SYLLABUS

EASTIE LONGHOUSE: Community Supported Agriculture and Food Residency

TEACHING TEAM
Associate Professor J. Yolande Daniels
Professor Andrew Scott
Associate Professor of Practice, J Jih
Lecturer, Adam Modesitt

STRUCTURES INSTRUCTORS
Associate Professor Caitlin T Mueller (Coordinator)
Eduardo Gascon Alvarez
Kiley Anne Feickert

TA TEAM
Caroline Amstutz, M.Arch 24
Courage Dzidula Kpodo, M.Arch 25
Lauren Gideonse, M.Arch 23
Bryan Hon Ting Wong, SMArchS 24

COURSE DESCRIPTION

Core 3 is the concluding studio of the MArch1 core program at MIT. The studio offers a semester's long building project and is integrated with Building Technology 4.463.

In Fall 2023, the Core 3 studio gives students the chance to explore and test the development of an architectural design proposal with an integrated understanding of the structural, spatial, material, and environmental performance of a building in response to local and regional site and climatic conditions, and issues of food sovereignty.

The Core 3 studios will use the materials of architecture to consider food and justice through the design of collective spaces for food production and exchange, while considering food sovereignty and food heritage in the design of the *Eastie Longhouse: A Community Supported Agriculture and Food Residency*.

The Longhouse program envisions a food system model in which local community members to grow and share food, while building practices of care and stewardship for people and the earth through eco-conscious practices of cultivation, conservation, reuse, and regeneration, etc., in which the goal is zero waste. In this model spaces of production can also serve for community gathering and care.

Students will be encouraged to consider the architecture of food which covers a range of scales from infrastructure to building to food itself. We will explore a range of physical food storage structures including warehouses, greenhouses, markets, granaries, pantries, kitchens, containers etc.,

SCHEDULE

MODULE I

WK 1	Tu Sept 05	- Registration
	Th Sept 07	- Module 1 Introduction + Handout 1: Bento (Food Container/Foodways)
	F Sept 08	- Class Introduction + Desk Crits
WK 2	Tu Sept 12	- Workshop 1: Tracy Chang/PAGU, Food Equity
	Th Sept 14	- Studio Roundtable; Desk Crits
	F Sept 15	- Desk Crits; TA Workshop: On Model + Video making
WK 3	Tu Sept 19	- Desk Crits
	Th Sept 21	- REVIEW 1 + Picnic; Handout 2: Pantry (Site + Precedent Systems Analysis)
	F Sept 22 -	- MIT HOLIDAY
WK 4	Tu Sept 26	- East Boston Site Visit; Workshop 2: Eastie Farm

	Th Sept 28	- Desk crits
	F Sept 29	- Workshop 3: Grace Farm + Assawaga Farm
WK 5	Tu Oct 03	- Desk crits *(YD out)*
	Th Oct 05	- REVIEW 2; Handout 3: Market + Building Concept *(YD via zoom)*
	F Oct 06	- Studio Roundtable; TA Workshop: On Section Models *(YD via zoom)*
WK 6	Tu Oct 10	- MIT HOLIDAY
	Th Oct 12	- Desk Crits *(NOMA Conference)*
	F Oct 13	- PIN-UP: Market + Building Concept *(NOMA Conference)*
WK 7	Tu Oct 17	- Desk Crits
	Th Oct 19	- *MIT/Courageous Conversations*
	F Oct 20	- Desk Crits

MODULE II

WK 8	Tu Oct 24	- MIDTERM/ REVIEW 3 with External Guests + Begin Building + Environmental System Design Development
	Th Oct 26	- Workshop 4: Urban Modeling Interface/UMI Environmental Analysis
	F Oct 27	- Desk Crits
WK 9	Tu Oct 31	- Desk Crits
	Th Nov 02	- TA Workshop/TA Session C: On Representation
	F Nov 03	- PIN-UP + Begin Structural Design Development
WK 10	Tu Nov 07	- Desk Crits
	Th Nov 09	- Desk Crits; Studio Roundtable
	F Nov 10	- HOLIDAY | Veteran's Day
WK 11	Tu Nov 14	- Desk Crits
	Th Nov 16	- REVIEW 4 with External Guests + Begin Detail Design Development
	F Nov 17	- Desk Crits;
WK 12	Tu Nov 21	- Desk Crits *(AS out)*
	Th Nov 23	- HOLIDAY | Thanksgiving
	F Nov 24	- MIT HOLIDAY
WK 13	Tu Nov 28	- Desk Crits
	Th Nov 30	- PIN-UP (Final Review Mock-up/Final Design Development)
	F Dec 01	- Desk Crits; Studio Roundtable
WK 14	Tu Dec 05	- Desk Crits
	Th Dec 07	- TA Workshop/TA Session D: On Exhibitions
	F Dec 08	- Desk Crits
WK 15	Tu Dec 12	- LAST CLASS
	W Dec 13	- FINAL REVIEW with External Guests
	(Date TBD)	- Semester's Project Archived

