Architecture/Education:

Spatial Empowerment through Capacity Building

by

Sue Anne Tang

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Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of this thesis, including any required final revisions, as accepted by my examiners. I understand that my thesis may be made electronically available to the public.

Abstract

Architecture is too important to be left solely in the hands of architects, developers, and builders. All have the right to build, alter, and inhabit spaces that meet their needs and desires. For this condition to occur, individuals must have the psychological **capacity** and social **legitimacy** to become active agents in spatial discourse and production. Without capacity or legitimacy, the individual will not be able to act. In this thesis, the process of an individual developing from a passive user of space into a spatial advocate, instigator, and creator is framed as **spatial empowerment**. The thesis offers spatial empowerment strategies and tactics for non-architects within three domains.

CB **Capacity Building** of architectural knowledge, spatial skills, and critical thinking is achieved through education and reflective practice. This ensures an increase in an individual's capacity for spatial decision making.

IP **Inclusive Practice** within the architectural process and pedagogical approach leads to social legitimacy of the individual. Inclusivity is achieved through participation and community building.

SA **Spatial Action**, the intended outcome of the spatial empowerment process, is conditional on available empowerment opportunities, the mobilization of resources, and the ability to implement, monitor, and evaluate the process.

The praxis-based thesis research, conducted through literature review and workshop analysis, culminates in a spatial empowerment guidebook. *1-to-1: A Guide to Spatial Empowerment*, provides information and 'lesson plans' for an individual to increase their spatial capacity, foster inclusive practice, and promote spatial action. All can lead the way to a hands-on, open-ended, inclusive, and empowered spatial reality.

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Glossary

Empowerment

noun

The capacity and legitimization to take control over one's environment

Spatial

adjective

a. Relating to or of space, a limited extent in one, two, or three dimensions

b. The understanding of space and the relationship of objects within it: size, shape, position, and depth

Decision

noun

The act or process of determination after critical thought

Making

verb

The act or process of creating, forming, becoming, or coming into existence through shaping or changing matter

Spatial-decision making

verb

The act or process of creating or altering space after critical thought

Spatial empowerment

noun

The capacity and legitimacy to create and alter one's environment after critical thought

The Vision

FADE IN:

EXT. - DAY

Blocks lay on the ground of a nondescript location.

A figure enters the scene. Without hesitation, the figure walks over to the pile of blocks and picks one up.

With a block in hand, he looks across the way and sees a larger volume. Intrigued, he takes his block and stacks it on top of the larger volume. Taking a step back to observe the result of his action, the figure picks up a different block and stacks it again with deliberation.

A second figure enters the scene.

The figures catch each other' eyes and share a look of excitement and understanding. With the second figure joining in, they continue to build and create. Shifting, augmenting, and altering the blocks as they see fit.

A steady wave of figures begin to join. Shaping and transforming a world in their vision.

All of the figures have a building block in hand, becoming the agents of change.

FADE OUT.

Fig. 0.1 Spatial decision making: Workshop 2.

1.0   Introduction

The role of architecture could be... on the side of the power structure, or on the side of those overwhelmed and excluded by it.... In reality, architecture has become too important to be left to architects. A real metamorphosis is necessary to develop new characteristics in the practice of architecture and new behaviour patterns in its authors...

-Giancarlo De Carlo, *Architecture's Public*

1.   Giancarlo De Carlo, "Architecture's Public." In *Architecture and Participation*, edited by Peter Blundell Jones, Doina Petrescu, and Jeremy Till (New York: Spon Press, 2005), 4.

2.   Definition from Ontario's Architects Act, R.S.O. 1990, c. A.26

3.   Refer to glossary for spatial decision-making definition.

4.   Alastair Parvin, David Saxby, Cristina Cerulli, and Tatjana Schneider. *A Right to Build: The Next Mass-housebuilding Industry. (*University of Sheffield School of Architecture and Architecture 00:/, 2011), 7. http://issuu.com/alastairparvin/docs/2011_07_s06_arighttobuild

Fig. 1.1 Pareto Principle, also known 80-20 rule. i.e. 20% of an action is responsible for 80% of the reaction.

The architect. An ambiguous moniker.

