

ABSTRACT

Title of Thesis: CREATING COMMON GROUND:
ARCHITECTURE FOR TACTICAL
LEARNING AND CREATIVE
CONVERGENCE

Valerie Lynn Sherry, Masters of Architecture,
2015

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Certain environments can inhibit learning and stifle enthusiasm, while others enhance learning or stimulate curiosity. Furthermore, in a world where technological change is accelerating we could ask how might architecture connect resource abundant and resource scarce innovation environments? Innovation environments developed out of necessity within urban villages and those developed with high intention and expectation within more institutionalized settings share a framework of opportunity for addressing change through learning and education. This thesis investigates formal and informal learning environments and how architecture can stimulate curiosity, enrich learning, create common ground, and expand access to education. The reason for this thesis exploration is to better understand how architects might design inclusive environments that bring people together to build sustainable infrastructure encouraging innovation and adaptation to change for years to come.

The context of this thesis is largely based on Colin McFarlane's theory that the "city is an assemblage for learning"¹ The socio-spatial perspective in urbanism, considers how built infrastructure and society interact.² Through the urban realm, inhabitants learn to negotiate people, space, politics, and resources affecting their daily lives. The city is therefore a dynamic field of emergent possibility. This thesis uses the city as a lens through which the boundaries between informal and formal logics as well as the public and private might be blurred. Through analytical processes I have examined the environmental devices and assemblage of factors that consistently provide conditions through which learning may thrive. These parameters that make a creative space significant can help suggest the design of common ground environments through which innovation is catalyzed.

¹ McFarlane, Colin. *Learning the City*, p 14

² Gottdiener M., Hutchison R.: *The New Urban Sociology*. 4th ed. Boulder, CO: Westview/Gottdiener/Hutchinson, 2011, 394; see also 20.

CREATING COMMON GROUND: ARCHITECTURE FOR TACTICAL
LEARNING AND CREATIVE CONVERGENCE

by

Valerie Sherry

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of the requirements for the degree of
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Dedication

To Dave Caruolo for your unconditional support and for encouraging me to follow my passion.

To Jan and Paul Sherry, for providing me with access to an education, for your commitment to lifelong learning, and for teaching me the importance of an “I Can” attitude.

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Chapter 1: Introduction

*Tactical Learning:
“A field of pragmatic opportunity
that disrupts the everyday by disclosing possibility”³*

Hypothesis

Tactical Learning

This thesis hypothesizes that architecture can cultivate community, shared discourse and individual learning by reconstituting learning spaces as a public commons. This infrastructure first marks an urban public space then allows for community interaction with and authorship of space and program. One of the goals of this thesis is to test the creation of common ground through spatial prototyping that results in an inclusive environment for learning. This thesis makes distinctions between the experience and context of the innovator out of necessity, one whose context is a resource scarce innovation environment vs. innovator out of expectation whose context is a resource abundant innovation environment (e.g. see Fig.01).

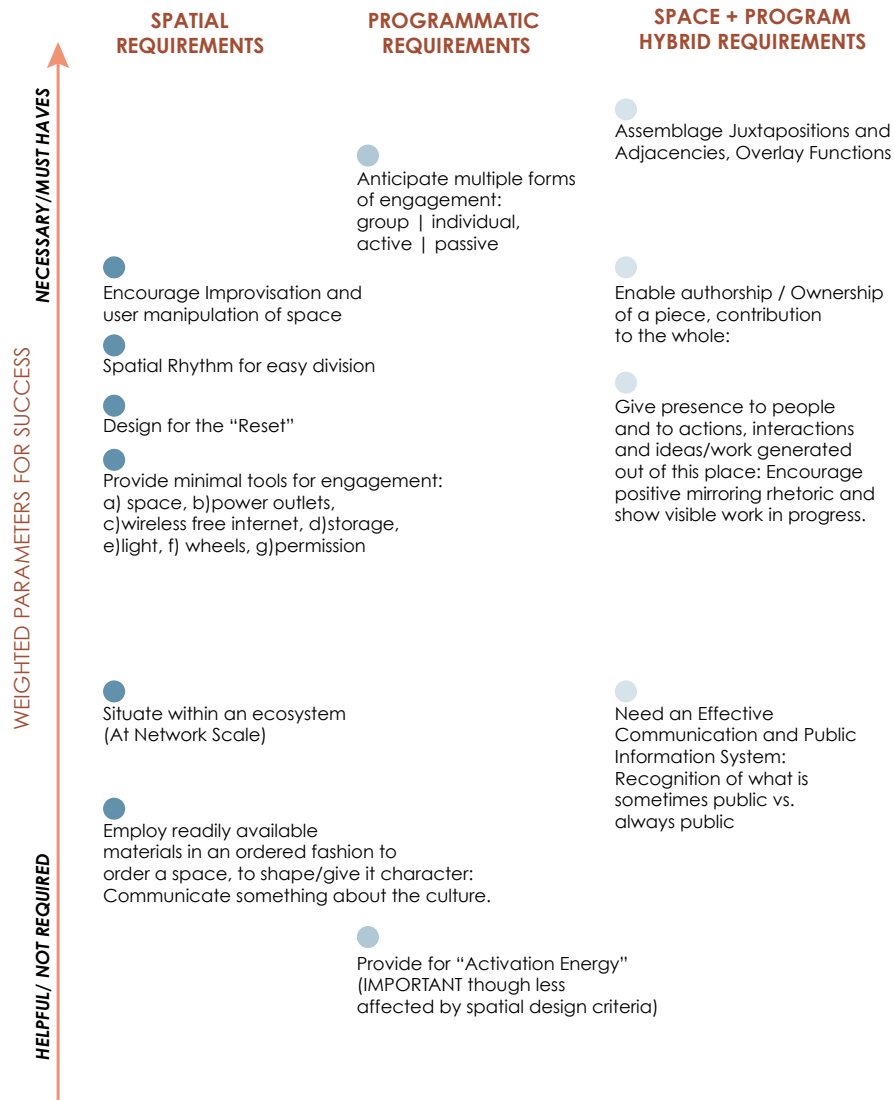


(Fig. 01) Resource Scarce vs. Resource Abundant Innovation Environments

³ McFarlane, Colin. Learning the City p 73

Weighted Factors for Successful Innovation Spaces

Through my investigation and analysis of existing learning and innovation spaces in the formal, (corporate, educational, institutional), and informal (urban) realms I have determined that, “successful spaces” share the following weighted factors (e.g. see Fig. 02).



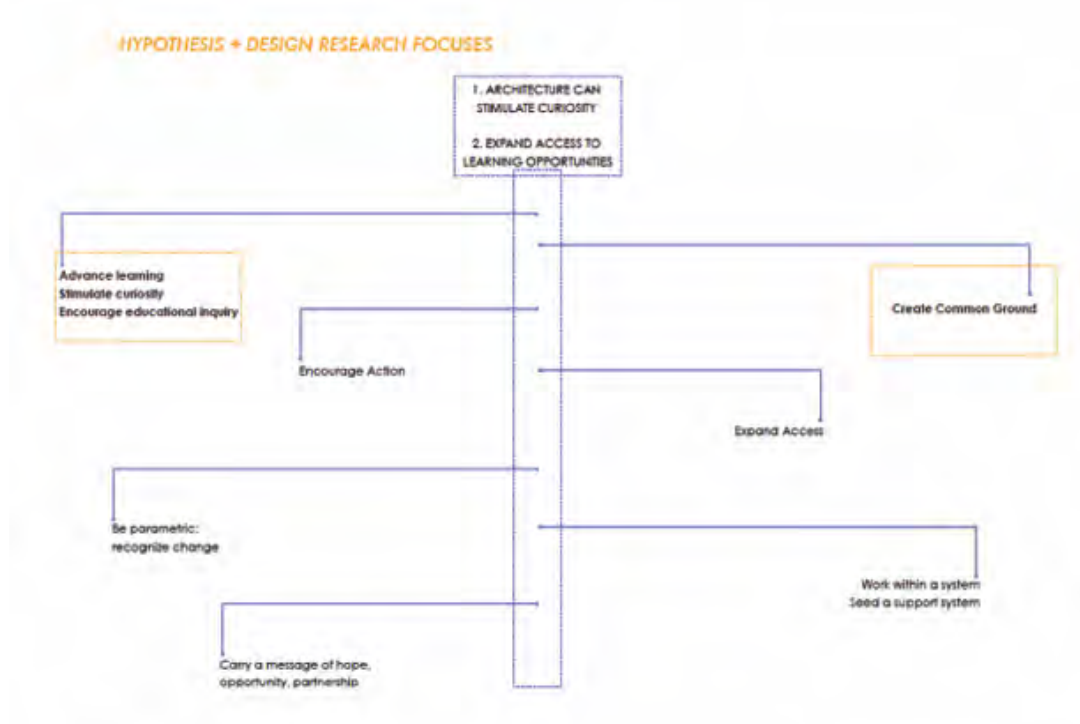
(Fig. 02) Weighted Factors for Successful Learning and Innovation Spaces.

For example, one way to spatially Encourage improvisation and user manipulation of space would be to design moveable vs. immobile spatial surfaces or dividers enabling ways to quickly gauge, measure, or divide space. Design for the “Reset” could be achieved by designing a guiding framework with subtle cues and instructions about how to ‘reset’ the space for future use by others. Spatial Rhythm for easy division / Stage Set entails simplicity, and an order in supporting design that makes space a backdrop or stage supporting and enhancing the activity or performance occurring within it. The idea of Employ(ing) readily available materials in an ordered fashion to order a space in order to shape it/give it character gives the designed space an opportunity to communicate something about the culture or location within which it is situated. This is also an example of a parameter where design cannot be neutral, but rather candid about what this space is intended for. A successful space must be Situate(d) within an ecosystem and give presence to idea that the resource or a series of resources and spaces are part of a larger networked ecosystem. This positioning of a part within a whole will enable awareness of the role each part might play within the larger context. Situating a space within an ecosystem also promotes access. Although Provid(ing) for “Activation Energy:” is extremely important to the success of a space, it is less controlled by the design of the space. It is intended that the rest of the parameters may promote and enable more catalysts to come to and use this space. Activation energy also has to do with the programming involved in the space and Urban Learning Forum will promote bringing people together, and therefore allowing ideas to collide around a certain topic. The parameter, Assemblage Juxtapositions and Adjacencies, Overlay Functions is one of

the most important factors for a space that is both stimulating creativity and enabling access to educational opportunities. This concept considers different types of programming and services that might draw people to a place. If diverse services are juxtaposed, it promotes the possibility that learning through difference will occur by attracting diverse populations and enabling chance encounters with other resources. The project addresses this by helping users hybridize ideas through proximity or explicitly linking to other resources. The parameter, Give presence to people and to actions, interactions and ideas/work generated out of this place considers how we might highlight the work that has been and is currently being done within a given setting with the explicit goal of encouraging positive mirroring rhetoric⁴ by showing visible work in progress. This idea gives presence to those came before, who have used the space or are using the space at different times of day in order to invoke a sense of community and built up history tied together by use of the space. A precedent for this is the Stanford d.school reflection documents which are posted on the wall with photos of student participants. One could also explore how there might be a digital trace of these users that could also highlight the great work being done. When ideas are not selected when moving an idea through an innovative process, where do they go? Perhaps all the idea needed was the added insight from another individual with different experience. This parameter therefore considers how “failed ideas” can be recycled for use by others and turned into actionable items based on experiences of new people coming in. Enabl(ing) authorship / Ownership of a piece, contribution to the whole signifies allowing people to have a piece of how the space

⁴ Vision, Rhetoric, and Social Action in the Composition Classroom. Southern Illinois UP. Print. p 165

operates, something they could plug into the space and take with them for use outside the space. Lastly, Need an Effective Communication and Public Information System is a parameter, which places importance in recognizing what is sometimes public vs. always public and references how certain elements of the space may be sponsored or maintained. Overall, the above strategies are ways to achieve the following goals, which are embedded in my thesis design as the assertions supporting my hypothesis. I hope to design for and test whether Architecture can: Create common ground | Expand access | Advance learning | Encourage action | Encourage educational inquiry | Work within a system or seed a support system | Carry a message of hope and be a good partner | Grow, be generous, accommodate change, and recognize possibility for change (eg. see fig. 03).



Source: Author

Caption: Research Main Branch and Fibrous Root "Threads"

Chapter 2: Agency and Value: The Role of the Architect

“ I have been impressed with the urgency of doing. Knowing is not enough; we must apply. Being willing is not enough; we must do.” – Leonardo Davinci

Urgency

In a world with a growing global population and diminishing resources, populations must be creative in order to gain or sustain access to basic needs and services to accommodate for this population growth. Architects must assume a role to practice spatial agency, defined as “something that adds social value to the world” and which “critically interrogate[s] the status quo, and change[s] it for the better.”⁵ This thesis argues that architecture and architects should have a social agenda and consider the best possible ways to make a spatial difference. In order to approach this social agenda, practitioners of spatial agency must start from a place of respect of the knowledge of others.

Agency

Value Proposition of Architects

Throughout architecture school, it has become clear, the value that architects can provide, especially within the context of a high functioning team. Teams consist of diverse individuals coming together toward a common agenda. Architects are creative and analytical thinkers, trained to consider challenges at multiple scales. This thesis argues that the primary roles of the architect are to be a *synthesizer* and a

⁵ Awan, Nishat. Spatial Agency – page 33

communicator. Synthesis is defined as “the combining of the constituent elements of separate material or abstract entities into a single unified entity.”⁶ Furthermore, synthesis, as a term used in chemistry represents “the forming or building of a more complex substance or compound from elements or simpler compounds.”⁷ With the ability to hybridize information and synthesize the disparate expertise of team members, architects have the opportunity to be creative leaders.

From a philosophical standpoint, Michel Foucault, states that the nature of architecture, “is only taken as an element of support, to ensure a certain allocation of people in space, a *canalization* of their circulation, as well as the coding of their reciprocal relations.”⁸ Architecture, as a holistic approach to design should by nature be a strong partner to allied challenges and opportunities. As the field of architecture evolves, the opportunity for its relevance expands as the need for “wicked” problem solvers increases. What would architect mean as a verb? This thesis explores how architect as a verb could mean, to listen, advocate, communicate, collaborate, and synthesize.

