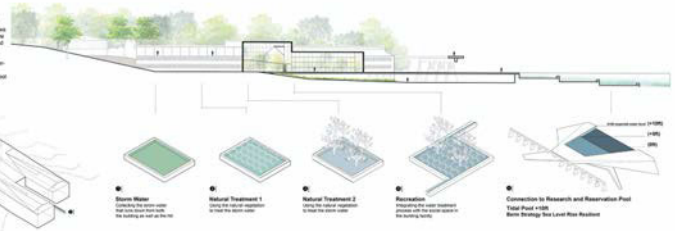


Plan Level-1

Water Management

- *Design for Integration*
- *Design for Resources*
- *Design for Ecology*
- *Design for Water*

The purpose of the design of the sea wall and tidal pool is to account for a possible ten feet sea level rise. The wall is raised with a slope into the site to decrease the perception of boundary and encourage a waterfront activity while allowing parts of the ocean to penetrate the site for the dual purpose of saltwater experiment and observation. The slope will collect the fresh water coming down from the hill into a recreational pool while treating them with the natural method.



Storm Water
Collecting the storm water that runs down from both the building as well as the hill

Natural Treatment 1
Using the natural vegetation to treat the storm water

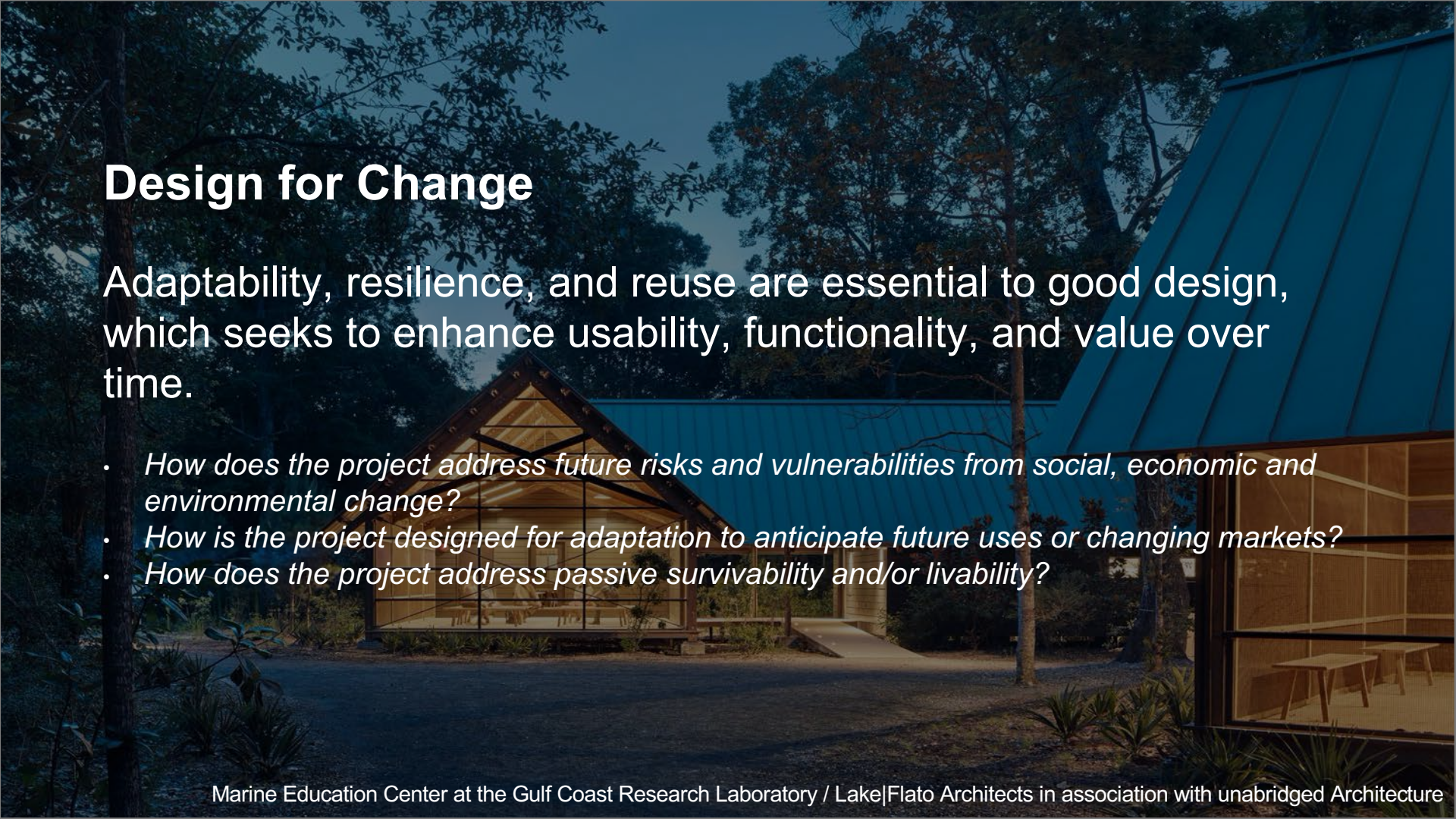
Natural Treatment 2
Using the natural vegetation to treat the storm water