Who is the architect/ What is the architect/ Why an architect

The role of the architect can be debated to the beginning of the profession and will be reevaluated and redefined in this thesis.[1] Today, the professional body, governed by a statute of the Government, upholds a general public consensus that architects concretize spatial ideas through the construction of buildings, structures, and objects.[2] As a result, the architectural profession has serious and tangible spatial implications on existing built and natural environments. Concretizing spatial ideas means that the basis of current architectural practice lies in the predicated notion that architects are experts in spatial decision-making.[3] Architects, from their training, have an amplified capacity over non-architects to understand space. Spatial understanding and knowledge leads to the implementation of appropriate spatial solutions to given problems. With the architect's responsibility to define the built environment and its resulting implications, the architectural profession holds social, economic, and political power.

Currently, western architecture is primarily dictated by those with economic, political and social capital. This creates a hierarchy of stakeholders within spatial production. The hierarchy is evident in the housing supply. The 'Pareto Principle', which states that a minority of a given population is responsible for the majority of the production, can be applied to the housing supply.[4] Do we want to live in a society where 80% of the built environment is controlled

by 20% of the population? Architects must ask themselves, is it socially just to cater to those in economic power? How can architecture be socially relevant if it does not represent the needs of the majority of spatial users? What can architects do?

The social responsibility and validity of architectural practice lies in shifting focus from the minority involved in spatial production to the majority of spatial users by spatial empowerment methodology. Spatial empowerment would result in a radically different aesthetic, design process, and conception of architecture that would accurately represent users of space. The thesis proposes that individuals, who are not currently involved in spatial production, should not be passive consumers of space. Rather, individuals can become spatial creators, instigators, and advocates. The architect, as the spatial decision-making expert, can distill, communicate, and nurture ideas of spatial decision-making in those individuals. Pedagogy, to increase spatial capacity, becomes the vehicle for empowerment. Through teaching and engaging the public, the architect will become the conduit and enabler of spatial empowerment.

Fig. 1.2 One-to-One Principle. What if 100% of the population was responsible for 100% of spatial production?

The thesis has three goals.

1 Define spatial empowerment[5]

2 Provide a methodology to implement spatial empowerment[6]

3 Promote spatial empowerment through a guidebook[7]

Spatial empowerment is defined and filtered through Elisheva Sadan's and Anu Kasmel's writings on empowerment theory and evaluation. Analysis of pedagogy in architecture and education provided the theoretical groundwork for the approach of in situ workshop-based research. The two workshops, held at a Toronto elementary school and in a Toronto public park with students and adults respectively, explored how to build spatial capacity. The results from the workshops informed the spatial empowerment methodology, which was applied to the creation of a guidebook. *1-to-1: A Guide to Spatial Empowerment* is the endeavor to summarize and stimulate the conditions for spatial empowerment.

5. Spatial empowerment refers to the one's capacity to create and alter one's micro-environment. It does not implicate one's economic, political, or social ownership of space.

6. The methodology is based on existing pedagogy, research outcomes, and personal practice. It does not provide a definitive set of principles, rules, or method. Rather, it proposes several strategies that allude to increasing spatial empowerment as defined in goal 1.

7. The guidebook is the tool that captures the methodology of spatial empowerment for non-architects in an engaging medium.

1.1 Motivation for Study

Architecture cannot be conceived other than as a social practice.

-Workshop Architects

Fig. 1.3 Hover Installation. Mylar and balloons create a suspended atmosphere.

8. De Carlo, "Architecture's Public", 4.

9. Margaret A. Boden, *The Creative Mind: Myths & Mechanisms*, 2nd ed. (New York: Routledge, 2005), 2.

New' as in 'personal creative' thought opposed to new 'historical thought'.

Fig. 1.4 Soudan Installation. Two bedrooms are transformed into giant reflective slides.

The research in spatial empowerment stems from my discontentment in my experiences with architectural education and professional practice. My discontentment led me to question the purpose of my architectural training and its social role. I found that my academic and professional experiences did not provide concrete strategies to actualize spatial, political, and social ideas. In addition, the level of abstraction in the school projects and the profit-driven professional practices did not resonate with my personal ideology. I began to seek 'a different way of doing architecture for the edification of a different world.'[8] Creating spatial installations and my experience at teacher's college led to my discovery that there could be alternatives in: spatial education, the design process, and architect-society relations.