⁶ <http://dictionary.reference.com/browse/synthesis>

⁷ <http://dictionary.reference.com/browse/synthesis>

⁸ Leach, Neil. *Rethinking Architecture: A Reader in Cultural Theory*. New York: Routledge, 1997. Print. Chapter on Michel Foucault, p. 377

Chapter 3: Thesis, Scope, Agenda: Creating Common Ground

Scope and Scale

My goal for this thesis proposition is to test the creation of common ground through spatial prototyping that results in an inclusive environment for learning and exchange. I plan to design for the human and building scales while suggesting how the design is positioned within an urban network of paths and nodes that plug into and connect with the hub and center. The scope of work I plan to pursue includes the design of a central urban learning commons bridging resource scarce and resource abundant innovation environments. Creativity and learning infrastructure can be used to accommodate varied programming (sponsored vs. community authored) within this forum. During this design process, I considered the social, political, legal, cultural, ecological and economical implications of my design decisions. My goals for this thesis process are to question the standard process, to involve others in collaboration and to pull from hybrid design processes such as Architecture, Design Thinking, and Spatial Agency.

Little common ground exists between formal and informal educational environments. In an ever-expanding urban population, there are few learning spaces that bridge formal or institutional and informal innovation environments. The city is a site where “people of all sorts and classes mingle, however reluctantly and agnostically, to produce a common if perpetually changing and transitory life.”⁹ I

⁹ Harvey, David. *Rebel Cities: From the Right to the City to the Urban Revolution*. New York: Verso, 2012. Print. p 67

would argue, however, that the current commons is missing an awareness or inclusion of the “other.” The current commons consists of places where likeminded people are being brought together, yet how could new types of public space and commons make us aware of the “other” and what is lacking? Learning is emergent and therefore requires the hybridization of informal and formal environments. This thesis argues that both informal and formal environments have spatial devices and characteristics that contribute to enhancing creativity and access to educational opportunities (e.g. see figure 04).

INFORMAL

- _ CLAIM RESIDUAL SPACE
- _ CIRCUMSTANTIAL
- _ AGILITY
- _ TESTING - CONFIGURATIONS
- _ SHARING RESOURCES
- _ HYBRID SPONSORS
- _ APPROPRIATING
- _ CLAIMING SPACE, RESOURCES
- _ FRUGAL INNOVATION
- _ CITIZEN EXPERTISE

FORMAL

- _ REGULARIZE SPACE
- _ IDEAL
- _ CONSISTENT
- _ RELIABLE
- _ EXPECTATION
- _ PROFESSIONAL EXPERTISE
- _ DEDICATED SERVICES, RESOURCES
- _ GLOBAL CONNECTION

For this reason, it is important to consider why it is important to understand the theoretical arguments supporting the expansion of access to common ground and hybrid learning environments. I explored numerous theories pertaining to each thread of my research (e.g. see fig. 05)



Source: Author

Caption: Main research themes, theories

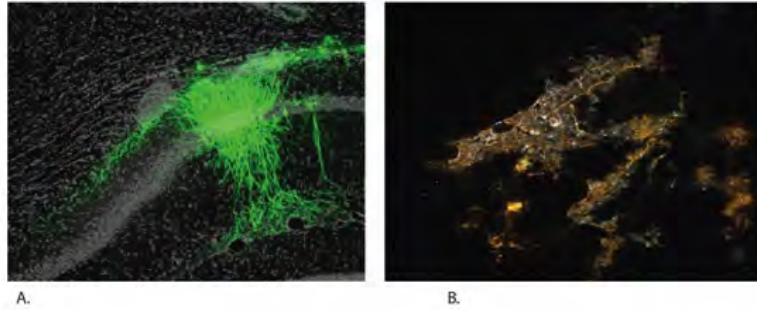
Chapter 4: Research Agenda (s)

What gives rise to creativity, with relation to architecture is where my research begins. The two main research threads grow out of my hypotheses that Architecture can stimulate curiosity and that it can expand access to learning opportunities. The two main research threads I am pursuing relate to how architecture can create common ground and how it can advance learning or encourage educational inquiry.

Colin McFarlane, author of *Learning the City: Knowledge and Translocal Assemblage*, has a background in geography and takes an important stance on urban learning. His work is closely tied to the assertions made in this thesis. Throughout the thesis, the following topics remain inextricably tied but with their own respective threads: learning, creativity, urban informality, common ground, politics, space and economy.

The Importance of Creativity

Creativity is generated or creative thinking occurs through the birth of neurons in the brain through a process called neurogenesis, which makes new connections based on “collision theory.” Neurogenesis is the process by which neurons are generated from the coming together (the collision) of two different stem cells, neural stem cells and progenitor cells. (e.g. see fig. 06)



Source: (A) (B) NASA

Caption:

Neurogenesis rendered compared to night view of city of Mumbai.
Assertion that in city, this creative collision can occur in the physical realm, just as it can occur remotely in the digital realm. Cities have the asset of density and human capital.

Harold Weissman offers, in his book, *Serious Play*, that “two traits...are closely related to creative capacity: 1.playfulness and 2.relaxation”¹⁰ Meanwhile, psychologist Mihaly Csikszentmihalyi notes that:

“certain environments have a greater density of interaction and provide more excitement and a greater effervescence of ideas; therefore, they prompt the person who is already inclined to break away from the conventions to experiment with novelty more readily than if he or she had stayed in a more conservative, more repressive setting.”¹¹

Both theorists emphasize the need for spaces to promote interaction and a mix of intense activity as well as escape. The thesis design takes this into account through its spatial layout. Using the underlying concept of ‘Frugal Innovation’ otherwise called ‘Jugaad,’ to allow for elements of the design to be redundant and accommodate many potential configurations for use using efficient design.

¹⁰ Weissman, Harold H. *Serious Play: Creativity and Innovation in Social Work*. Silver Spring, MD: National Association of Social Workers, 1990. Print. p.59

¹¹ Csikszentmihalyi, Mihaly. *Creativity: Flow and the Psychology of Discovery and Invention*. New York: HarperCollinsPublishers, 1996. Print. p.129

Learning Assemblage

Assemblage

“What is inventive is not the novelty of artifacts and devices in themselves, but the novelty of the arrangements with other objects and activities within which artifacts and instruments are situated, and might be situated in the future.”¹²
– Colin McFarlane

The spatial nature of this thesis process and product has to do with interactions between component parts and their potential for reinvention of meaning over time.

¹² McFarlane, Colin. *Learning the City*, p 26

Chapter 5: My Personal Creative Design Methodology

Inspirations

Scarpa to Klee

My creative process was reinforced by the theories of Colin McFarlane (geographer), Carlo Scarpa (architect), and Paul Klee (artist). My process includes a measure of improvisation and intuition that aligns with McFarlane's definition of improvisation as a creative recasting of relations that result from everyday dwelling.¹³

Assemblage - Collage

Theory and Process

I began to think of assemblage as a theoretical idea as well as an art form and process. Assemblage can serve "as a conceptual tool for illuminating a critical geography of urban learning.¹⁴" Assemblage can therefore highlight new associations between spatialities and its component parts. In my personal creative process of collaging the choice of which things to collage is an important one and could later impact design. For example, the choice of what parameters to use could impact the resulting space type made when synthesized together in an assemblage. For these process collages I used imagery from places I've visited and studied which include the following types of environments: highly institutionalized corporate innovation environments, highly institutionalized higher education innovation

¹³ McFarlane, Colin. *Learning the City*, p 8

¹⁴ McFarlane, Colin. *Learning the City*, p 28

environments, informal settlements, streets in the United States, streets around the world, as well as Scarpa's Brion cemetery and Museum Castelvechio.

After finishing each collage, my process led me to scan these images in and begin to overlay each image on top of one another; to move and play with the adjacencies of these images to see if a possible sequence emerged. Inspired by both Hutchins and McFarlane, it became clear through my work that learning could be the softening of the boundary between individual and environment and that learning "is adaptive reorganization in a complex system."¹⁵ (e.g. see fig. 08 – 16)

Commons – Blurred Boundaries

I used the personal creative process of collage to analyze precedents. What is the meaning of common ground? Commons implies there is more than one stakeholder sharing a resource. Through collaging and manual overlay, I explored what boundary means and how boundaries are the variables dictating the nature of the common ground "in between."

Process Inspiring Product

What about the actual process of assemblage, of collaging things together could inspire how space is actually designed, made, created, used over time? I made the collages by first printing images I found intriguing that might lead to depth and rich character of spaces. All of the images I printed were from precedents I was studying or had traveled to, using a mixture of mostly my own photographs and other images of places/spaces. I also printed work that has a conceptual tie to the spaces I am trying to design.

¹⁵ mcfarlane15 – Hutchins

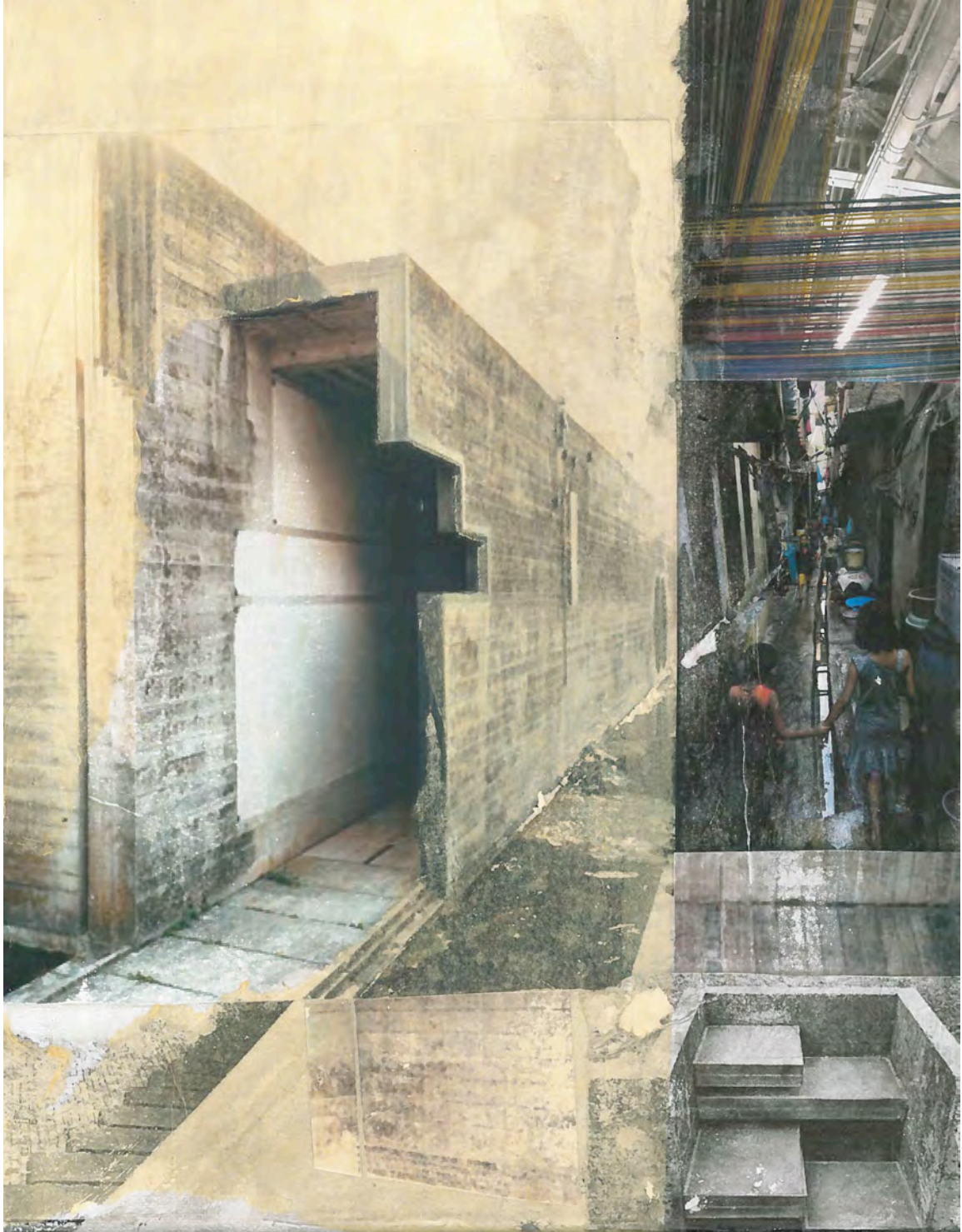
I then (e.g. see figure 07) cut up the printed images and make a pile for potential use. I then started to group images that had ingredients for spaces I was looking to design, groupings where I thought the component parts would work well together or I wanted to explore how they might relate. Making reference to the other, emerged as a strategy within my collages, by mixing elements, I became aware of similarities between the center and the periphery and how mutual opportunities might be revealed for each. The collages do that because they make us aware of things we weren't aware of before but then start to say what is lacking here and what can be connected? It's not so much specific site parameters but rather this a process of revealing an awareness in the collages.



Fig. 07 Step by Step Collage Process

Just as I am thinking of learning as both a process and a place, what the collages reveal through both the process of making them and product of looking at them is that there are connections between these environments and that institutionalized learning can in fact occur if we are able to reach people where they

are. Understanding the realities and complexities of how people learn the city and navigate their daily lives can inform how institutionalized learning can be adapted to new contexts. Furthermore, institutions can look to how informal learning networks function in order to be informed about how to expand access to more people in the future.