Recreation
Integrating the water treatment process with the social space in the building facility

Connection to Research and Reservation Pool

Total Pool +10ft
Item Strategy Sea Level Rise Resilient

Marine Education Center at the Gulf Coast Research Laboratory / Lake|Flato Architects in association with unabridged Architecture



Design for Change

Adaptability, resilience, and reuse are essential to good design, which seeks to enhance usability, functionality, and value over time.

- *How does the project address future risks and vulnerabilities from social, economic and environmental change?*
- *How is the project designed for adaptation to anticipate future uses or changing markets?*
- *How does the project address passive survivability and/or livability?*

Marine Education Center at the Gulf Coast Research Laboratory / Lake|Flato Architects in association with unabridged Architecture

Design for Change

Narrative: Describe how the design promotes long-term flexibility, re-use, adaptability, and resilience.

Suggested Graphic: Specific hazard and climate analysis for project.

Metric: None

Sample Strategies

- Assess the probability and type of hazards over the service life of the building and evaluate the consequences of building at a specific site.
- Determine how projects can support immediate recovery in the first days and weeks of crisis and facilitate long-term return to normalcy.
- Talk to clients about their performance goals for the project during a disaster event—continuity of operations, community resource, quick recovery, or temporary relocation?

UP-[LIFT] TECH TOWER

"The city of Charlotte ranks dead last (50th out of 50) among America's largest cities in upward mobility. This means that for a child born in poverty in Charlotte, it is harder to get out of poverty than any other large city in the United States."
– FORTUNE

Charlotte is largely known as the 2nd-largest banking city and is rapidly establishing the foundations of the next "Silicon Valley" being 2nd largest in tech-industry growth across the country.

UP: toward a higher place or position. LIFT: raise to a higher position or level.

[Up]-LIFT will be an urban community tower that responds to changes in the local industry by incorporating a major factor limiting social mobility – access to education. The basic growth of a tech-hub requires the foundation of educational services to help incubate start-ups. Located in the heart of uptown, the tower will contain program to provide training in fields related to technology and spaces for tech businesses to take a foothold locally.

The tower will be designed in such a way to create a direct flow from training to working in the industry by providing on site connections between low income students & companies. The idea is that mixing academic research & industry practices will foster next-generation technologies of the future. With start-ups related to eco-technologies and environmental concerns becoming more prevalent, the tower will accommodate these positive shifts in ideology by allowing the building and its envelope to become a research & development playground for prototyping & testing. A public laboratory, so to speak, for displaying innovative concepts & solutions.

PROGRAM

PRIMARY

University + Eco Start-up Offices

SECONDARY

Museum, Student Union, Retail, & skygarden

FORMAL MOVES

STEP 1: BOX

STEP 2: ROTATE

STEP 3: SHIFT

STEP 4: ADD VOLUME

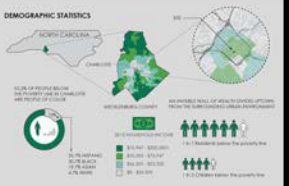
STEP 5: SUBTRACT

STEP 6: SKIN

SITE CONTEXT

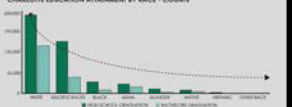
ADDRESS: 2105 S Brevard St, Charlotte, NC 28202