Three installation projects: Weybourne, Soudan, and Hover, became the catalyst in unveiling the lack of spatial capacity I possessed. An authentic spatial understanding emerged through creating installations, which surpassed the knowledge and skills I gained in my formal architectural education. The experience abetted the adoption of a 'new' pedagogical strategy and design methodology.[9] Building at an one-to-one scale, reinterpreting familiar objects, and using tactile materials embedded interactive and user-friendly qualities in the work. Weybourne and Soudan installations, situated in soon-to-be demolished residential homes in Toronto, initiated my inquiry of 'who, what, where, why and how' of the spatial production.

During my time at OISE (Ontario Institute for Studies in Education), I realized the opportunity to augment current architectural and educational practice as a 'teacher-architect' and 'architect-teacher'. The following anecdote from an OISE professor enabled me to reinterpret the role of the architect in spatial production.

In my first year of teaching, I spent a month before school began arranging the classroom in my vision. I would have the BEST classroom setup. I grouped desks, displayed anchor charts, and made decorations to hang around the room. Curious about other classroom setups, I looked in the classroom next door. The room was bare and the desks were piled in the middle. I laughed, I knew I had a better classroom. A week before school started, the adjacent classroom was still bare. I was confused. Was it an empty classroom? Had a teacher not been assigned? A couple days later, a teacher walked in. I politely asked if he needed some help, thinking that he could use my amazing decorating skills. He told me that the classroom setup was already prepared. My incredulous expression and glare around his empty walls led him to explain his reasoning. He told me that one of the first activities that he asked his grade 2 students was create the layout of the classroom as a community. Students would claim a desk and move it to their desired location. They would also vote on the activity centres locations such as the reading area. The walls were bare because the students had not created any work to display on them. The classroom should be a reflection of student action and learning, rather than teacher intention.

-rephrased anecdote from OISE professor, 2013

Fig. 1.5 Weybourne Installation. A door tunnel is created with reclaimed material.

In my previous educational experiences, the architect and teacher are viewed as the 'expert', whose knowledge is irrefutable. But listening to my professor's anecdote, I realized the erroneous attitude of architect/teacher authority and the potential of co-created space. In the anecdote, students took responsibility and ownership of the physical outcome of their learning environment. The activity led to spatial negotiations that increased a common vision and solidified a classroom community. By keeping the walls bare, student work could define the surfaces to explicate their learning. The shift in my perception of the architect-teacher role laid the seeds of motivation for the study.

As thesis research progressed, further reflection on the cross-pollination of architecture and education compelled me to reframe the social purpose of the architect. I felt it was necessary for architects to fuel inclusive, relevant, and socially engaged

Fig. 1.6 Book cover of Alastair Parvin's *Right to Build.*

10. Alastair Parvin, "Architecture for the People by the People," *TEDtalk*. http://www.ted.com/talks/alastair_parvin_architecture_for_the_people_by_the_people

11. Parvin, *A Right to Build,* 24.

architecture. I became interested in the current forces that create and build space. Alastair Parvin's TEDtalk, *Architecture for the People by the People*, ignited idea of the 'right to build' for all citizens as an integral as part of the research.[10]

Before the Alastair Parvin's TEDtalk, I was unaware of the disproportionate minority dictating the majority of the built environment. Spatial production and architectural aesthetics was not determined by architects, but by finances. Alastair Parvin's *A Right to Build: The Next Mass-housebuilding Industry* argues that those with economic power 'are not in business to serve the public interest, except incidentally.'[11] Space is perceived as a commodity and therefore tied to its economic value. This means that the primary concern for investors of spatial production is to ensure profit. As a result, there is a disconnect of needs and desires between those financing the spatial production, spatial users, and architects. I realized that the lack and disproportionate spread of spatial power and aesthetic control necessitates the symbiotic relationship between architects and the public. Architects can minimize the economic influence on spatial production and its aesthetics by educating the public of their spatial rights and changing market demands. The public, through spatial empowerment, can advocate for relevant and engaging architecture. The research in the thesis is driven by the desire to create meaningful discourse between architects and non-architects about spatial empowerment.