Title: Paths of Discovery

Medium: Collaged Photographs by Author, Matte Medium, Canvas

Fig. 08



Title: Common Ground

Medium: Collaged Photographs by Author, Matte Medium, Canvas

Fig. 09



Title: Pipeline Play + Juxtapositions
Medium: Collaged Photographs by Author, Matte Medium, Canvas + Cut images of Paul Klee's
Emacht, 1932
Fig. 10



Title: Productive Surface Play
Medium: Collaged Photographs by Author, Matte Medium, Canvas
Fig. 11

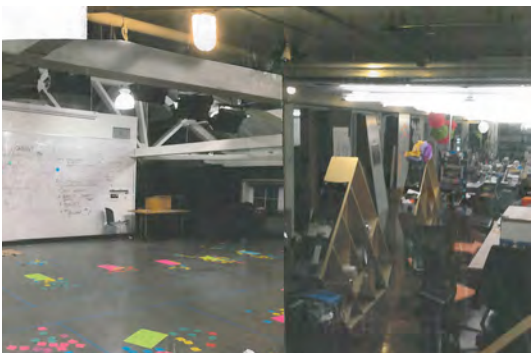


Fig. 12 and Fig. 13



Title: Emergent Learning
Medium: Collaged Photographs by Author, Matte Medium, Canvas
Fig. 14



Title: Event Space Along the Path
Medium: Collaged Photographs by Author, Matte Medium, Canvas
Fig. 15



Title: Pop up vs. Embedded Learning Spaces
Medium: Collaged Photographs by Author, Matte Medium, Canvas
Fig. 16

Chapter 6: Precedent Analysis

Objective

The following precedents represent examples I have studied and deconstructed in order to better understand the essential devices that exist and allow it to operate successfully. For each example I specify the meaning of success in each particular instance. To analyze is to separate a material or abstract entity into constituent parts or elements; to determine the elements or essential features of something after critical examination.¹⁶

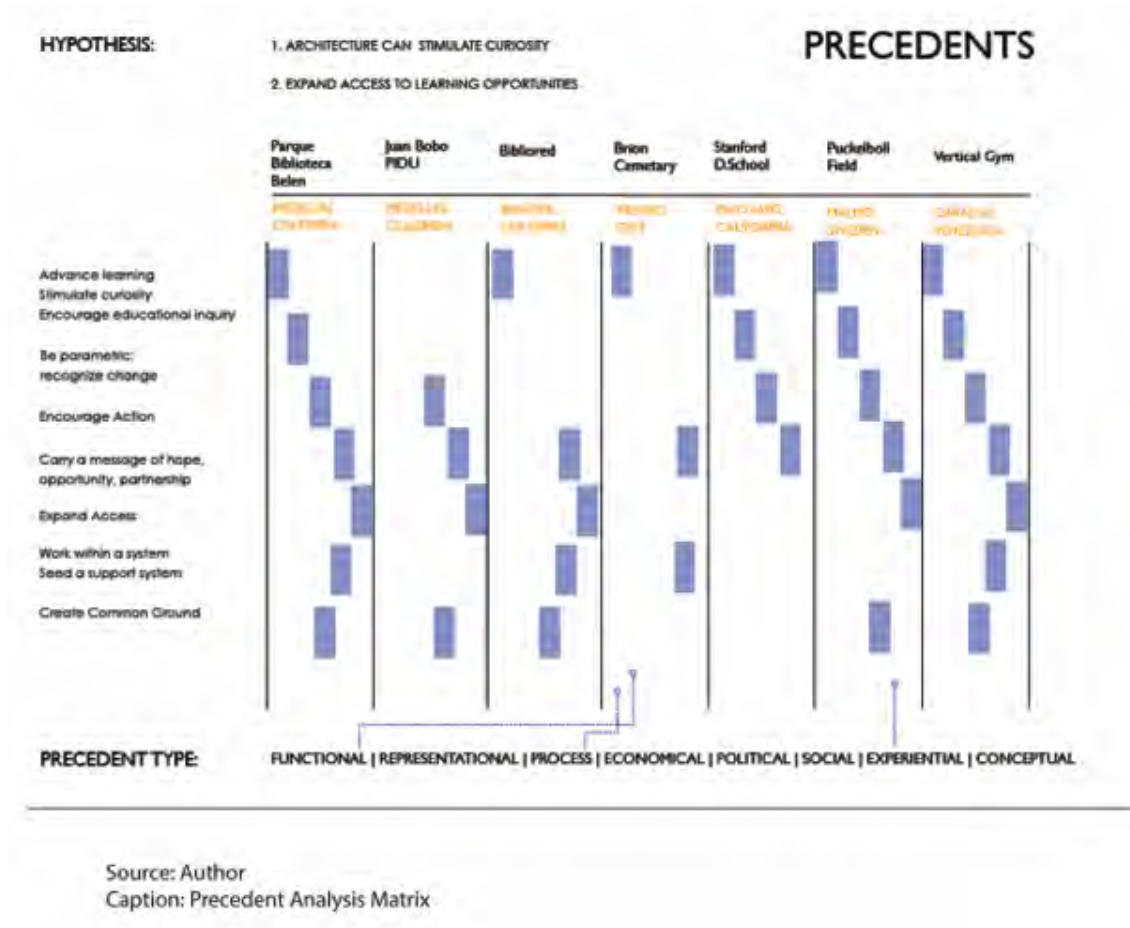


Fig. 17

¹⁶ <http://dictionary.reference.com/browse/analyze>

In each precedent example I therefore look to find either meaningful formal, cultural, functional, typological, or technological guidance through architectural analysis (e.g. see fig. 17 and fig. 18).

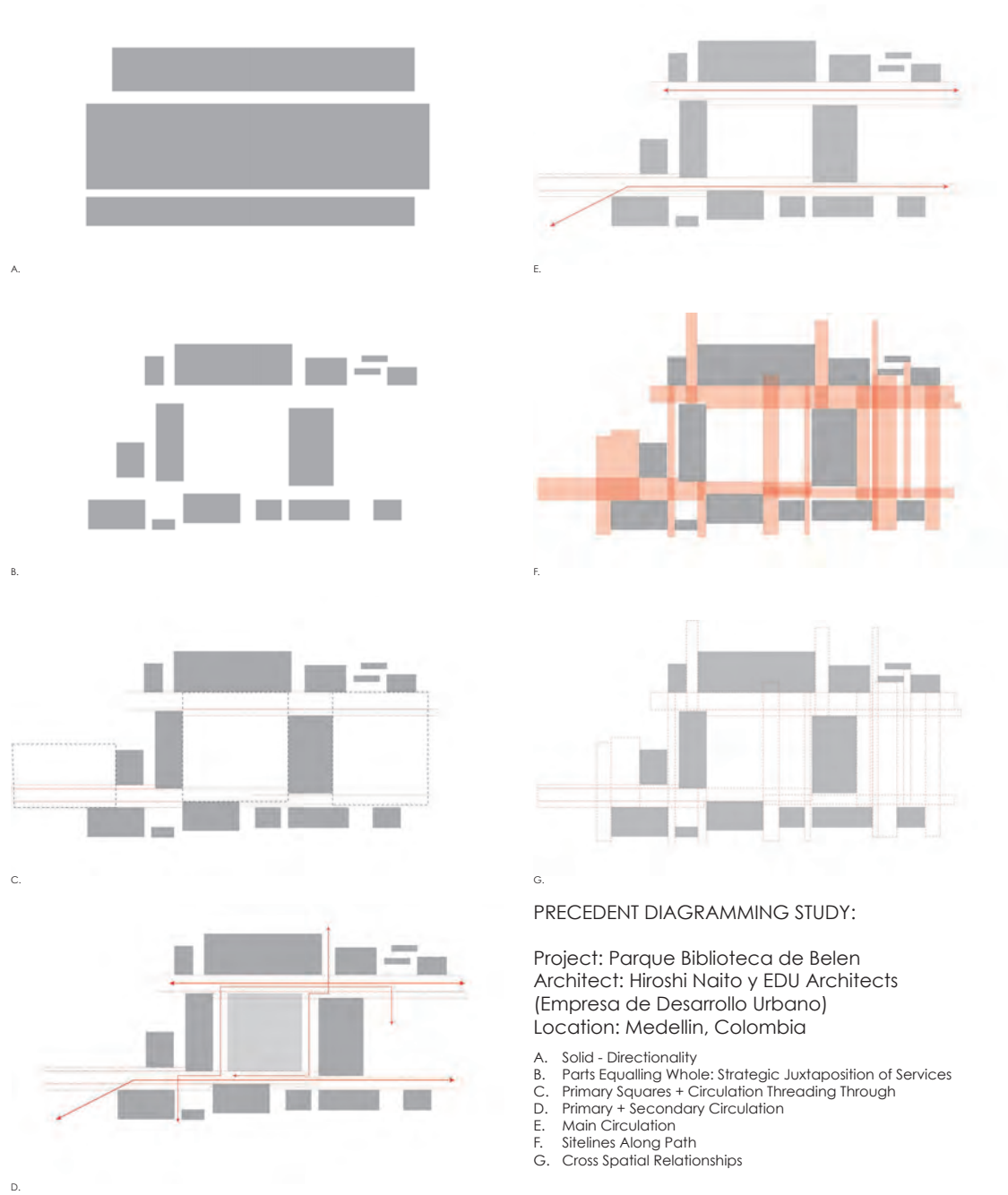


Fig. 18

Precedent Types

One goal of the site design for this thesis draws parallels to this description of Carlo Scarpa's design of Brion Cemetery: "the sequences of pavilions... which, avoiding all hierarchies, allow one to "wander" from one place to the next without any of the arrival points ever constituting a definitive goal."¹⁷ An additional list of precedent projects studied and the category through which they relate to the thesis project is below:

Urban Informality

Para Ti Community School, Vila Canoas, Rio de Janeiro, Brazil

Learning Spaces / Stimulate Curiosity/Informal

Diagrams *Spatium and extension* - diagram existing "successful" learning spaces and "what they make room for"(leach p 106)

Tata Kindergarten

Carlo Scarpa work

Institutional Learning / Stimulate Curiosity /Formal

Parque (and Biblioteca) Belen - Medellin

Tata Kindergarten

American Visionary Arts Museum, Baltimore

Common Ground

Malmö, Sweden – Uneven but Inclusive: A New Artistic and Urban Transformation Project in Sweden by Marcela Pizano

Policy Strategies

Medellin Laboratory

Eduardo Rojas – World Bank Guidelines

Participatory Budgeting – Juan Bobo, Medellin

Porto Alegre – Brazil (McFarlane)

Technological / Parametric

Ecological

Fresh Kills, NY

¹⁷ Scarpa, p.2

Experience Design Initiatives

UIF UMD Meet up Fall 2014, UMD College Park, MD
REFUNC workshop Spring 2014, UMD College Park, MD
Stanford UIF Meetup in Spring 2015], Palo Alto, CA
BLKSHP Meetup in Spring 2015, Baltimore, MD

A Physical and Digital Presencing

In today's world, giving presence to the other, and creating common ground means illuminating both the physical and the digital common ground. I believe the priority should be given to giving presence to the physical while being enhanced by giving presence to the digital. Mcfarlane affirms this order of operations as he states, "any notion of the progressive smart city must start with people and their existing knowledge and skills, rather than beginning with technology. This requires positioning information technology to 'empower and educate people.'"¹⁸ The location within which thesis design will be explored is part of an area that plans to become a "Smart City" and though the thesis does not focus on this topic, it does propose an alternative to how we might think of or define a "Smart City" able to handle future energy and technological demands. The design does this by echoing Mcfarlane's charge that, there needs to be "a shift in the balance of power between the use of technology by business, government and communities, to provide more opportunities for enhancing citizen participation and in local decision-making. In this sense, information technology (IT) could be used to facilitate a 'virtual public culture' (ibid).¹⁹ Harvey also reiterates the importance of having an "open-access knowledge commons."²⁰ This thesis considers who has access to each different common

¹⁸ Mcfarlane, 29

¹⁹ Mcfarlane, 29

²⁰Harvey, Rebel Cities, 72

resource, including the internet as a resource and service, who uses it, and who adds content to it. Crowd sourced content will grow in the future as people are able to claim a piece of it and contribute their perspective. Learning how to navigate this space in itself takes learning. How one might gain access to these learning opportunities related to navigating the digital commons is implicit in the resources provided in the final design, though design hierarchy is given to physical space design.

Urban Learning Commons

Common ground is negotiated territory requiring design parameters that guide its creation. One of the main variables dictating what common ground consists of is, the edges or boundaries dictating what common ground is “between.” Neil Leach, in his edited book, *Rethinking Architecture: a Reader in Cultural Theory*, states that “boundary” is from the Greek origin, *peras* and that “the boundary is that from which something begins its presencing.”²¹ This particular definition of boundary expands one’s notion about where common ground might begin and end. This idea supports the design intervention goal of have smaller scale, flexible, and networked supplemental interventions to the main central hub. The idea that common ground may not be just the physical realm but also the digital realm, supports this notion that the commons can begin its presencing, in other words, you could step within the boundary of the commons digitally, even before you physically arrive within the physical boundary delineating its space and place. The concept of the urban forum, a particular type of centralized urban learning environment, explicitly geared towards learning between

²¹ Leach

different actors is the type of space I will be designing. If such urban forums “are often sites of exclusion, managerialism and control, they also embody the historical potential of learning between constituencies.”²² “The cultural commons, Hardt and Negri write, “is dynamic, involving both the product of labor and the means of future production. This common is not only the earth we share but also the languages we create, the social practices we establish, the modes of sociality that define our relationships, and so forth.” These commons are built up over time, and are in principle open to all.”²³ The thesis site is designed in a way that allows for each element to function independently. The aggregate of resource elements, however, promotes access to the common resources, and capitalizes on the idea of being able to have legitimate peripheral participation or access to a resource one might not previously have been aware of, such as the Urban Learning Forum’s many programs. Vincent Ostrom calls this a polycentric order, describing it as one “in which ‘many elements are capable of making mutual adjustments ordering their relationship with one another within a general system of rule where each element acts with independence of other elements.”²⁴ The grouping together of these resources and the possibility of new events and activity being sponsored in this urban public space seeks to enhance participatory learning between different constituencies and develop a civic culture through an embodied set of practices assembled and reassembled through interactions.”²⁵

²² p 20 mcfarlane

²³ ” 72 rebel cities, david harvey

²⁴ Harvey, David. Rebel Cities, p 82

²⁵ Mcfarlane, Colin. Learning the City. P 94

Chapter 7: Relation of Design Process to Site and Final Design

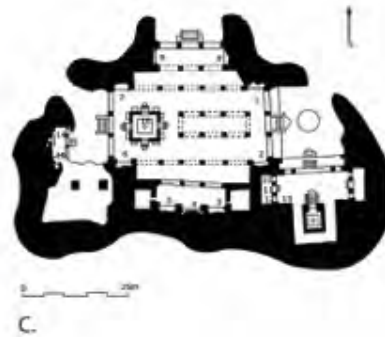
Constraints

In a profoundly dense environment such as Mumbai, the spaces designed use the following criteria as constraints:

1. Must work within existing context without removing buildings
2. Must not relocate people from their homes.
3. Minimize footprint
4. Maximize adaptation
5. Maximize access to resource(s)

In other spatial circumstances throughout the city, however, it might have been necessary to carve out space due to the lack of it. To counter this idea, there are also already spaces such as rail lines, water causeways or rivers that are “unclaimed” space that could be partially claimed by at least a phase of the design resolution as a way of allowing the communities over time to claim the interventions and carve space themselves to bring it into their communities on land. Mumbai, as a city has a history of both types of spatial moves, for example, the Caves of Elephanta, now a UNESCO World Heritage Site, are subtractive spaces, negative spaces carved from rock to

make space for Hindu and Buddhist religious worship and dedication (eg.see fig.19).