FOOD ECOLOGIES

Food is a cultural production and an integral part of social rituals which vary and overlap across cultures. In the pursuit of the building design, the studio will explore food rituals and consumption and we will strive for an awareness of the political aspects of food systems that produce the unequal production, distribution and access that result in food inequities.

"Where, how, and what food is sold, the rise and locations of fast-food chains, the supermarket chains ' abandonment of inner-city and low-income rural communities, the correlation of food deserts with poor food choices, and the conditions of workers in the food market and restaurant industries have all become key food justice concerns." Robert Gottlieb and Anupama Joshi, Food Justice

Food security requires the creation of a sustainable food system that is based on ecological sustainability, health and community, and racial, economic, and environmental justice. As defined by the United Nations Food and Agriculture Organization in 2009, *food security* is achieved "…when all people at all times have physical, social and economic access to sufficient, safe and nutritious food to meet dietary needs and food preferences for an active and healthy life."

Food security requires supply and access which are aspects of environmental justice. The environmental justice movement has revealed connections between racism and urban spaces. Both food systems and human health are impacted by climate, socio-economic disparities, political divisions, and trade. *Food justice* extends the analysis of environments to reveal connections between food systems, racism, and urban spaces. *Food systems* refer to the overlapping processes that connect the network of food production, processing, consumption, disposal, and regeneration.

Local + Slow + Indigenous

Reframing the issue of *food security*, the Declaration of Nyéleni, in Mali in 2007, highlighted the social relationship of food in the definition of *food sovereignty* as the right to "healthy and culturally appropriate food through ecologically sound and culturally appropriate methods, and their right to define their own food and agricultural systems."

The systems of industrial food production (including fast food) are multi-billion-dollar growth industries that have reshaped economies, production, food, and cultural practices from farming to dining, and animal, human, and planetary health.

Sustainable food production does not harm humans or communities or the earth; facilitates greater inclusivity and access to resources; improves the environment without harming it;

permits value to return to all actors; contributes to the healthy balance of the social ecosystem; is durable and lasts beyond a human lifespan; and it is implemented within a public context.

When McDonald's was introduced in Rome, in 1986, at the base of the Spanish Steps, it was met by protestors, including the journalist Carlo Petrini, who gave pasta to passers-by while chanting *"we don't want fast food…we want slow food."* This was the formal beginning of the global slow food and farm-to-table movements that seek to redirect the globalization of food systems to promote local food cultures, production, and communities.

Alice Waters' seminal book, We Are what We Eat, is based on the premise that the culture of fast food (fast, cheap, and available) reflected a cultural dehumanization that affected human health, bodies, and lives. The Rome Sustainable Kitchen residency program was developed in 2006 with the guidance of Alice Waters as a replicable sustainable food model at the American Academy in Rome using the Academy's vegetable garden and nearby farms and organic suppliers, the culinary internship program, and the spirit of the communal Roman table.

Local and community food producers have provided models for sustainable food production by providing direct-to-consumer services that build community social structures, supporting local economies, sparking job creation, and promoting health though nutritious food. The definition of *local food* is not federally regulated and varies depending upon factors from geography to governmental, organizational, and private interests, but, in short, local food is food that travels the entire supply chain (from production to consumption) in the same locality.

Regenerative Land Practices

The shift to *local* and *regenerative* practices and systems is a response to the multiple *'challenges facing food systems (e.g., climate change, changing demographics, labor, access to land and food; soil fertility, displacement, animal welfare, food waste, human health, and justice),'*

Regenerative land practices and local food system have historic ties to Black, Indigenous, People of Color (BIPOC) communities. The Tuskegee University professor, Professor Booker T. Whately, who researched and wrote on regenerative agriculture and first introduced the concept and an early form of Community Supported Agriculture/CSA in the 1960s as a solution for struggling Black farmers.