1.2 Thesis Structure

The thesis is comprised of six sections. Part 1 provides an overview of the research, motivation, and study methodology. Part 2 examines the theoretical underpinnings and related practice of spatial empowerment, architecture and education. Part 3 describes the spatial empowerment strategy formulated in the previous chapter. Part 4 presents the outcomes and analysis of two workshops hosted by the researcher in Toronto, Ontario. Suggestions for future workshops are included. Part 5 is comprised of a spatial empowerment guidebook for non-architects. *1-to-1: A Guide to Spatial Empowerment* is a collection of aesthetically driven lesson plans, events, and information. Part 6 summarizes the research and poses questions for future research. The thesis concludes with a bibliography.

1.3 Research Methodology

This thesis adopts John Creswell's mixed methods research methodology from *Research Design: Qualitative, Quantitative, and Mixed Method Approaches*.[12] By varying the process of conducting, collecting, and analyzing qualitative and quantitative data for literature review, workshops, and the guidebook, the research methodology for this thesis is not prescriptive. Instead, it is flexible and dynamic. The non-linear and mixed methods approach is best suited on account of the broad theoretical frameworks, varied data sources, dynamic research intentions, and researcher learning rate. A concise hypothesis was not stated in the beginning of the study. Rather; praxis formed the basis of the exploratory research. Reviewing relevant literature and personal experiences established a spatial empowerment approach that was implemented in real-world settings through two workshops. The data from workshops informed the guidebook and the spatial empowerment theory. The research methodology, through its evolution, set out the criteria and scope of the research.

12. John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Method Approaches,* 2nd ed. (Thousand Oaks: Sage Publications, 2003), 211-227.

```
              Theory
                │
                ├ ─ ─  Intuition
         Exploratory
          Research
                │
                ├ ─ ─  Operationalisation
            Data
          Collection
Iterative       │
Process         ├ ─ ─  Data Processing
            Data
           Analysis
                │
                ├ ─ ─  Data Interpretation
          Research
          Findings
                │
                ├ ─ ─  Deduction
           Hypothesis
```
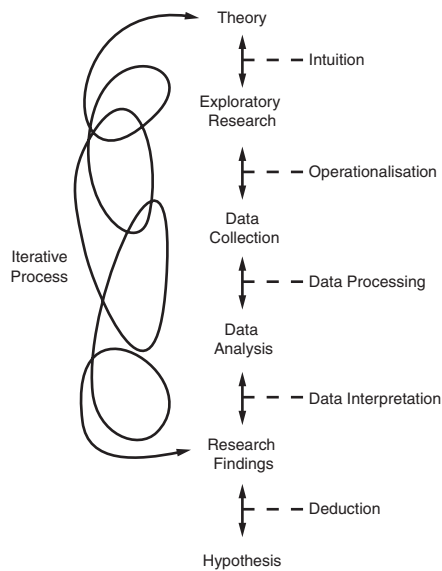
Fig. 1.7 Iterative Research methodology. The stages of the research process are informed by feedback.

13. Paul Leedy and Jeanne Ellis Ormrod, *Practical Research: Planning and Design,* 10th ed. (Upper Saddle River: Pearson, 2012), 51.

14. Davydd Greenwood and Morten Levin, *Introduction to Action Research: Social Research for Social Change,* 2nd ed. (Thousand Oaks: Sage Publications, 2007), 3.

Replacing the hypothesis with intentions enabled an iterative approach in the research methodology. Iterative research methodology fosters a non-biased perspective by incorporating feedback and reflection into ensuing approaches. Data was objectively analyzed and the process was augmented as necessary. Reversible sequences of research stages: theory, exploratory research, data collection, data analysis, and data interpretation, is permitted in the iterative process. Therefore, each phase in the methodology was continually assessed, monitored, and adapted to respond to the intended outcome. Concurrently, the research intentions were revised to identify with the results. Research findings from the literature review, workshops and guidebook permitted a hypothesis for spatial empowerment to be deduced. The spatial empowerment hypothesis and methodology can then be evaluated in future studies.

Literature Review Methodology

The literature review methodology employed in the thesis is one of standard graduate research. Applicable theory from various sources were collected. Findings from the sources were summarized and evaluated in relation to the research problem.[13] Relationships between the works were established to inform the spatial empowerment theory.