Source: <http://whc.unesco.org/en/list/244>

Caption:

The Elephanta Caves (natively known as Gharapurichi Leni) are a network of sculpted caves located on Elephanta Island, or Gharapuri (literally "the city of caves") in Mumbai Harbour, 10 kilometres (6.2 mi) to the east of the city of Mumbai. The island, located on an arm of the Arabian Sea, consists of two groups of caves—the first is a large group of five Hindu caves, the second, a smaller group of two Buddhist caves. The Hindu caves contain rock cut stone sculptures, representing the Shaiva Hindu sect, dedicated to the Lord Shiva. The rock cut architecture of the caves has been dated to between the 5th and 8th centuries. This cave was renovated in the 1970s after years of neglect, and was designated a UNESCO World Heritage Site in 1987 to preserve the artwork. It is currently maintained by the Archaeological Survey of India (ASI).

To counter this strategy, Mumbai also has a history of additive design, as seen in the land infill that occurred to connect the seven islands due to a need for more land.

Slum conditions in Mumbai are located on in-filled, low-lying land that is susceptible to flooding during the monsoon season.

The potential design solutions for this complex site relate to the design process I used to make each collage, for example, how do you start to selectively

remove, align, reorient or reinforce, in order to highlight or give presence to certain design agendas.

Chapter 8: Relation of Design Process to Site and Final Design

Parameters

The parameters for site selection for this thesis included the following factors: working in a densely populated area with resource scarcity, and working near an edge between formal and informal logics. This thesis explores a site within Mumbai, India that fits these parameters. I chose to work in India because it is projected to surpass China as the largest country, by population, by the year 2030. It therefore represents an extreme condition on the spectrum of locations within which the thesis idea could be tested. Mumbai is the most populous city within India with an estimated metropolitan population of 20.5 million people. 9 million residents within Mumbai, that is 62% of the 19 million people within the city limit reside in slums. By 2020, Mumbai will have the highest population density on earth.²⁶ (e.g. see fig 20)

²⁶ <http://worldpopulationreview.com/world-cities/mumbai-population>

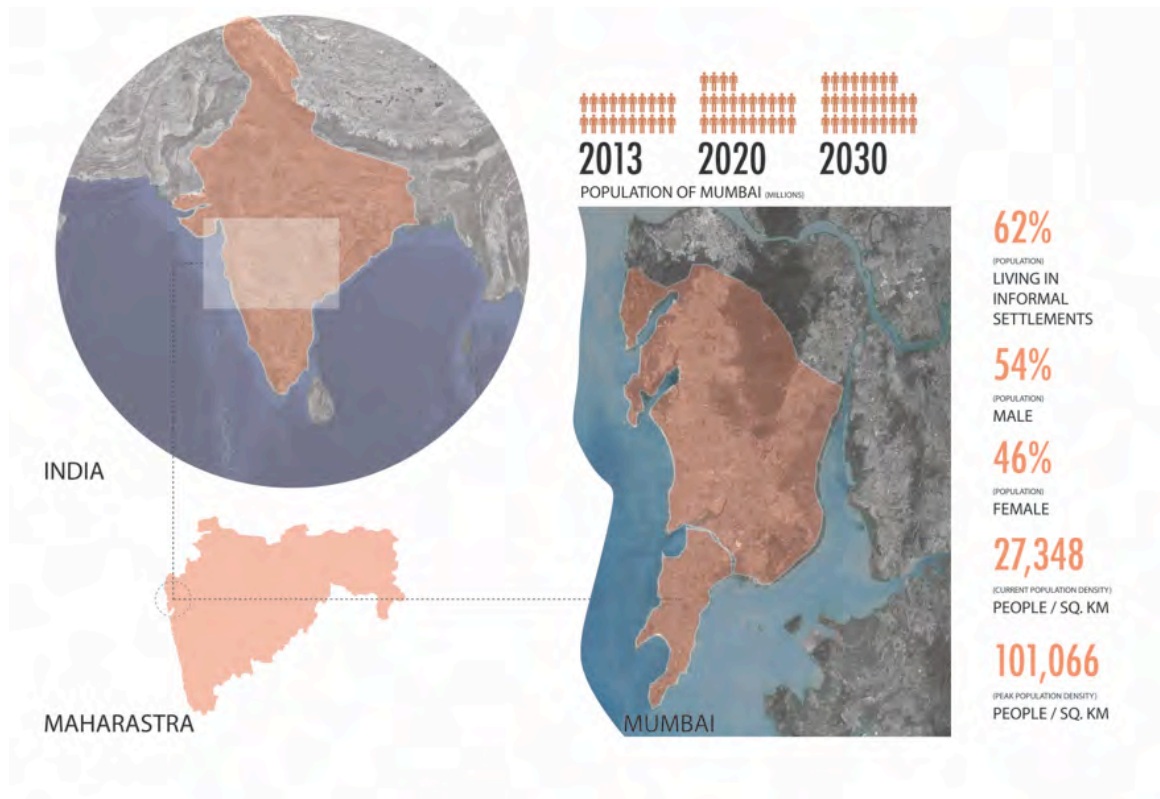


Fig. 20

Therefore the question becomes, how are people accessing basic resources, and services, including education? How might design interventions enable others to innovate around the challenge areas by first enabling marginalized populations to access education in the urban realm?

A Brief History of Mumbai's CBD Relocation

Mumbai, also known as Bombay, officially changed its name in 1995. Mumbai's original central business district (CBD) is located at Nariman Point and developed due to its proximity to Mumbai's main port in the southern most tip of the city (eg. see fig. 21) Because of this area's geographic confinement surrounded by water, The CBD is currently transitioning to being located in a newer, more central area in the city in order to ease traffic congestion in the southern tip of the city.

Business headquarters are instead migrating to Bandra Kurla Complex, in Mumbai's Western suburbs and situated on the edge of the thesis site (e.g. see fig. 22).

MMRDA was appointed as "Special Planning Authority" in charge of the future development of Bandra Kurla Complex in 1977. Meanwhile the new growth center is expected to support upwards of 2,000,000 jobs within the area.

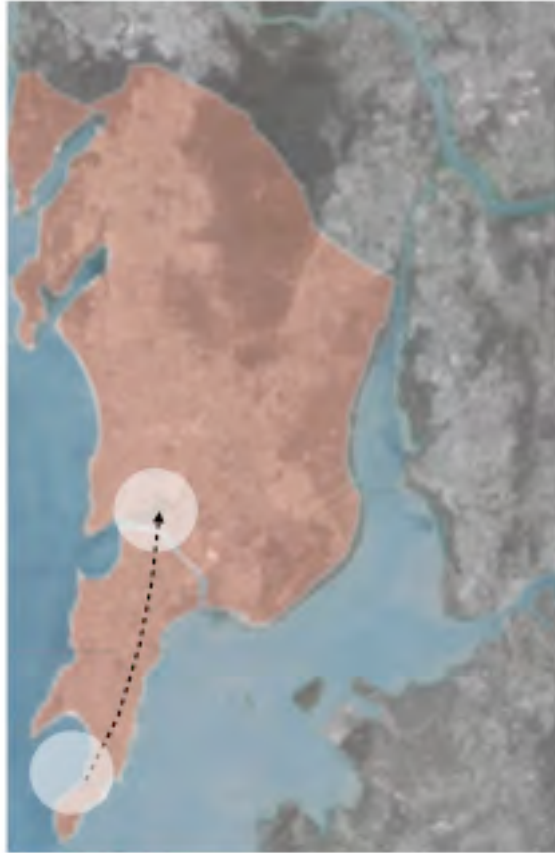


Fig. 21

Chapter 9: Fieldwork Analysis and Site Background



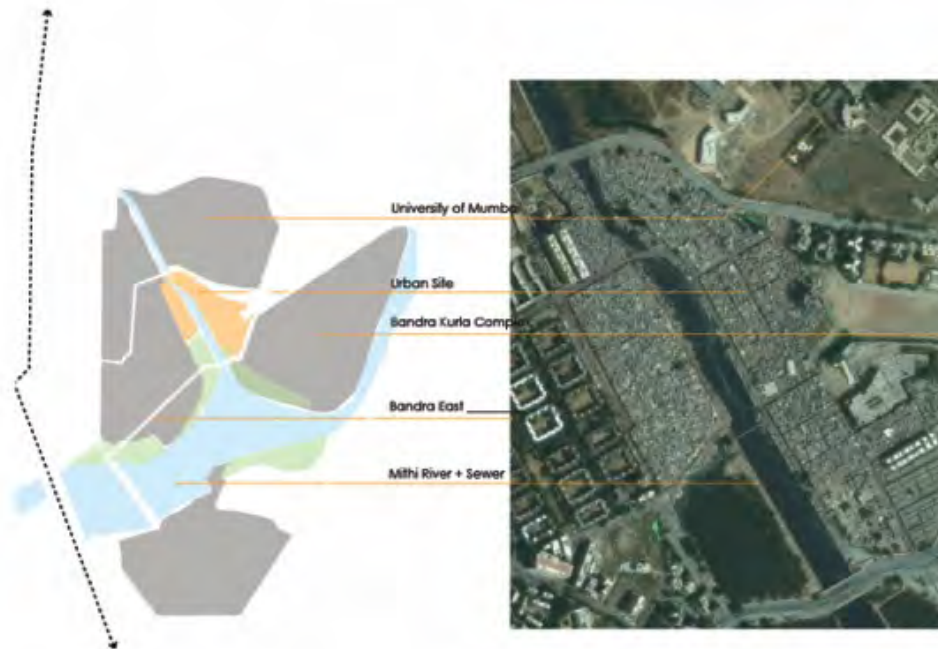
Source: ARC GIS - Author
Caption: Metropolitan Mumbai City Limits



- University of Mumbai
- Urban Site
- Bandra Kurla Complex
- Bandra East
- Mithi River + Sewer
- Dharavi - Urban Village(s)

Source: ARCGIS - Author
Caption: Bharat Nagar, near Bandra Kurla Complex and University of Mumbai in Bandra East, located within the Mumbai Suburban District.

Fig. 22



Source: Author
Caption: Site Context

Fig. 23

Water is typically thought of as an amenity in an urban context, while developing access to an amenity is a strategy used for smart development. The Mithi River in Mumbai, however, runs through the site I am investigating and serves as both a river and a sewer. It is not currently considered an “amenity” offering the full potential value it might have for residents. Rather the site is residual, low lying land, susceptible to flooding during monsoon season and deemed ineligible for building. Urban villagers have built over 30,000 hutments, informally claiming this land as a settlement. A spectrum of permanence exists with regards to the buildings built on the site, therefore creating a degree of ambiguity regarding future development. A portion of the residents with homes built on this land actually pay a rent fee to MMRDA (Mumbai Metropolitan Regional Development Authority who is seeking to re-develop the land under a future plan. The land is officially zoned as industrial even though it is occupied and used as an informal residential settlement with light

commercial. Regardless, MMRDA's authority is conditional because developers must have the full consent of those residents who have lived on the land prior to the year 2000 in order to demolish their home for the sake of future development. The thesis design takes into account the existing tensions of the site while proposing a respectful and minimal intervention that aims to support the site's current uses and alignment as an edge between the residential settlement of Bharat Nagar and Bandra Kurla Complexes' commercial settlement. This thesis suggests several locations that could be part of a network of interventions and meanwhile designs a specific site as a hub for activity within this network (e.g. see Fig 24). The main intervention design was located by using the main flows of the site and reinforcing them. For example, the river, running North-South is a major orienting element. A promenade has informally developed along it, due to its use as a way finding device. The height of water towers also aid in way finding within the dense fabric of the informal settlement.



Fig. 24

During fieldwork, I mapped parts of the site that did not show up in official city records and observed existing activity and uses of existing spaces (e.g. see Fig 25). The thesis aims to design a social space, defined as “a dynamic space; its production continues over time and is not fixed to a single moment of completion.”²⁷ I specifically noted where people gather at different times of day, where existing basic resources are located and how space is used for domestic or commercial purposes. Being on site allowed me to formulate and adjust questions I had about the area and test those questions using observation. I also engaged citizen experts in order to exchange mutual knowledge and specifically to learn about their stories and experiences in an effort to use human centered design techniques when designing the thesis intervention. Mutual knowledge, a concept used in Spatial Agency, is founded in exchange, in negotiation, out of hunch, out of intuition.”²⁸



Fig. 25

²⁷ Spatial Agency, p 29

²⁸ Spatial Agency, p 32

ACTIVITIES - SPACE AND TIME (CURRENT PATTERNS VS. PROPOSED PROGRAMMING)