Regenerative practices shift from sustaining or maintaining to fundamentally rethink and redesign food, food systems and food practices *to move beyond capitalist approaches by acknowledging and including diverse forms of knowing and being; centering care (of people, animals, and the planet); commoning food systems, promoting accountable innovation, planetary-scale planning, and rural–urban relations.*

Commoning the food system is a vision that reclassifies food as a non-commodity, and as part of a commons at the center of an ecological organization structured around the principles of anti-colonialism, anti-patriarchy, equality, social justice. It is based on the recognition of nature and society as intrinsically connected. Practices of *food commoning* include foraging and seed sharing and the conservation and sharing of landrace varieties (locally adapted animal or plant species that developed over time).

Regenerative land approaches are based on valuing the ecosystem of relationships between organisms and environments and between environments and structures to foster *circular economies*. The principles of a *circular economy* include eliminating waste and pollution, circulating products and materials at their highest value to reduce waste, and regenerating nature.

Regenerative agricultures can restore soil and ecosystems and address inequity by improving the quality of land, water, and climate for future generations. A regenerative, circular, ecosystems approach to food production encourages considering the full range of living organisms.

For example, a circular food system approach that values the relationships between animals and land--a universal practice until the 1950's when animals were taken out of the agricultural cycle and confined to separate feed lots--cycles nutrients through soil, increases water retention (from the organic matter left behind by animal manure), and curbs weed and pest problems without the use of chemicals.

The farming of shellfish and seaweed together is another circular example. Kelp (a subspecies of seaweed) provides food and habitat for fish while also improving water quality by removing excess carbon and nitrogen. Oysters and other types of shellfish filter water through their gills consuming plankton and algae. They also filter nitrogen and phosphorus from the water, using these nutrients to support the growth of their tissue and shells and in the process reduce the risk of algal blooms and oxygen depletion.

In the 19th century, the abundance and popularity of oysters led to the construction of free-standing oyster houses—the progenitors of the modern-day oyster bar. The oldest in Boston, the Union Oyster House, dates from 1826. Even more important that the value of oysters as food is their ecosystemic value.

A single oyster can filter more than 50 gallons of water per day. Aggregated, oyster reefs (comprised of living and dead oysters) not only filter, and provide habitat for numerous species, but by dissipating the power of waves, they also protect against floods, wave surges, and coastal erosion due to rising sea levels caused by climate change. At the harbor site, new oyster reefs may be artificially encouraged to form by depositing a mass of oyster shells seeded with spat (baby oysters) to grow. Spat can also grow atop other substances such as concrete.

Living Soil

A handful of soil represents a network of particles at a time scale beyond human lifespans of billions of years. Soil is living not inert; like a forest or coral reef, soil contains living organisms-- from small weed, insect pest, plant pathogen populations to large populations of beneficial organisms and microbes.

A network of microbes balance soil chemistry in concert with living organisms that regulate water filtration, mineral density, and nutrients. This is defined as the *Soil Food Web* which through an effect called the *soil carbon sponge*, the process of cycling of water and carbon, produces porous, well-aggregated soil rich in plant roots, diverse life forms, nutrient availability, breathable air, drinkable water, and climate regulation.

In the studio, we will consider soil and soil quality in relation to regenerative land practices, human habitation, and building. Soil texture and structure greatly influence water filtration, permeability, and capacity. Soil texture is the composition of the proportion of small, medium, and large particles in a specific soil mass (e.g., clay, silt, and sand). Soil structure is the arrangement of soil particles into stable units or aggregates (e.g., loose, crumbly, or uniformly patterned).

Permeability, drainage, porosity, etc., properties of soil structure and texture, influence the ability of soil to promote growth for farming; they are also important in designing building foundations and structural systems. Soil amendments may be introduced to change the physical structure of soil for farming, while for building deeper foundations are most often used. The addition of organic material produces a healthier and more productive soil ecosystem to enable site remediation, revegetation and revitalization, and reuse.

Previous approaches to drainage sought to remove excess water from soil, regenerative approaches seek to protect water quality and conserve water for use in hotter and drier periods using sub-surface drainage and tile drainage systems.