Workshop Methodology

The workshops can be classified as participatory action methodology as outlined in Davydd Greenwood's *Introduction to Action Research: Social Research for Social Change*. Participatory action research is typified by the examination of real world small scale interventions. It involves the engagement in a research environment to promote, initiate, or sustain social or organizational change. 'On the spot' procedures were used to deal with challenges that arose during the interventions.[14] Qualitative and quantitative data was gathered through continual monitoring and assessment of the process, outcome, and feedback. Findings from the data were applied immediately to the workshop methodology and further monitored. The workshops were an emergent process. They took shape as understanding increased.

Guidebook Methodology

The guidebook, *1-to-1: A Guide to Spatial Empowerment*, falls under Graeme Sullivan's artistic-creative research methodology category. Artistic-creative research is characterized by the production of an original piece of work through engaging the creative process, theoretical contexts, and the works' implications.[15]

15. Graeme Sullivan, *Art Practice as Research: Inquiry in the Visual Arts* (California: Sage Publications, 2005), 104.

1.4   Limitations, delimitations & assumptions

Research limitations, delimitations and assumptions are identified as necessary methodology descriptors in Paul Leedy's and Jeanne Ellis Ormrod's, *Practical Research: Planning and Design*. Limitations, delimitations and assumptions are stated for literature review, workshops, and the guidebook to clarify the scope and reasoning for the research process.[16]

16. Leedy, *Practical Research: Planning and Design,* 45.

Limitations:

Limitations for the study due to the researcher include the researcher's biases, value system, skill level, and understanding of the research. The depth of the research was limited by time constraints. Workshop limitations included sample size, participant ability, and the depth of analysis from the data. The specificity of the situations and unknown participant responses during the workshops meant there was minimal control over the direction of the research iterations and its the process and outcome.

The limited sample size, time constraints, open-ended methodology, and the lack of a control study, means that workshop findings cannot be generalized to provide a comprehensive approach. In addition, the non-empirical nature of the participatory action and artistic-creative research methodology of the workshops and guidebook can only result in a description of a strategy for spatial empowerment rather than a formulaic method.

Delimitations:

The literature selection for review was based on its relevancy to educational and architectural theory. Parameters of the workshops determined by the researcher included: site, materials, content, and participant selection. The elementary school library room was selected as Workshop 1's site due to the availability, size, open programming and proximity to the participants. The outdoor park location for Workshop 2 was chosen for its existing enclave of trees, accessibility, and flexibility. Workshop materials were selected based on their facility, familiarity, and low cost. The content presented to participants was based on the research at the time of the instruction and previous participant feedback. The participants for the workshops were selected based on their age and non-architectural training. A control study was not conducted as part of the research due to time constraints and research inntetions at the time. The guidebook format was selected as a spatial empowerment medium due the ease of its physical and digital reproduction and distribution.

Assumptions

The research lies in the constructivist paradigm where it speculates that reality is perceived as contextual and is dependent on the aptitude and value system of the individual.[17] In addition, the research assumes that knowledge is socially constructed. Therefore, the research and the researchers' capacities interact to influence one another. The research presumes that existing hierarchal power dynamics between the teacher/student and researcher/participant are currently evident. The approach to spatial empowerment is grounded in a society where a pluralistic model of power exists and citizens have access to space, resources, and leisure time. The guidebook anticipates that the reader is literate.

17. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Method Approaches,* 9.

Constructivist paradigm relies on the assumption that individuals construct their understanding and knowledge of the world through experience and reflection.

Fig. 1.8 Workshop 1: Day 5. Student using plastic pipes to prop a plastic sheet. Photo by student.

2.0

Spatial Empowerment

Power can be taken, but not given. The process of taking is empowerment itself.

- Gloria Steinem

The thesis defines spatial empowerment as: an individuals' psychological **capacity** and social **legitimacy** to create and alter their environment. Defining spatial empowerment falls into the theoretical territory of architecture, education, and empowerment. The thesis will first examine the characteristics of empowerment before expanding on the definition of spatial empowerment.

Empowerment

18.   Sadan, *Empowerment and Community Planning,* 74.

19.   John Lord and Peggy Hutchison, "The Process of Empowerment: Implications for Theory and Practice," *Canadian Journal of Community Mental Health* 12, no. 1 (1993), 4.

20.   Understanding is analogous to one's intellectual capacity. Control can only be achieved when it is evident that an individual's actions are legitimate in the current social conditions.

21.   Anu Kasmel, "Evaluation as a Tool for Community Empowerment" (PhD thesis, University of Southern Denmark, 2011), 37.