DEMOGRAPHIC STATISTICS



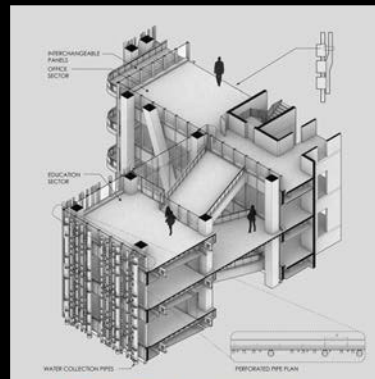
5 FACTORS THAT INFLUENCE SOCIAL MOBILITY: INCOME, FAMILY, EDUCATION, RACE, & SOCIAL CAPITAL

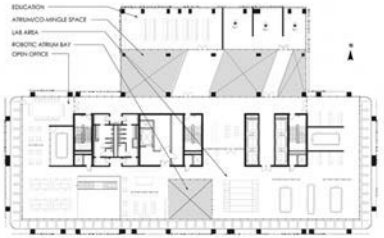
CHARLOTTE EDUCATION ATTAINMENT BY RACE - COUNTS



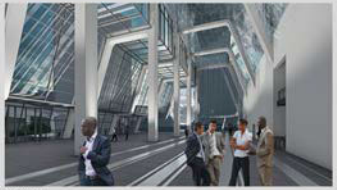
TECH JOB INDEX BY SIZE

BRINGING PEOPLE OF COLOR TO A HIGHER SOCIO-ECONOMIC LEVEL



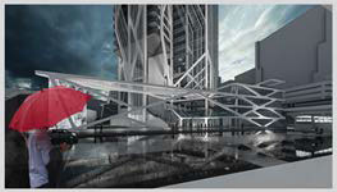


TYPICAL OFFICE FLOOR PLAN



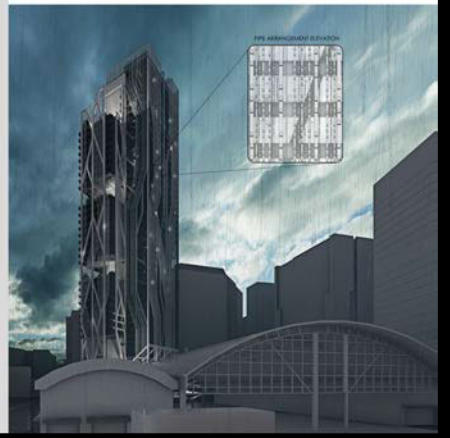
LOBBY VIEW

Design Intent: Rainy days feature water collected being transferred across the main office lobby - a visual celebration of collection.



EXTERIOR VIEW

Design Intent: To provide a visual entry that pulls people coming from the Charlotte Transportation Center, placing the museum & student union at the podium level.



Environmental Nature Center and Preschool / LPA, Inc.

Design for Discovery

Every project presents a unique opportunity to apply lessons learned from previous projects, and to gather information to refine the design process.

- *How can the design process foster a long-term relationship among between designers, users and operators to ensure design intentions are realized and the building project performance can improve over time?*
- *How are performance data and experiential stories shared, even if the findings fall short of the vision?*
- *What strategies promote a sense of discovery and delight?*

Environmental Nature Center and Preschool / LPA, Inc.

Design for Discovery

Narrative: What steps would you take to ensure that the building performs the way that it is designed? What lessons have you learned from this project that you will apply to the next project? What lessons have you learned from past projects that were applied to this project?

Suggested Graphic: Open

Metric: None

Sample Strategies

- Ask for utility bills and calculate actual measured EUI.
- Call the owner and ask for feedback (preferably every other month after occupancy and at least once after one year).
- Share mistakes and the strategies for fixing them with … everyone. (This could be the project team, the office, or the profession at the local, regional, or national level—or even internationally, if significant.)

INTEGRATED SYSTEMS

The floating community relies mostly on natural ventilation through it's open design that allows for cross ventilation in plan and section. There will be fans in sleeping areas to provide additional comfort. The ventilation for zoceos below the waterline rely on opeo to above rearways as well as small active ventilation units that run on solar power.

East Monsoon Wind November to April

West Monsoon Wind May to October

Cross Ventilation Plan

Floating house sectional perspective with ventilation and shading time lapse diagram

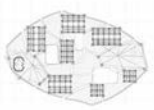
This rendering depicts the relationship between bedrooms, ground floor living areas, and hanging out spaces. The thin hydrophobic meshes protect residents from mosquitoes and light rains.