Regenerative farming practices such as cover cropping, no-till, reduced-till, mulching, compost application, and conservation plantings and drainage improve the resilience of soil by changing its physical structure through increased infiltration, hydraulic conductivity, and moisture retention leading to greater soil moisture storage, faster infiltration, and improved drainage which results in carbon sequestration and greenhouse gas reduction.

Soil is also an essential aspect of buildings and construction. Soil is also a component of common building materials, such as cement, concrete and brick. Soil is an indirect component of plant-based wood boards and insulation fibers. Soil composition is central in the design of building foundations. Much of the displaced soil in East Boston came from a combination of leveling higher islands to fill the Flats, dredging the harbor, and building embankments. Landfill is less stable soil and may require varying degrees of physical soil amendments and stabilization, as well as the use of pile foundations.

URBAN EOLOGIES

East Boston has the largest man-made land areas in all of Boston and was once five distinct islands in Boston Harbor: Noodles, Hog (Breed's), Bird, Governors, and Apple. The current landmass of East Boston was created in the 1940's by filling over three of the five islands. At least two-thirds of the area consists of the airport Bird, Governors, and Apple islands.

In 1833, in response to railroad development, the East Boston Company was formed to develop the island. In 1836, East Boston was annexed by Boston. The neighborhood had peak periods of expansion in the 1840's from maritime expansion along the waterfront, and in the 1920's to build, and then, in 1960s-1970s, to expand Logan Airport. The development of East Boston has continued according to the plans of an array of private and municipal interests and developments.

The Core 3 design project, the *Eastie Longhouse: Community Supported Agriculture Service and Food Residency*, a community owned and operated collective workspace for food production, distribution, and education, is to be located within the designated project area. Students will have the opportunity to analyze the building placement, orientation, and access, the organization of program volumes and overall spatial experience, as well as urban and social conditions.

The project area is geographically situated east and west between the East Boston Piers Park and the ICA Museum Watershed and encompasses residential fabric in Jeffries Point to the north and the East Boston waterfront to the south. The harbor zone contains the footprint of the once thriving maritime harbor including the East Boston Company properties. Jeffries Point began as a drumlin (an elongated hill shaped by glaciers) that was a military encampment in 1711 before it was designated *Section 1*, a residential zone in the East Boston Company plans, and later named Jeffries Point after a resident.

The project area offers a variety of conditions to explore including accessibility to the coast, residences, intersecting roads, and shops and markets, and a gradient of topographic and climatic conditions.

Students will have the opportunity to explore regenerative and circular food systems local community food systems, and seasonality through farm production and market distribution and the presence of year-round residents and visitors. They will also explore regenerative and circular building systems by exploring seasonality and orientation at the building scale.

BUILDING ECOLOGIES

The semester's long Core 3 building design project is structured by a series of interrelated scalar explorations of food systems, enclosures, and environments. The design of the building enclosure includes explorations of the cultural, environmental, constructive, and material systems. The building design problems offer the opportunity to explore sustainable and regenerative architectural design strategies that are climatic adaptative and consider the carbon profile of the building and environmental materials, building envelope, and technical systems.

According to a report by the United Nations Environment Programme (UNEP) in 2004, sustainable (and regenerative) approaches are needed to "generate the energy we need without depleting the source of that energy and without releasing greenhouse gases that contribute to climate change."

Buildings use resources (energy, water, raw materials, etc.), generate waste (construction, occupancy, and demolition), emit potentially harmful atmospheric emissions, and in the process change the function of land, and the ability of land to absorb and capture water into the ground. As reported by the World Green Building Council, 39% of global energy related carbon emissions come from buildings. Of this, the energy needed to operate buildings (heating, cooling, and power) is 28% and the remaining 11% from materials and construction.

Sustainable approaches to building design and construction seek to minimize negative impacts on society and the environment, and the economy by reducing, or avoiding the depletion of resources (e.g., energy, water, land, and raw materials), prevent environmental degradation that facilities and infrastructure produce throughout their *lifecycle*, and create built environments that are healthy and productive.

A building's *lifecycle* is a process that, in the standard mode of building construction, goes from extraction, to manufacture, to transport, to construction, to maintenance and refurbishment, to demolition, and recycling or disposal. Strategies that promote considering the *whole lifecycle* of a building focus on advancing low or zero carbon emissions construction.