Empowerment, a term that came into prominence during the 1970's civil rights movement, has developed several distinct ideological frameworks since its initial inception. Currently, empowerment is discussed as an ethnocentric, conservative liberal, socialist or democratic approach.[19] A general meaning of empowerment refers to the initiating processes in which people gain **understanding** and **control** over personal, social, economic and political decisions and resources that directly affect the quality of their lives.[18] In this thesis, understanding is identified as **capacity**, whereas control is labeled as **legitimacy**.[20] In Anu Kasmel's PhD thesis, *Evaluation as a Tool for Community Empowerment*, empowerment is described by three characteristics. Spatial empowerment is defined and framed through its multi-dimensional, social and processual domains.[21]

Multi-dimensional

Empowerment can be defined as a psychological and/or political process. The multi-dimensional aspect of empowerment makes it

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difficult to define as it takes on different forms in different people and contexts. The thesis focuses on the psychological process of spatial empowerment within the architectural and educational disciplines. The stakeholders of spatial empowerment include architects, non-architects, and governing bodies.[22]

22. In this text, non-architects are individuals who have not received formal architectural training. Throughout the thesis they are also referred to as participants, individuals, and spatial users.

Social

Empowerment is an interactive social process. It links individual strengths, competencies, resources, and networks to social policy and change.[23] The empowerment process intends to change aspects of a social condition in three operational domains: individual, community, and professional practice.[24]

23. Anu Kasmel, "Evaluation as a Tool for Community Empowerment" (PhD thesis, University of Southern Denmark, 2011), 39.

24. Sadan, *Empowerment and Community Planning,* 75.

Individual: feelings and capacities undergo intimate change.

Community: collective world views and actions of the collective undergo social change.

Professional practice: organizational and functional change occurs, which incites the realization of individual and community empowerment.

The operational domains allow individuals and groups to organize and mobilize themselves towards commonly defined goals of political and social change. Of these three scales, the thesis will focus on individual empowerment with the eventual intention of revolutionizing professional practice.

25. Douglas D Perkins and Marc Zimmerman, "Empowerment Theory, Research, and Application." *American Journal of Community Psychology* 23, no. 5 (1995): 569.

Process

Empowerment is the process in which individuals and communities are enabled to act effectively in gaining greater legitimacy and efficacy in changing their lives and their environment.[25]

The process of spatial empowerment can be described as a continuum from the transition from one's state of powerlessness to a state of increased control over one's spatial decisions. Conditions of social legitimacy must be present for this transition to occur. Legitimacy is achieved through altering existing impeding power structures. As a process, spatial empowerment may be defined as **capacity building**.

Fig. 2.1 Spatial empowerment definition influenced by Elisheva Sadan's empowerment characteristics.
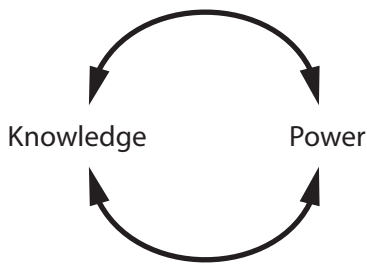
Fig. 2.2 Interdependent reciprocal relationship between knowledge and power.

26.   Paulo Freire, *Pedagogy of the Oppressed,* 30th ed. (New York: Continuum, 2000), 95.

27.   Michel Foucault, *Power/Knowledge: Selected Interviews and Other Writings, 1972-1977,* edited by Colin Gordon (New York: Pantheon Books, 1980), 89.

Fig. 2.3 Spatial empowerment domains viewed through the writing of Michel Foucault and Paulo Freire.

Empowerment and Knowledge

Furthering the concept of spatial empowerment, the thesis examines the interpretations of power through the writings from Michel Foucault's *Power/Knowledge* and Paulo Freire's *Pedagogy of the Oppressed*. Both works examine the relationships between power and knowledge. Power and knowledge operate as an injective function as a one-to-one correlation exists. **Knowledge is power and power is knowledge**. However, they are not external to each other. Rather, they are mutually generative of each other. Therefore, knowledge attainment is central to transform power relations. **Educational pedagogy**, the practice of transmitting knowledge, is the vehicle for spatial empowerment through its process and content. **Education is essential for empowerment**.