Standing at the second floor of the housing boat looking into the adjacent mangrove nursery. The solar panels above the plants provides not only enough electricity for the island residents but also shades for young mangroves to grow.

A view looking from the community boat. This rendering depicts the new harbor boat parking and the rainwater collection in the distance.

IMPLEMENTATION TIMELINE

Housing floor plan



Nursery floor plan

Vegetation pathway

Based on Food and Agriculture Organization of the United Nations' research, Maldive average precipitation is about 2 meter per year. Therefore, 14 of the rainwater pavilion at the harbor side will collect at least 3094 m^3 rainwater per year. The rainwater pavilion can serve 250 inhabitant 3,094,000 bottles of pure water yearly.

3,094,000 bottled of rainwater/yr

Market and water distribution center

The rainwater pavilion

Rainwater that is collected in the harbor will be transferred to the market bottling spot f or island residents to use.

Solar panels as shade for mangroves:

The average Maldivian uses 0.087kW per day. Solar energy collected from 1 nursery is enough to supply energy to the 3 adjacent extended family housing pods that contains 10 people each. Exceso power will be stored in batteries found in the hulls of the floating community. The perforated panels are strategically integrated above the younger plants in the nursery that require a form of shading to aid growth. These panels provide energy to anaerobic system pumps and the island.

Electricity cable running through pathway to the battery storage in the floating house

0 Months

Mangrove propagules are planted into pots with shades.

2-4 Months

After growing roots for the first two months, mangrove leaves are forming and tolerant enough for full sunlight.

1-2 Years

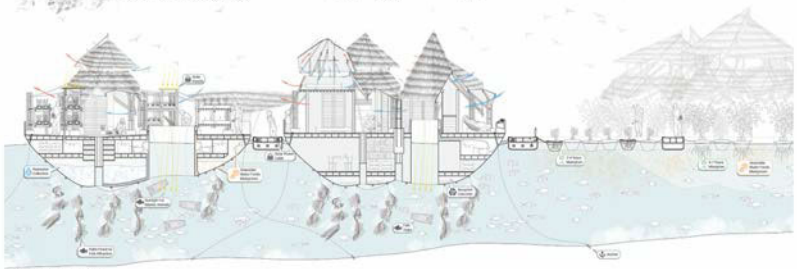
At this point, the first prop roots start to form and the mangrove should be transferred to a larger container to promote growth.

2-4 years

The mangrove will begin to float with the help of coconut coir and fiberglass. Nutrient rich water from anaerobic system will be pumped into these floats to both lighten the stress of constant salt water and aid in growth.

4-7 years

Mangrove will be transplanted to the harbor so that its roots can anchor into the ground. Eventually, the mangroves will begin to protect the shoreline. It is also the home for crab, shrimp and small fishes.