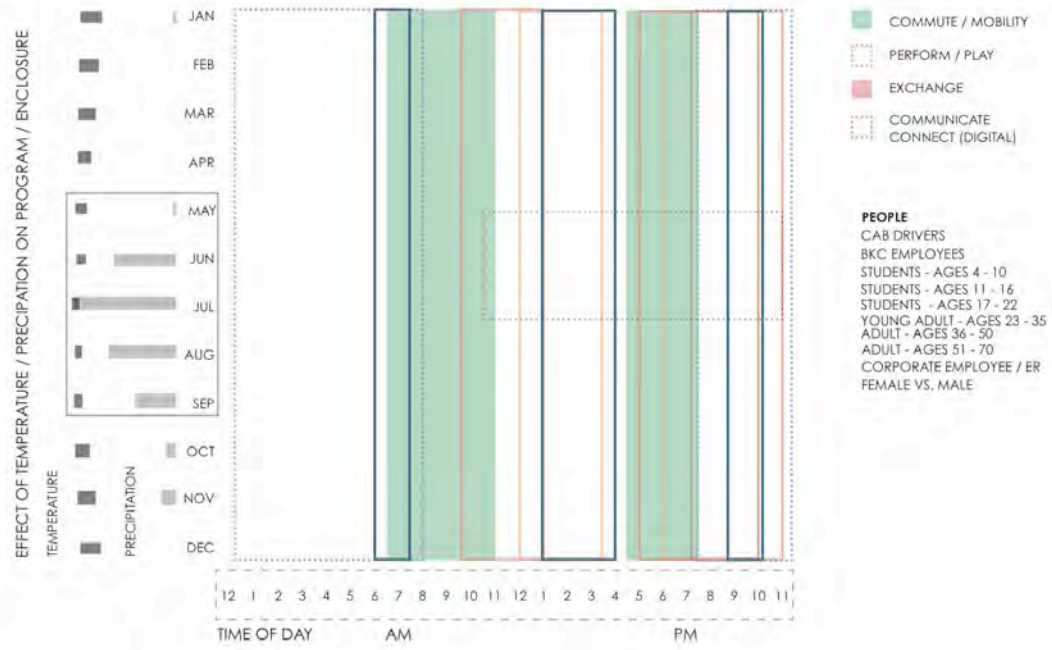


Fig. 26

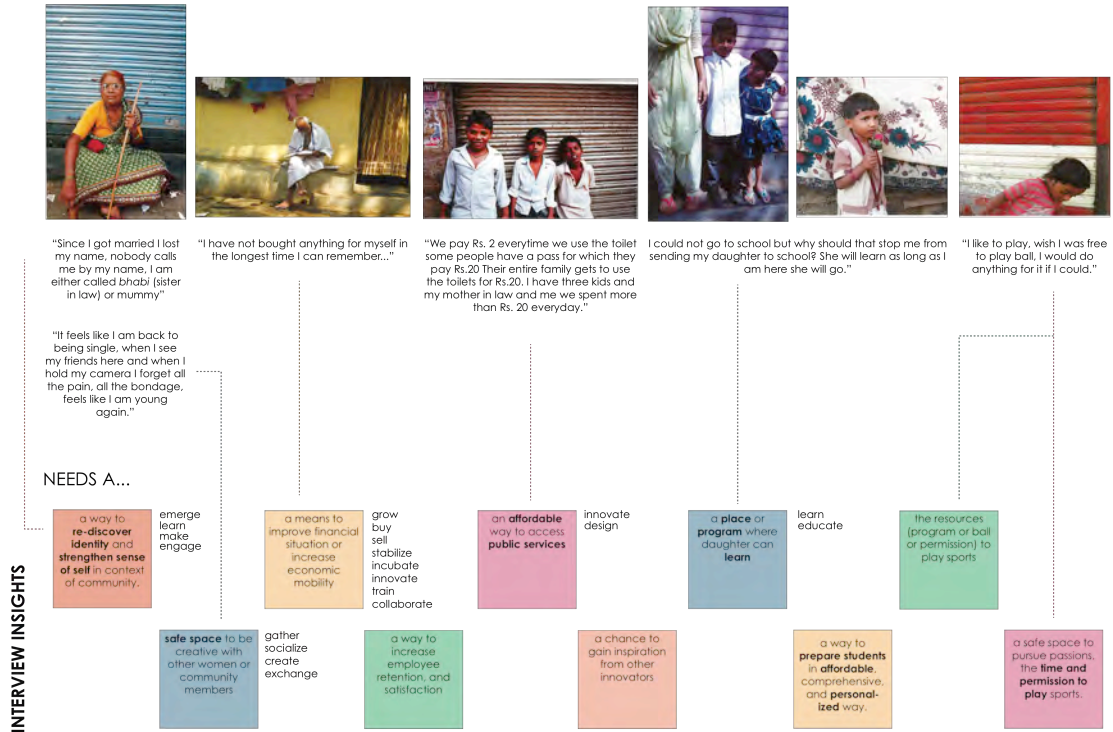


Fig. 27

“Mutual knowledge means abandoning the hierarchies embedded in most professional relationships...mutual knowledge is about the practical deployment of knowledge within the everyday.” – Spatial Agency²⁹

Interviews with Citizen Experts

While engaging with community members, I gathered insights and recorded stories that directly influenced the design of the thesis intervention. From these stories, I distilled each interview by defining each interviewee’s need based on their conversations and feedback. These individuals and their defined needs became the inspiration and thread for my thesis project. It also was a way for me to evaluate the design throughout the process by using the needs definition as a comparison tool to ensure the design met those targeted needs.

²⁹ Spatial Agency, p 32

From these interviews I then created composite character profiles which represented either specific people with whom I spoke or a group of similar insights compiled into one representative character profile (eg. see Fig 28)

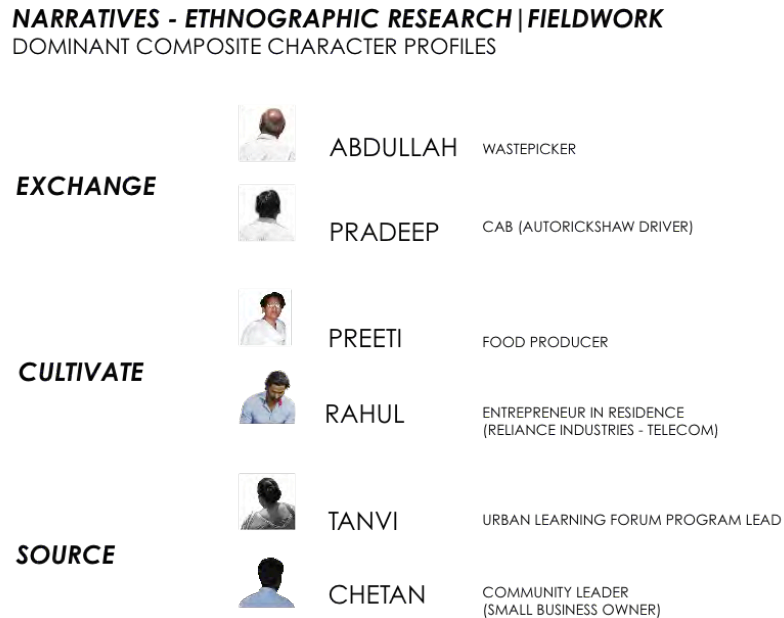


Fig. 28

Precedent: Barcelona Logistics Zone - Stan Allen

Chapter 10: Strategic Interventions – Design Resolutions

Resulting Architecture(s)

“The bridge swings over the stream ‘with ease and power’. It does not just connect banks that are already there. The banks emerge as banks only as the bridge crosses the stream. The bridge designedly causes them to lie across from each other. One side is set off against the other by the bridge. Nor do the banks stretch along the stream as indifferent border strips of the dry land. With the banks, the bridge brings to the stream the one and the other expanse of the landscape lying behind them. It brings stream and bank and land into each other’s neighborhood. The bridge gathers

*the earth as landscape around the stream.*³⁰ - (Martin Heidegger) *Location, Space, and Place*

Heidegger discusses the bridge as a design element that brings two sides that normally would not connect, to a meeting point. The creation of common ground is akin to this passage and uses design to create a field condition where mutual engagement between informal and formal logics and learning is given space.

The Human Scale

The design also considers the idea of an anchor vs. a network of nodes, how it is necessary to have a spectrum, with the design employing two extremes, highly flexible interventions (nodes or networks) as well as highly durable interventions (anchors).

Program

Colin McFarlane notes “Urban Learning Forums entail the possibility of different actors and knowledges within the city coming together to participate, in the context of unequal power relations, in collective learning. If managed carefully to facilitate sustained intensity, openness, and quality, these learning forums take urban planning in uncertain directions and increase the possibility of more socially just urbanism.”³¹

The entity, which will maintain the public space, designed in the thesis project is an NGO named Urban Learning Forum. Its mission is as follows: Urban Learning Forum is a public private partnership that creates common ground through space and

³⁰ Leach, Neil. *Rethinking Architecture: A Reader in Cultural Theory*. New York: Routledge, 1997. Print. Chapter on Martin Heidegger (Building Thinking, Dwelling Excerpt) p 104

³¹ McFarlane, p 113

programming to bring creatives together in an effort to enable communities to adapt, transform, and thrive in changing urban conditions. Urban Learning Forum promotes resilience and provides space for creativity to thrive with three main components.

ULF play study: recreation and classes

ULF start up: support creative entrepreneurs with space, network, programs, and mentorship

ULF design net: urban community initiatives and programming, local and global network, design, and creativity processes

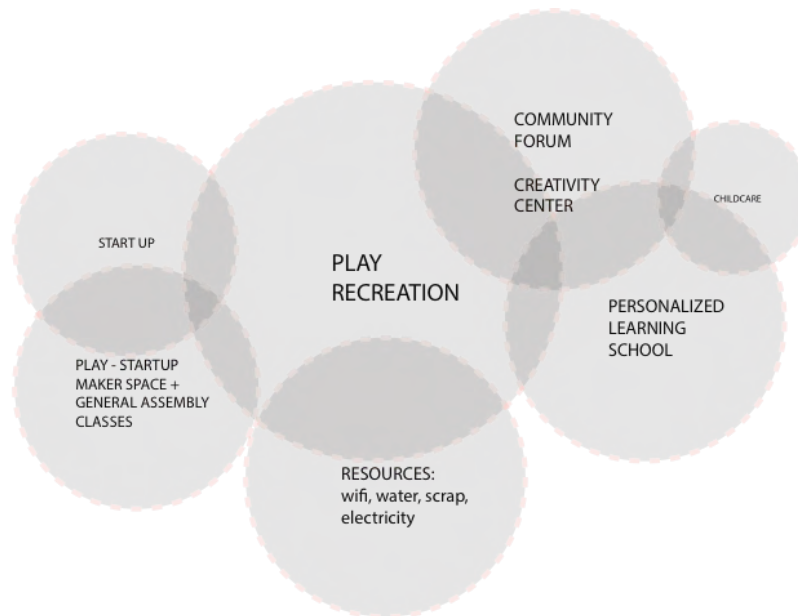


Fig. 29

Schematics

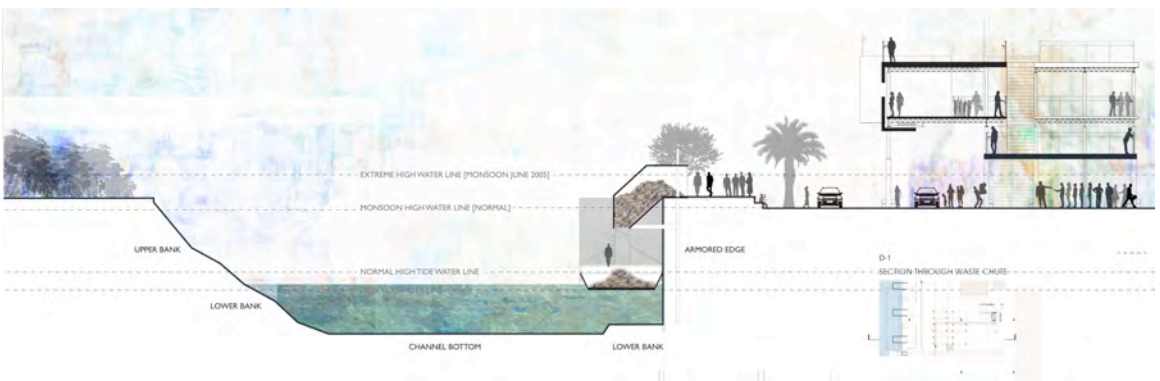
The general design presented for the thesis is: Central hub consisting of strategically juxtaposed infrastructures plus a path of network connected elements expanding access and visibility to many. A few of the questions asked as a way to evaluate design decisions throughout the process consist of: Does the design take a stance on ‘spatial judgment’?, does the design stem from the exchange of ‘mutual knowledge’ and does the design engage “critical awareness”?³²

Core theme 01: EXCHANGE

³² Awan, Nishat. Spatial Agency. P. 33



Fig. 30 (L), 31 (Below)