In building design, consider which parts of the standard lifecycle can be rethought, adjusted, or eliminated. Sustainable strategies include the use of existing buildings rather than building new construction as this saves on the extraction, manufacture, transport of new construction; or the use of existing or recycled materials and buildings which also reduces or eliminates demolition and disposal.

Designing with the ease of conversion, reuse and recycling considered reduces the amount of waste that is sent to landfill. Prefabricated components encourage circular design and construction as building components are produced of-site and assembled on site which allows for inventorying materials so that waste emanating from the production process can be returned into the system to reduce or eliminate material leftovers. Experiments in 3D-printing technology use a variety of powdered materials from concrete additives like sand, to coffee, etc., to produce modular building components that are thermally and environmentally responsive.

Other sustainable strategies involve the use of Computer aided design (CAD) optimization to analyze the energy performance, and carbon emissions to affect building lifecycles. CAD optimization can also be used in the production of 3D printed components of varying geometrical and physical characteristics from individual units to aggregates and building scale objects to analyze their design, manufacture cost, energy performance, and carbon emissions.

As in the example of regenerative land practices, applying a regenerative, circular, and holistic approach to building design can create built environments and buildings that can regenerate themselves, their communities, and their ecosystems.

MODULE I
Food Storage Enclosures and Environments

In Module I, the studio will explore the combination of physical and environmental controls through food storage containers across scales. The design problems allow students to explore, translate, and integrate the evolving aspects of their design at the different scales and vantage points.

It can be said that the development of cities is linked to the ability to maintain stable food supplies. Food storage enclosures have an ancient lineage that is documented in Ancient Egyptian and Hebrew texts. The enclosures have ranged from ceramic pots to pits dug in the ground, to raised buildings, to warehouses, etc., Structures for food storage and preservation are designed to engage the surrounding environment from being buried to use the earth's thermal mass or raised above the earth's surface to ward off the elements and pests.

XSML Design 1: Bento: Micro-scale Modular Food Storage Volume

A two-week exercise that explores rituals of food production and consumption from the communal meal to the 'boxed lunch' or 'take-out' AND food storage and environmental controls at a micro-scale in the design and construction of a modular moisture resistant 'to-go' container. Students will design and build a portable food container that is informed by its contents. Each student draws a card for a food type that will be an ingredient in the contents of the container and research and map the origin, history, and production of the food-type. Despite the reduced scale, thermal and moisture considerations are critical to the design.
Deliverables: Modular Portable Food Storage Container + Foodways Source Map.
Handout Th Sept 07; Due Th Sept 21

SML Design 2: Pantry: Small-scale Food Storage Volume

A two-week exercise that explores architectural constructive systems AND continues the exploration of food storage and environmental controls at a small-scale in the design and construction of a freestanding food storage container on the East Boston site. Students begin by pairing to choosing constructive and material systems from the building precedents to research. Student pairs will analyze the constructive system and precedent to extract the logic and principles. Students will work independently to apply the logic and principles of the constructive system to the design and construction of a food storage pantry that responds to humidity, air movement and light. Food storage pantries
Deliverables: Physical Pantry Model + Large-scale Plan and Sections that incorporate the Precedent/Constructive System Analysis. Scales: TBD.
Handout Th Sept 21; Due Th Oct 05

M/LG Design 3: Market: Medium-scale Enclosure + Small-scale Volumes + Synthesis

A three-week exercise that introduces the Long House program on the site and calls for a synthesis of the prior scales of exploration through program and site analyses to produce an initial building concept. Students are encouraged to analyze the program to understand the potential of seasonality, functional workflows and movement of water, people, and framing of food production, distribution, consumption, digestion, and regeneration within the building design.
Deliverables: Building Concept Model with Program Volumes and an Enclosure + Large-scale Plan and Sections (+ the Market Enclosure + the Pantry + the Bento). Scales TBD.
Handout Th Oct 12; Due Tu Oct 24

MODULE II

Building Design Development

The second half of the semester, Module II, provides the opportunity to reflect upon the production of ideas, themes, designs, and representations that rose in the first half and culminated in the initial architectural building concept in Building Design Development.

Students will consider the interrelationship of all building systems including constructive, material, environmental, and structural. In the final detailed design students will further the exploration of the public nature and image of the building through the design of the envelope and exterior elevations, and in the design of the building interior surfaces and views.

In Module II, each studio will work towards a common set of deliverables within the conceptual framework established by the studio groups. The deliverables will allow for the construction of experimental large-scale model and partial full-scale mock-ups.