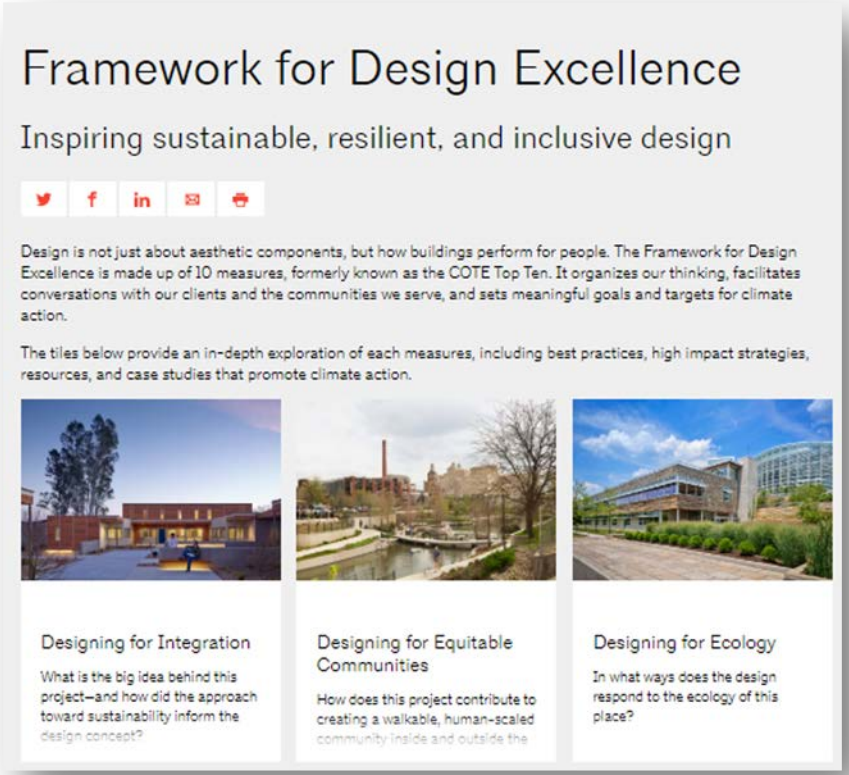


Section of floating nursery and house

How to use the Framework

To begin integrating the ten values of the Framework into your work, AIA National provides an online resource that goes into detail for each principle.

> aia.org/design-excellence



Studio Guide & Resources

The *Studio Guide* offers supplemental resources to faculty and students who are pursuing the AIA COTE Top Ten for Students Competition through a design studio curriculum.

It suggests discussion questions, readings, and exercises to spur design thinking and analysis.

www.acsa-arch.org/competitions/2021-cote-competition/studio-guide/

THE FRAMEWORK FOR DESIGN EXCELLENCE: Ten Questions

SUGGESTED SEQUENCE FOR DESIGN STUDIOS

- Theory of Sustainable Design
- The Site – People, Place, Environmental Justice, and Ecology
- The Project – Program, Precedent and Getting Started
- Analysis Tools and Representation

CRITERIA AND REVIEW CHECKLIST

REGISTRATION / SUBMITTAL STEPS

How and When to Enter AIA COTE Top 10 for Students Competition

Where?

ACSA Manages the AIA COTE Top Ten for Students Competition in their Competitions webpage & www.acsa-arch.org/competitions/2021-cote-competition/program/

When?

Registration is required by January 13, 2020, but can be changed, edited and amended until a student begins their final submission. **Students may submit entries from June through January.**

How?

Before submittals **faculty must register students** and create teams via the registration link.

Timeline

June	Registrations/Competition opens
January	Registrations/Submittals due
March	Jury convenes
April	Winners announced
May/June	AIA National Conference

PAST WINNERS ILLUSTRATION ACKNOWLEDGEMENTS:

*A**NANNYA DAS & CONNOR MOUGIN,*** BAZAAR 324

ARCHITERRA, GATEWAY CENTER - SUNY-ESF COLLEGE OF ENVIRONMENTAL SCIENCE & FORESTRY

AUDREY ROCHON, ANTON ZAKHAROV, & MELANIE NIGET, COPAIN, COPAIN?

BEKIM SEJDIU & DEVIN WADDELL, UP-LIFT TECHNOLOGY TOWER

CERA YEO & JINGYI LUO. WATERLINE

DAVID BAKER ARCHITECTS, TASSAFARONGA VILLAGE

GEORGE SORBARA & HUNTER HARWELL, ELEVATED INTEGRATION

KIERANTIMBERLAKE, SPECIAL NO. 9 HOUSE

LEDDY MAYTUM STACY ARCHITECTS, SWEETWATER SPECTRUM COMMUNITY

LEDDY MAYTUM STACY ARCHITECTS, RENE CAZENAVE APARTMENTS

MARIE-HÉLÈNE CLICHÉ, MICHAEL COMTOIS, & ÉTIENNE VIGNEAU, MATRIOCHKAS

MITHUN, CHATHAM UNIVERSITY EDEN HALL CAMPUS

NICOLE ANDERSSON, LIBRARY OF PLAY

PITCHAYUT KINGKAEW, QIHUI BAO, & SHUANG YAN, ROMBERG CENTER FOR ECOLOGY AND RESILIENCE

RYAN BING & JOE SCHERER, RECLAIM RESILIENCY – DISMANTLE. DREDGE. DWELL.

SEAN ANDERSON, TOBIAS JIMENEZ, & HALEY LADENBURG, WALLINGFORD W2E

SOPHIA BULLOCK, DRAKE CECIL, & ALEX KING, BIO TOWER A GREEN MEDICAL RESEARCH HUB

THE DESIGN ALLIANCE ARCHITECTS, CENTER FOR SUSTAINABLE LANDSCAPES

VMDO ARCHITECTS, DISCOVERY ELEMENTARY SCHOOL