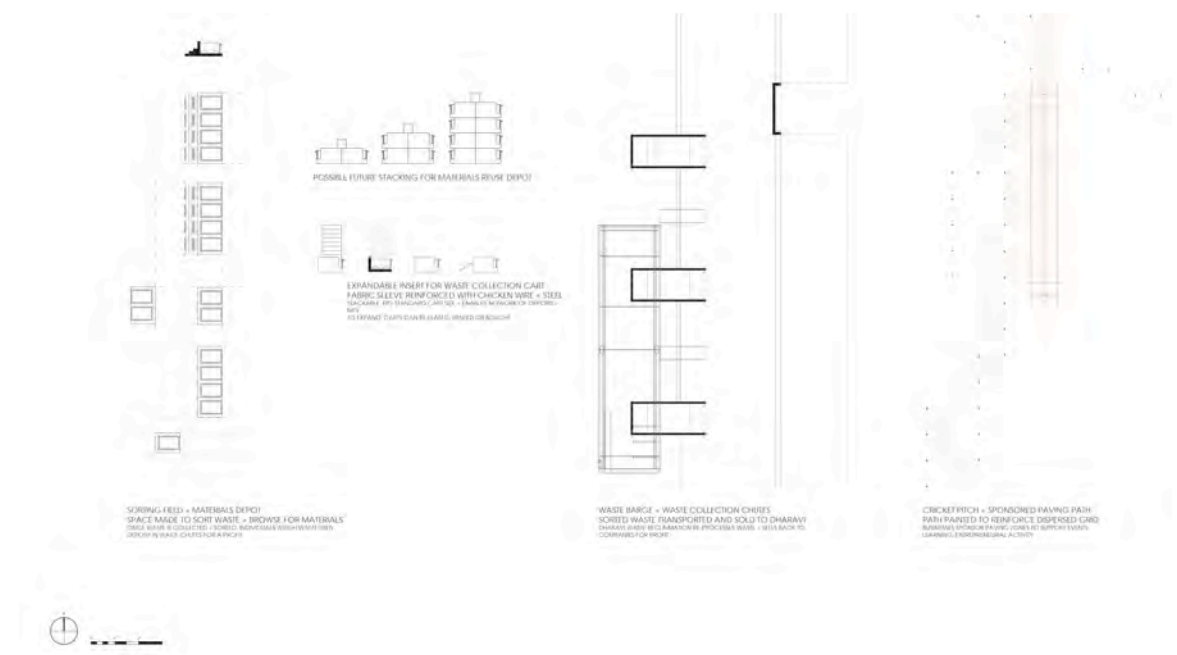


Fig. 32

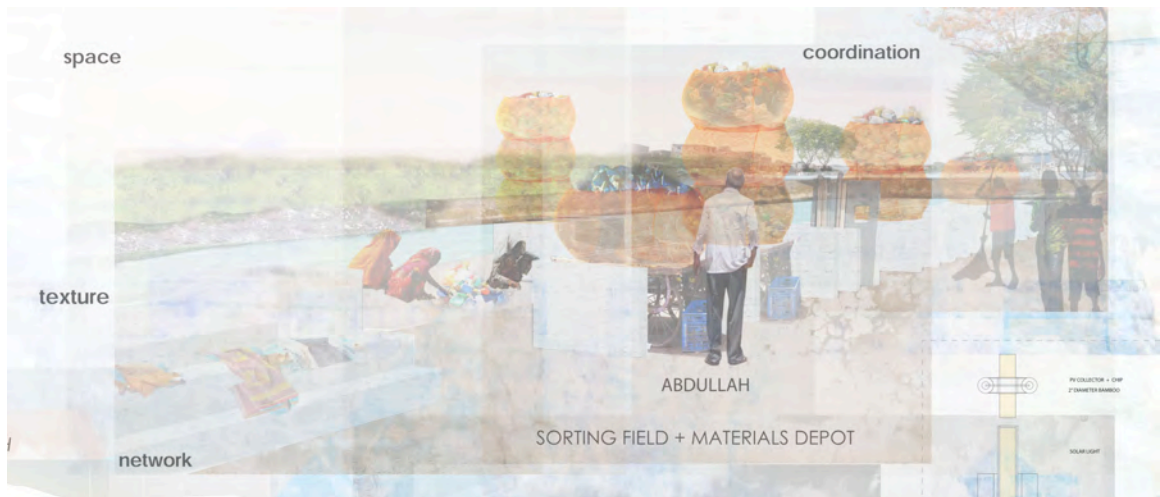


Fig. 33



Fig. 34

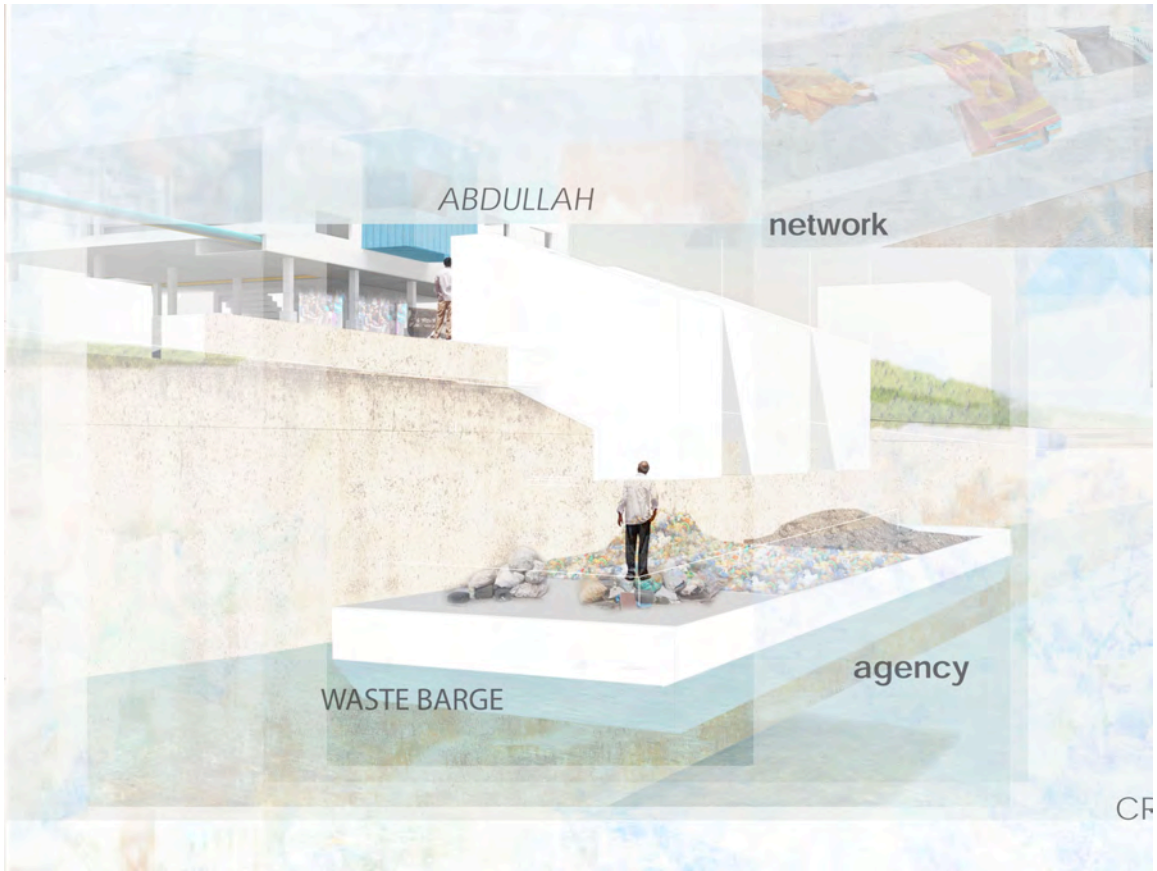


Fig. 35

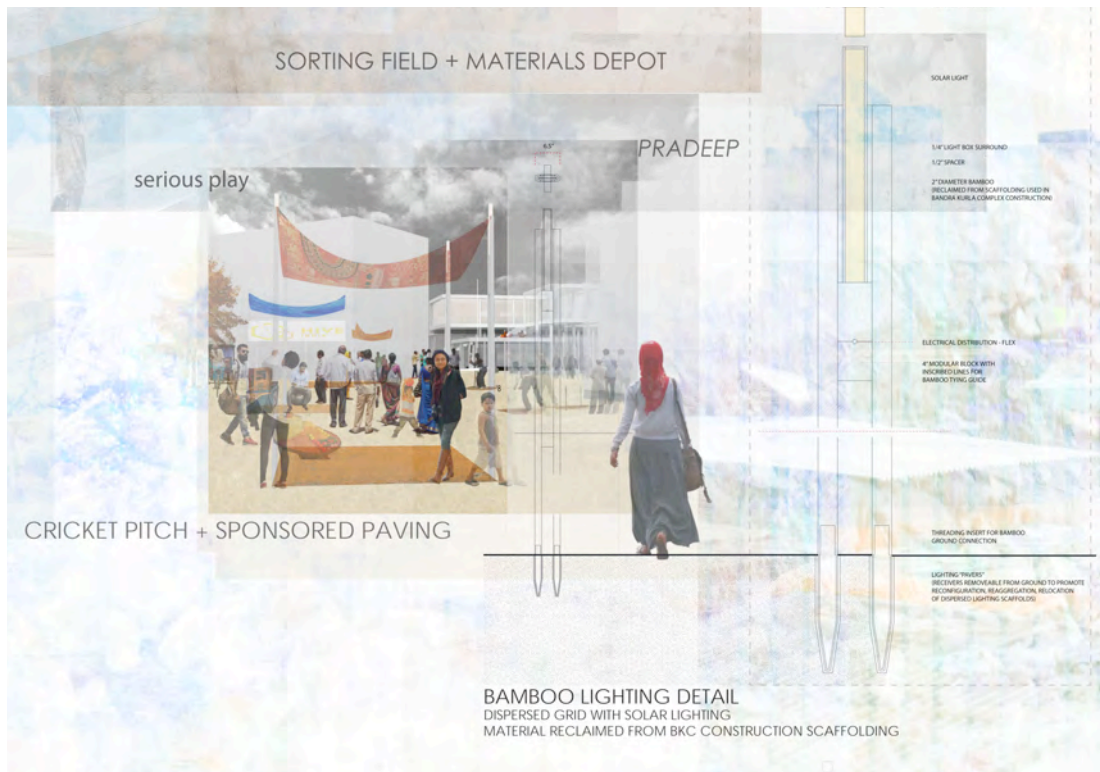


Fig. 36

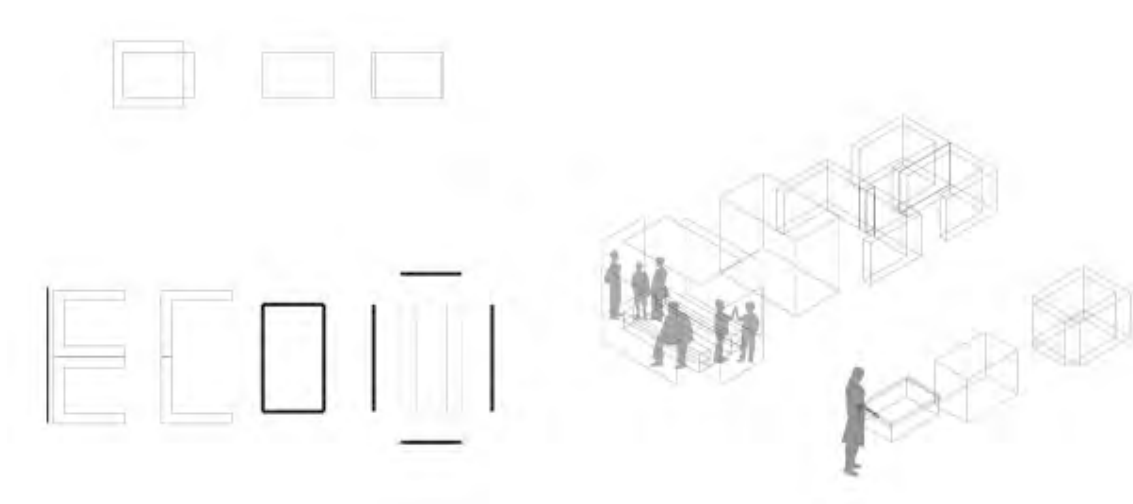


Fig. 37

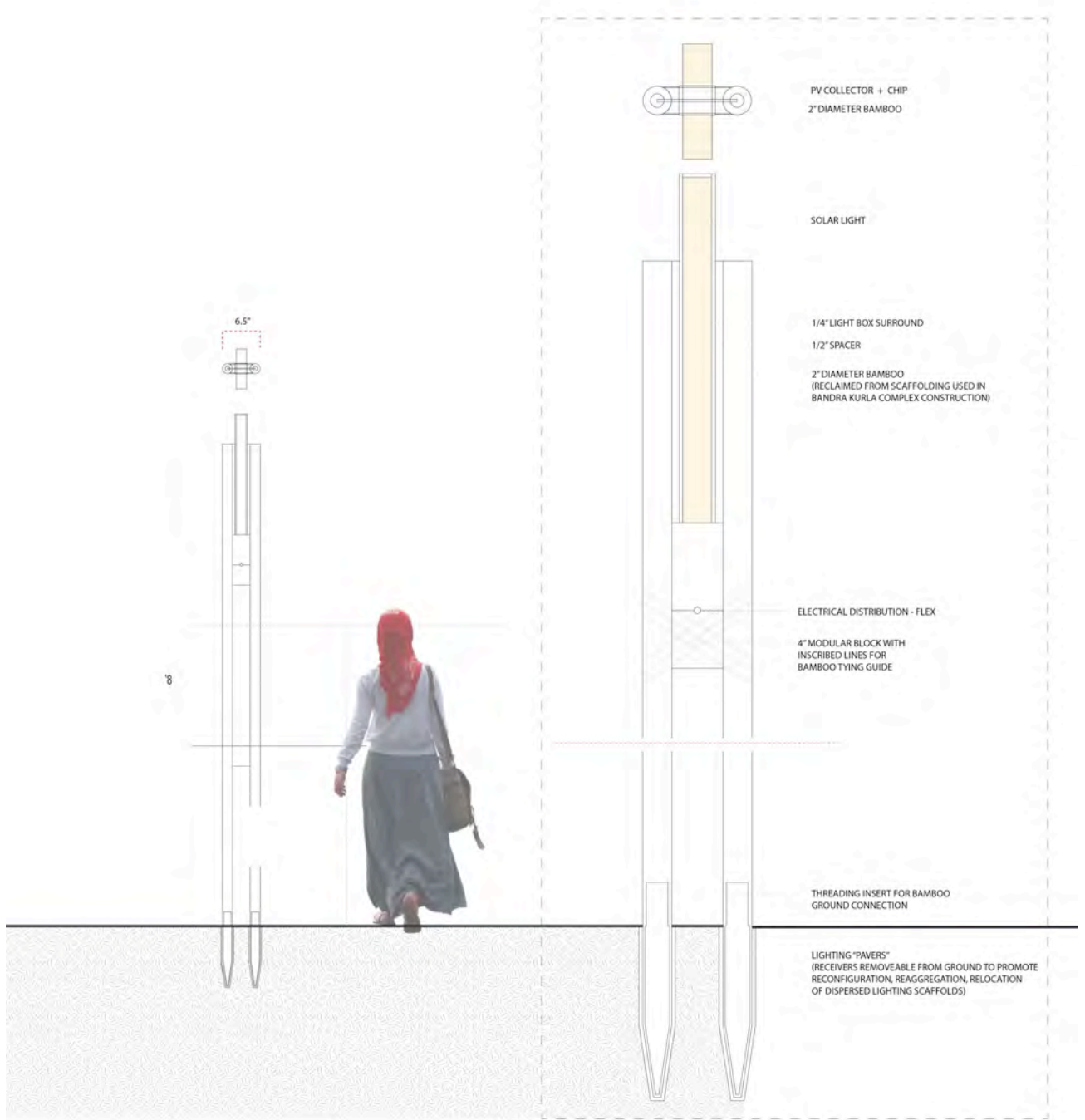