Design Development 1: Building Envelope *(Elevation/Section/Wall Detail)*

Building and Environmental System Design Development through the design of the building envelope allows for the exploration of the relationship between the building exterior and interior, the properties of the building closure, and internal climatic properties.

Tu Oct 24-F Nov 03

Design Development 2: Structural system and grid *(Plans and Sections),*

Building and Structural Design Development through the design of the Structural system and grid encourages the consideration of the weight, distribution, and expression of building elements.
F Nov 03-Th Nov 16

Design Development 3: Connection Details

Building and Detail Design Development through zooming in at different scales and from different vantage points allows for the resolution of the design.
Th Nov 16-Th Nov 30

Design Development 4: Final Design Development

While representation is a component of each design stage, in the final design development phase, students will also design the presentation of your semester's work.
Th Nov 30-W Dec 13 *(Final Review W Dec 13)*

PROGRAM DESCRIPTION

EASTIE LONGHOUSE: Community Supported Agriculture and Food Residency

The 30,000 GSF structure encourages the support of co-operative local and regional food networks. It includes a multi-season community market and a community supported farm with a teaching kitchen, areas for food incubators, and living units for nine fellows and a director within a climate adaptive envelope.

The architectural design and development of flexible plans and multi-use spaces are encouraged to demonstrate how the spaces transform to accommodate off-season uses and functional workflows in the program areas. Attention will be given to technical requirements for daylight, interior and exterior environments and climate control, and sensitivity to materials and carbon footprints. Seasonality as established by growing seasons and the climate adds a critical temporal dimension to the structure.

The Longhouse is one of the oldest vernacular domestic farming structures that remains in production. It has been built in a variety of countries (Asia, Europe, and North America), and cultures, and forms. The long house is long, proportionately narrow, single room building with a pitched roof that serves for communal dwelling. Traditionally, it was a communal structure that housed extended families.

A product of agrarian lifestyles, the form has the capacity to accommodate extended families, livestock, crops, and work areas within the building envelope. The traditional structure was oriented based on the local climate, geography, and local materials, and built of timber or stone. For thermal efficiency, it is raised off the ground on stilts or sits atop stone foundations or emerge from an earth berm. Contemporary versions are also built of brick and concrete.

The Long House program provides Core 3 students with the opportunity to explore and challenge the pattern of food production, distribution, and access that produces food deserts and inequities. While the formal appeal of the building type is its capacity to contain both program volumes and void space, as a model for regenerative practices, the longhouse supports *commoning* by combining living, production, and distribution under one roof. Students will be encouraged to explore the form, function, and expression of linearity of the Longhouse while also considering possibilities to hybridize and modernize the building type.

PROGRAM AREAS

INTERIOR SPACES 25-35,000 GSF

(Within a climatic adaptive envelope.)

Multi-season Market + Incubators (50% GSF) 12,500sf

- Multi-season Market (with stalls for growing and selling) 10,000sf
- (10) Food Incubators 2,500sf

Multi-season Community Cooperative + Kitchen (50% GSF) 12,500sf

Public Zone (25% GSF) 7,350sf 25%

Reception 1,900 sf

- Entry 200sf
- Drop-off/Waiting/Lobby 950sf
- Reception 200sf
- Coat Room 100sf
- Public Lavatories (6 @ 75sf; M/W/UNI/HA) 450sf

Education Kitchen 3,000 sf

- Kitchen Island 1000sf
  (10) Workstations equipped with Bar Seating and Kitchen Equipment
- Service Kitchen 250sf
- Pantry/Storage 150sf
- Café seating 1,450sf
- Café Storage 150sf

Education Administration 1000 sf

- Education Offices 500sf
- Storage (2 @ 75) 150sf
- Library/Meeting 350sf

Public Gatherings 1,450 sf

- Event Space or Auditorium or X (75 seats) 1,250sf
- Storage 200sf

Administration Zone (10% GSF) 2,650sf

- Offices/Workroom/Research 500sf
- Conference Room 150sf

- Storage (2 @ 75) 150sf
- Staff Lavatory (M/W/UNI/HA) 75sf

Service Zone (10% GSF) 2,500sf

- Delivery/Loading Docks 1,000sf
- Workshop (including Trash Room, Janitor's Closet) 500sf
- Staff Lockers 50sf
- Staff Lavatory (M/W/UNI/HA) 75sf
- Freight Elevator 725sf
- After hours entrance 150sf