Fig. 38

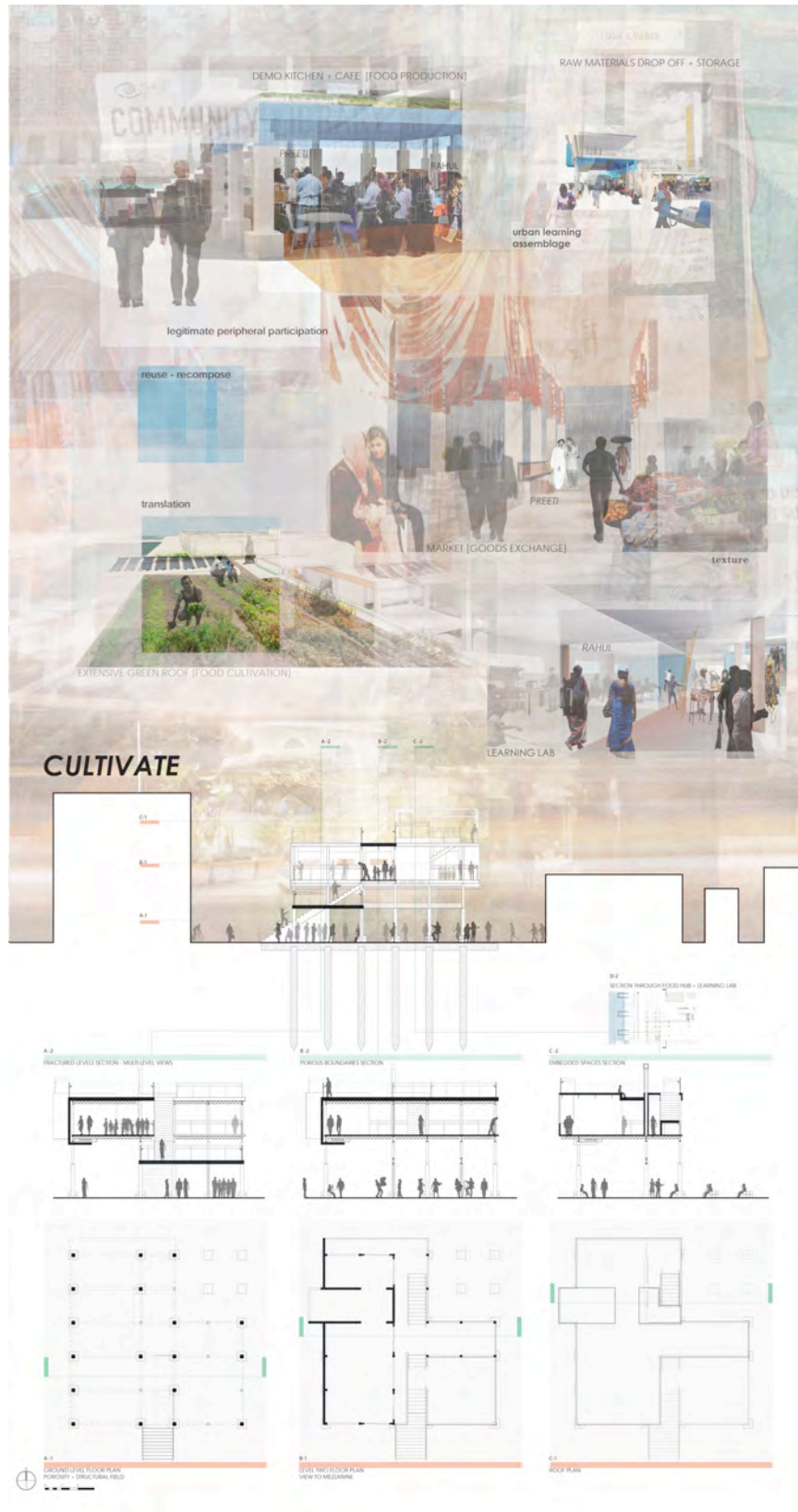


Fig. 39

Core theme 02: CULTIVATE

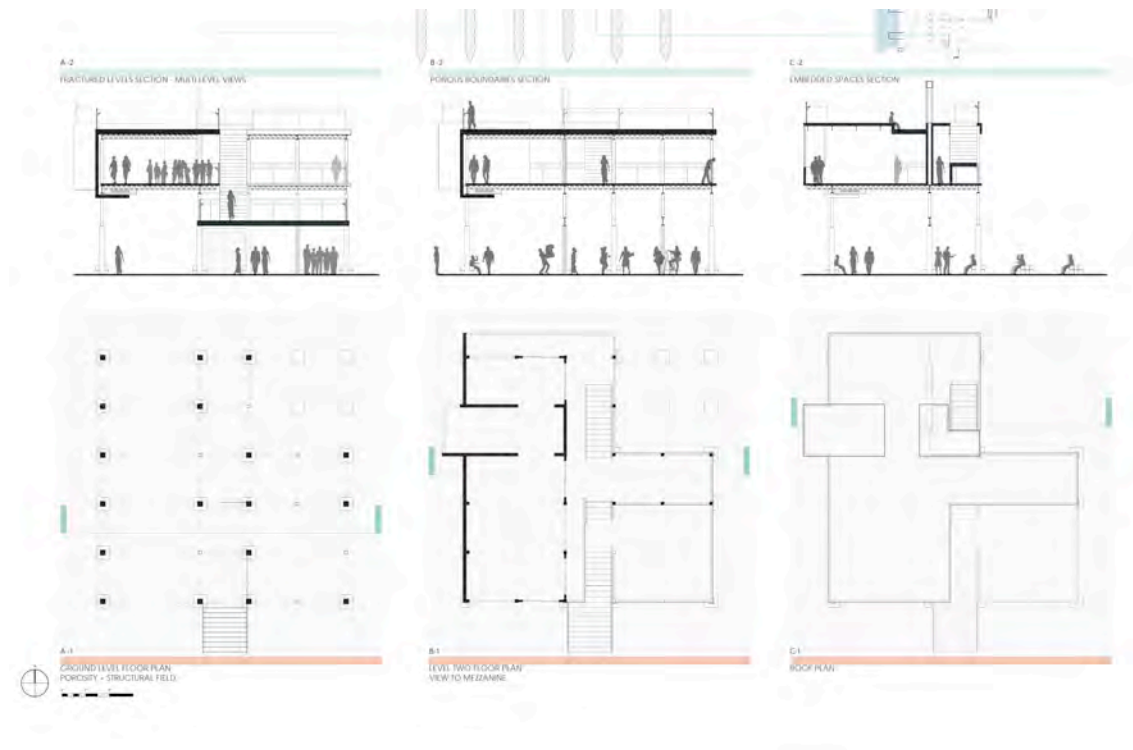


Fig. 40

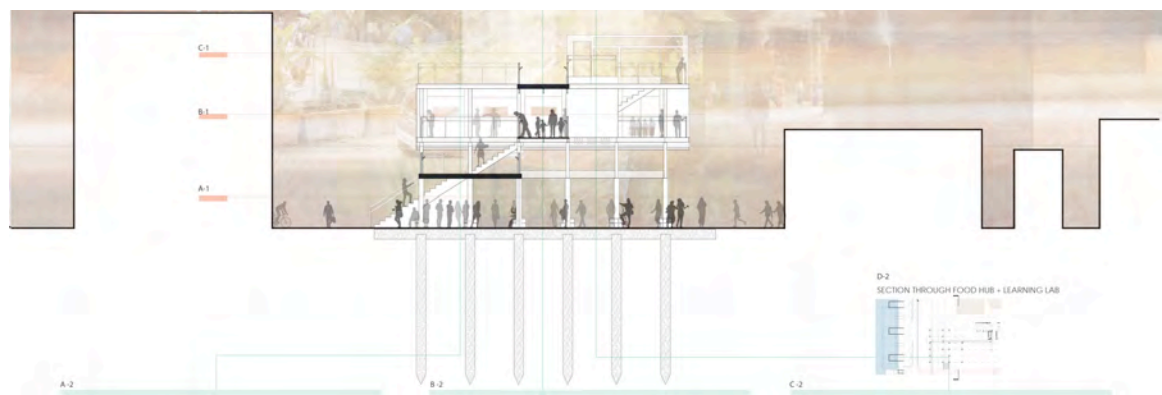


Fig. 41



Fig. 42



Fig. 43



Fig. 44



Fig. 45



Fig. 46

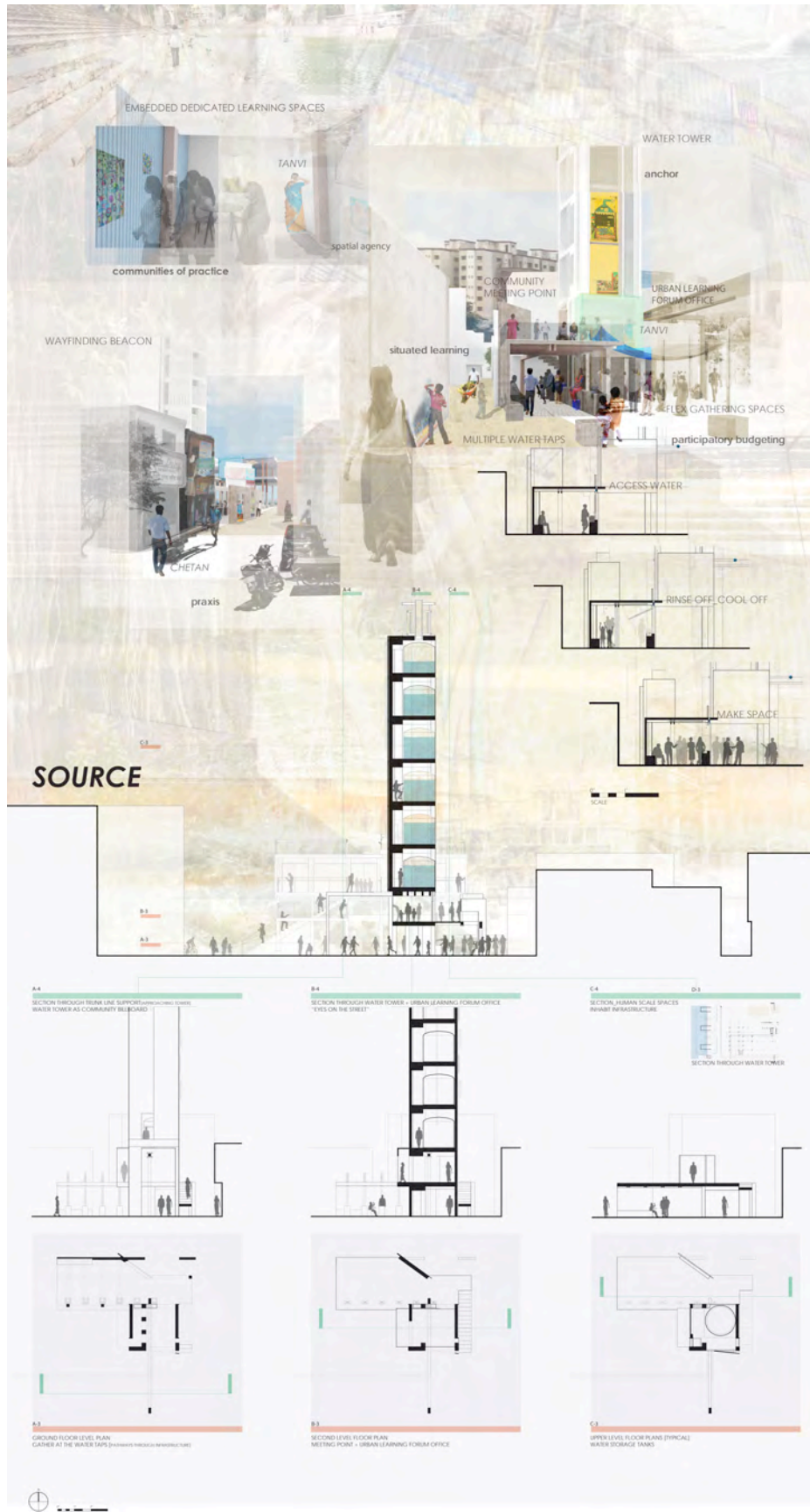


Fig. 47

Core Theme03 SOURCE:

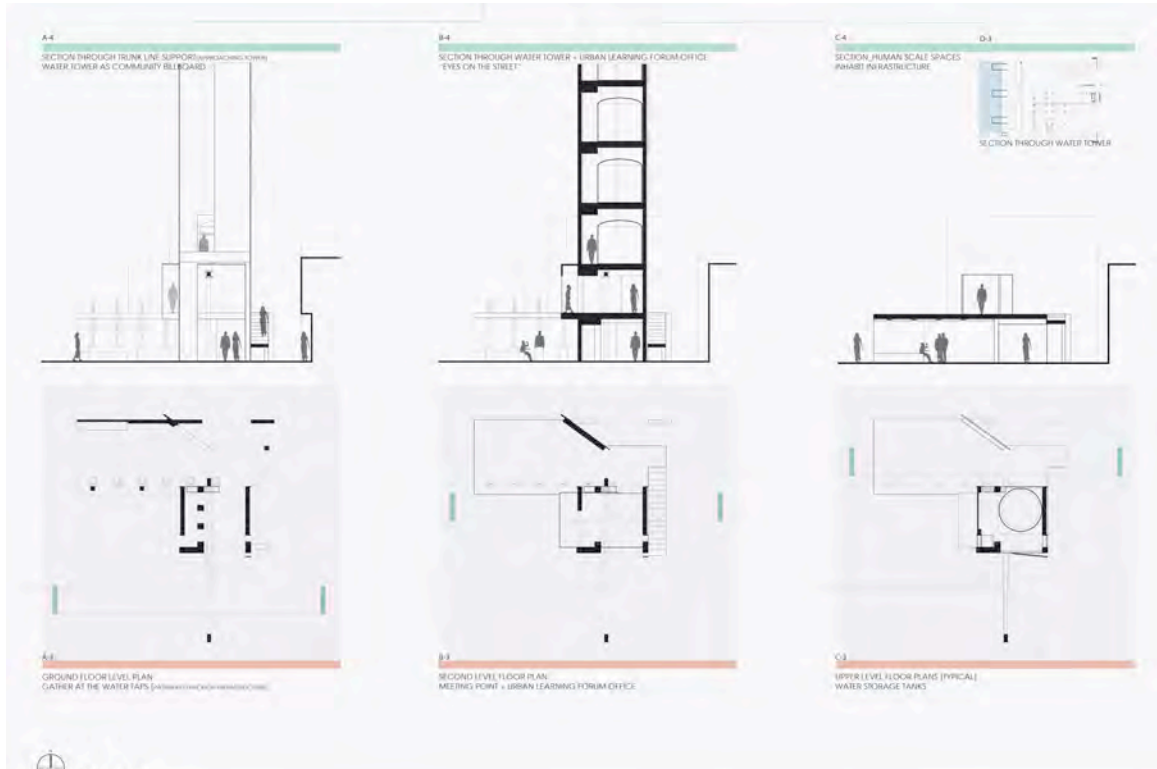


Fig. 48

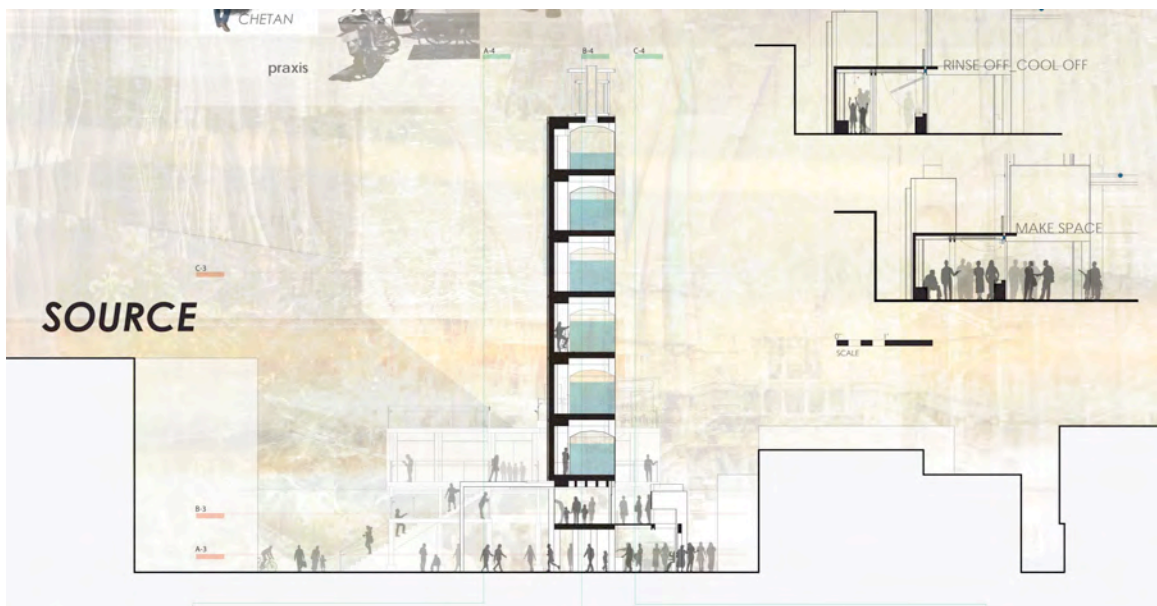


Fig. 49



Fig. 50



Fig.51



Fig. 52

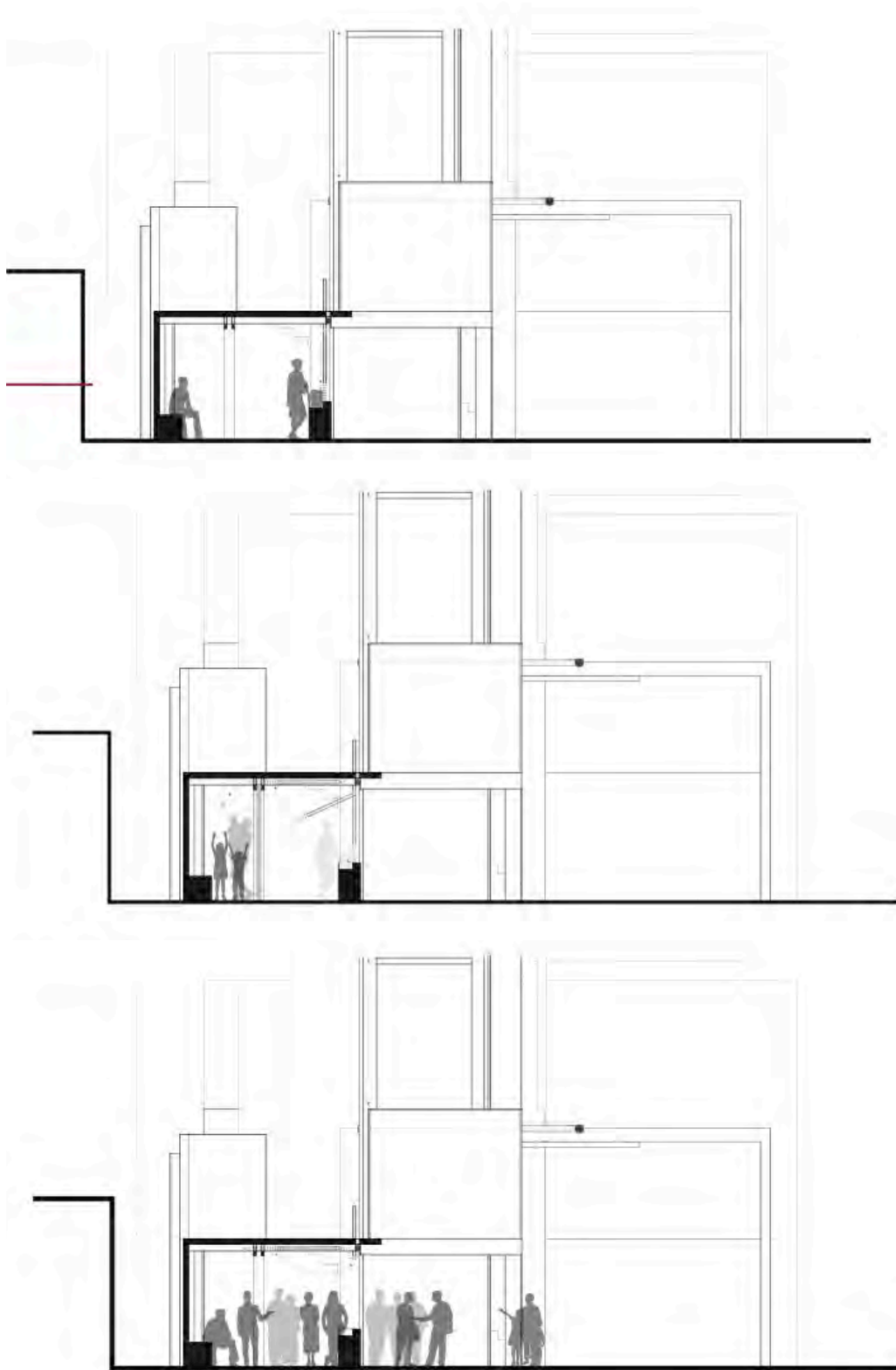


Fig. 53 Access Water at Tap (Top), Rinse off, Cool off (middle), Gather (Bottom)

Make Space

Within the design of each of these three main intervention categories, Exchange, Cultivate, and Source, the user's experience is likely going to blur across these boundaries and blend between activity spaces. In reality, the user's space is "lived – not represented (or conceived). When compared with the abstract space of experts (architects, urbanists, planners), the space of the everyday activities of users is a concrete one, which is to say, subjective."³³ The urban learning forum therefore makes space the "double movement of laypersons and specialists from historically segregated spaces, and can become an 'apparatus of education' (Callon et al. 2009:35)³⁴ This apparatus of education would also be considered an open system which results in spontaneous activity and latent learning by encouraging exploratory drive. For example, "organisms are not passive masses of software reacting to environment, but 'open systems', feeding on 'negative entropy', engaged in spontaneous activities on all levels, and that animals are capable of 'latent learning' in the absence of tangible rewards, motivated solely by their exploratory drive..." is a fascinating and empowering fact.³⁵

Genesis, Sponsorship, and Enterprise

In the corporate world today, there is a trend towards trying to understand informal networks. Companies look at this to advance growth and innovation and could provide a possible incentive for various formal actors to want to engage and create a common ground which includes informal actors: "the physicist Bohn (1981)

³³ Leach, Neil. *Rethinking Architecture*, p 145 from **Henri Lefebvre, p. 138**, "The Production of Space

³⁴ McFarlane, Colin. *Learning the City*, p 97

³⁵ Koestler, *The Act of Creation*, p498

has said: ‘Our whole approach to life is evidently full of presupposition which deeply affects not only our actions, but also our thoughts, feelings, urges, desires, motivations, the contents of the will, and indeed, our general way of experiencing almost everything.’ [p381]”³⁶ Ultimately, an argument for creating common ground between and learning from formal and informal settings relates to the idea that the success of translocal “urban learning experiments depends upon a commitment to learning through translation – ie. through difference rather than in spite of it –rather than simply through an attempt to learn through cities that appear similar.”³⁷

Chapter 11: Reflections, Goals, and Conclusion

Evaluation of Effectiveness of Meeting Goals

The means through which a successful thesis can be evaluated is through the following steps: first by evaluating the accuracy of the hypothesis through stakeholder research, second by establishing parameters based on qualitative insight interpretation and testing feedback and lastly by quantitatively evaluating the success of reaching design parameters.

Conclusion – So What

Local Implications

The design alleviates issues with the existing context and enhances access to basic resources such as potable water, electricity, composting, wifi, food cultivation, shelter from the monsoon and learning spaces. The local implications of the design of the

³⁶ Weissman, Harold H. *Serious Play: Creativity and Innovation in Social Work*. Silver Spring, MD: National Association of Social Workers, 1990. Print. p 43

³⁷ Mcfarlane, Colin. *Learning the City*. P93

waste edge, the food and learning hub and the water tower, framing the urban public space will allow for enough of an identity in place for the community to be drawn to the space, while maintaining the freedom and the design cues for actors to manipulate the space for diverse needs in the future. Overall this series of interventions shows the scale and lighter touch that could be implemented in or expanded to other parts of the city as an example of a network of urban learning forums catalyzing change.

Cultural Implications

Cultural implications of bridging resource scarce and resource abundant innovation or learning environments could mean that the tension between residents of the informal settlement, members of the formal educational institutions (university of Mumbai and other international schools) and corporate employees may have an opportunity to learn through difference and potentially diffuse tensions. The Food and Learning hub with its embedded learning spaces also provides gender safe spaces for exploration of new ideas and to promote a sense of discovery of self within context of the community.

Economic Implications

Mumbai is the economic engine of India and Bandra Kurla Complex is becoming the new business hub. There is a big push to bring more innovation or innovative businesses to Mumbai. Within Mumbai, Bandra Kurla complex is planned and is well underway to becoming the major economic and corporate hub within the city. It was first planned as an alternative to the central business district near Nariman Point, in Colaba, Mumbai in order to alleviate congestion in that area of the city. Bandra Kurla complex is now situated at the new geographical center of Mumbai with quick

access to the airport and train lines. What if this site were a precedent for how business or institutional formal centers interact with adjacent informal settlements or agglomerations? In conclusion, major takeaways from this thesis design include,

1. Where we position the “commons” (or resources/services) for the public plays an integral role in designing for access
2. This design of creating a scaffold within which learning can occur, surrounded by “anchors” which may draw someone to a place, could be a model for how Higher educational institutions design innovation spaces in the future.
3. Design for current intent while thinking of maximizing flexibility and adaption for future needs.

Glossary

Boundary

Greek origin, *peras*. “The boundary is that from which something begins its presencing.”³⁸

Building (v.)

“building by virtue of constructing locations, is a founding and joining of spaces...but building never shapes pure space as a single entity.”³⁹

Commons

Communities of Practice

Coordination

“construction of functional systems that enable learning as a means of coping with complexity, facilitating adaptation and organizing different domains of knowledge.”⁴⁰

Cultivate (v.)

German, *bauen*, dwelling, “to cherish and protect, to preserve and care for, specifically to till the soil, to cultivate the vine.”

Latin *colere, cultura*, “it tends the growth that ripens into its fruit of its own accord.”⁴¹

Dialectical

“Any systematic reasoning, exposition, or argument that juxtaposes opposed or contradictory ideas and usually seeks to resolve their conflict.”⁴²

Distance

Latin, a *spatium*. “an intervening space or interval”⁴³

Dwell

German, *buan*, “to remain, to stay in place.”⁴⁴

Dwelling

“education of attention through which learning operates as a way of

³⁸ Leach, Neil. p 105

³⁹ Leach, Neil. p 107

⁴⁰ Mcfarlane, p 9

⁴¹ Leach, Neil. p 108

⁴² <http://www.merriam-webster.com/dictionary/dialectic>

⁴³ Leach, Neil. p 106

⁴⁴ Leach, Neil. p 101

seeing and inhabiting the world.”⁴⁵

Epistemes

“periodizations of knowledge”⁴⁶

Forum

“the forum, then, is a specific organized encounter that may be a one-off or part of a series of events, and which emerges from and reshapes learning assemblages.”⁴⁷

Improvisation

“a creative recasting of relations that result from everyday dwelling.”⁴⁸

Knowing

Knowledge

Learning: emerges through relations with others, “people are always part of the process of coming-into-being of the world”⁴⁹

Location

“Locations shelter or house men’s lives”⁵⁰

Metis

Network

Places

“mere positions between which there lies a measurable distance.”⁵¹

Play

Praxis

Produce (v.)

From Greek word, *tikto*, ‘to bring forth or to produce,’ and *techne*, ‘*tec*,’ “to make something appear, within what is present, as this or that, in this way or that way.”
“letting appear”⁵²

⁴⁵ Mcfarlane, p 9

⁴⁶ Leach, p 348, (Michel Foucault),

⁴⁷ Mcfarlane, Colin. Learning the City. P 114

⁴⁸ Mcfarlane, p 8

⁴⁹ McFarlane, p 21

⁵⁰ Leach, Neil. p 107

⁵¹ Leach, Neil. p 106

⁵² Leach, Neil. p 108

Public

Situated Learning Space

“something that has been made room for, something that is cleared and free, namely within a boundary”

“Space is in essence that for which room has been made, that which is let into its bounds.”⁵³

Spatial Agent

“one who effect change through the empowerment of others, allowing them to engage in their spatial environments in ways previously unknown or unavailable to them, opening up new freedoms and potentials as a result of reconfigured social space.”⁵⁴

Tactical Learning

“a field of pragmatic opportunity that disrupts the everyday by disclosing possibility”⁵⁵

Territory

Texture

“we already know that a texture is made up of a usually rather large space covered by networks or webs; monuments constitute the strong points, nexuses or anchors of such webs.”⁵⁶

Translation

“relational and comparative distributions through which learning is produced as a sociomaterial epistemology of displacement and change.”⁵⁷

also considered learning through difference⁵⁸

Translocal

“an attempt to emphasize the blurring of that scalar distinction in the production of urban learning assemblages.”⁵⁹

Transnational Civic Networks

⁵³ Leach, Neil. p 105

⁵⁴ Awan, p 31

⁵⁵ Mcfarlane, Colin, p73

⁵⁶ Leach, Neil. p 140 (Lefebvre)

⁵⁷ Mcfarlane, p 9

⁵⁸ Mcfarlane, Colin, p114

⁵⁹ Mcfarlane, p 30

Urban Learning Assemblage

learning based on three interrelated processes: “*translation, coordination, and dwelling.*”⁶⁰

Urban Learning Commons:

“Urban Learning Forums entail the possibility of different actors and knowledges within the city coming together to participate, in the context of unequal power relations, in collective learning. If managed carefully to facilitate sustained intensity, openness, and quality, these learning forums take urban planning in uncertain directions and increase the possibility of more socially just urbanism.”⁶¹

⁶⁰ McFarlane, p 9

⁶¹ McFarlane, p 113

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