Residency Living Quarters (+ 20% GSF) 5000sf

- (10) Accommodations, 500sf (each unit to include 1 queen bed, bathroom, closet, and work/sitting area)

Circulation/Mechanical/Electrical Loss (20% GSF) 5,000sf

EXTERIOR SPACES (+25% GSF) 6,250sf

- Seasonal Produce Production Fields 5,250sf
- Exterior Gathering Spaces 1,000sf

* Project must comply with applicable City of Boston Zoning and Building Codes and National ADA requirements.
* Provide (1) Elevator (2) Fire Stairs and Accessible Ramps for ADA compliance.

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6. "Why Take A Life Cycle Approach," United Nations Environment Programme (UNEP) 2004.

COURSE EXPECTATIONS

Thinking Through Making

Core 3 students will explore the architectural character of building in an iterative design process that is grounded in thinking through making. Thinking through making is the process of considering something by reflecting, analyzing, translating, synthesizing, concluding, cataloguing, mapping, modeling, documenting, drawing, and designing objects, systems, narratives, or experiences.

Design thinking exceeds text and the spoken word and is expressed through what is physically or digitally manifested. Thinking through modeling is an opportunity to explore the potential of three-dimensional physical representations and is a central aspect of the Core 3 studio production. The objects we make represent our thoughts and may be considered to have “intelligence” that is communicable. This process of thinking and making alternates back and forth and is iterative. Development occurs with continual reflection, over time.

The Core 3 instructors will support student development of a design process and practice that emphasizes thinking through making, the exploration of design options through drawings and models, quick studies and iterative studies, and the exploration of material and construction techniques.

The semester is organized in quarters. In the first quarter, the two assignments encourage explore foodways and form at a micro scale (a bento) and small scale (a pantry) and the constructive system precedents are introduced. In the second quarter, we continue at the site with a medium scale exploration (a section of a market enclosure). The program is introduced in the final assignment in this series to enable students to project an initial building concept by midterm. The third quarter consists of the building design development and system integration. In the final quarter, detail design development leads to the final presentation.

Throughout the semester, the Core 3 studio will enable a range of voices and views on foodways and infrastructure to provide opportunities for students to receive different input and feedback as during the development of their building designs. In addition to reviews and pin-ups, there will be faculty presentations and TA workshops and tutorials. The TA team will also coordinate the semester’s workload with Core 3 instructors, Caitlin Mueller, and BT team to identify in advance any workload issues or conflicts.

Student Participation

Participation is an important part of the MArch1 Core Program and required core studio classes. Participation can occur across many forms including attendance, material experimentation, foraging, and creating recipes which can be done either individually or in groups, individual or collaborative participation in pin-ups and reviews, and class discussions with speakers and guests.

Grading Rubric

Core 3 grades will be assessed for each Design Module based upon the following criteria:
• Quality of design concept and design development at site, building and detail scales
• Ability to establish an iterative design process to explore & synthesize design options
• Ability to understand and engage with the program and meet its needs
• Ability to integrate structural, enclosure, climate, and architectural design strategies
• Ability to understand the carbon impacts related to the choice of materials and construction systems
• Self-Reflective capability: the student’s capacity to reflect upon and critique her/his own work
• Participation in class discussions, S/SEAS micro-projects and collaborative teamwork

METHODS OF EVALUATION

The Core 3 teaching team will utilize three methods of evaluation:

1. Quantitative Evaluations

of Building Technology integration in students 'architectural design projects will be conducted through students 'understanding of section, construction assembly and construction detail drawings in their studio projects and through their BT problem sets.

2. Qualitative Evaluations

will be conducted through presentations and discussions of students 'studio work to track development of the students 'design process, design research skills and understanding of design integration across scales in architecture. In distinction to conventional "architecture juries" where students listen and experts talk, this studio will pursue more discursive formats that seek to engage students, faculty, and external guests in conversation on students 'design projects.

3. Self-Reflective and Peer Evaluations

To foster reflection on their design work, students will be encouraged after each project discussion to formulate a key question and list the first steps that they will initiate to respond to that question. The intermeshing of material research/experimentation paired with skills in design representation and documentation will provide space for self-evaluation and transitions between scales in architectural design.