Freire also argues that individual and collective reflection forms the basis of the empowerment process. "Starting point for... education or political action must be the present, existential, concrete situation, reflecting the aspirations of the people."[26] By critically examining and reflecting on the needs and desires of individuals in the current context, an approach for empowerment can emerge. Reflection must occur internally and externally. Internal reflection enables people to situate themselves in the world to allow authentic engagement with reality. Whereas external reflection can reveal common collective intentions. Reflection leads to the development of **critical thinking** skills which is an integral trait of a spatially empowered individual.

Foucault's *Power/Knowledge* asserts 'that power is neither given, nor exchanged, nor recovered, but rather exercised, and it only exists in action.'[27] Forces cause action. If power is the manifestation of forces, spatial empowerment is the manifestation of **spatial action**. Therefore, spatial empowerment must have a spatial result.

Spatial empowerment revolves around two professional disciplines: **architecture** and **education**. Education forms the basis to the empowerment approach and architecture is the practice providing the framework for change. Education is the method to spatial empowerment, critical thinking characterizes a spatially empowered individual, and spatial action is the outcome. The connection between education and architecture can be revealed through parallel examination of the empowerment process, the relationship between the stakeholders, and the role of the
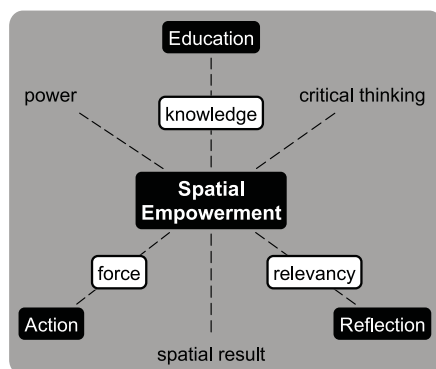
professional. The following questions will allow the breadth of spatial empowerment to be discovered. How is the discipline analogous to spatial empowerment? What are the power dynamics between the discipline's stakeholders? What is the role of the professional?

2.1   Education

If points of synergy can be discovered between education and architecture and worked upon, architecture can develop education like a catalyst.

- Susanne Hofmann

Although education may invoke images of formalized institutions, education in the thesis is presented as pedagogy: the theory and practice of teaching and learning. Education will be framed through three constructs: as empowerment, teacher/student power relationship, and the role of the teacher. Jacques Ranciere's, *The Ignorant Schoolmaster*, provides the theoretical scheme to evaluate the teacher/student relationship and the role of the teacher.

Education as Empowerment

Education is a critical and political practice as it is significant in social, political cultural, and economic processes.[28] Education is more than a process of knowledge transfer, it has the potential to change individual and collective perceptions. Educational practices can build capacity, create communities, and transform power relations.

  Teaching, by direct and indirect means, enables an understanding of the world. Through pedagogy, concepts, symbols, and ideas that have not yet been articulated are organized to make meaning. Individuals assimilate previous knowledge and experiences with new knowledge and experiences which shape and define their reality. The process of learning socially connects

28. Contemporary pedagogical principles and approaches seek to legitimize and foster self-awareness, empowerment, and participation.

individuals to their external surroundings. The works of Foucault and Freire argue that knowledge is power. By extension, teaching practice can be construed as the method for empowerment.

Educational practices must maintain a balance between celebrating heterogeneity and maintaining equality and inclusivity.[29] This balance, if skewed, can lead to the oppression of individual and collective rights. Teachers have the responsibility to select content and social practices that will be perpetuated and disseminated. Positive interactions between teachers and students based on trust and respect can generate collective social identities in communities and networks. On the other hand, education can produce inequalities. If a teacher taught biased and discriminatory content; for example, a lack of ethnic and cultural representation in literacy curriculum; students would adopt and perpetuate a racially exclusive point of view. Similarly, exhibited inequitable social practices by the teacher will be transposed to the students and the learning environment. Educational practice must shift from an authoritarian mindset to an inclusive pedagogy to empower individuals in the learning process.

29. Paulo Freire, *Pedagogy of the Oppressed,* 30th ed. (New York: Continuum, 2000), 73.

Fig. 2.4 Authoritarian versus a lateral network-based pattern of interaction.

Teacher/Student

Anyone can teach what they don't know.

- Jacques Ranciere, *Ignorant School Master*

The teacher and the student are primary stakeholders in the teaching and learning process. The disposition between the teacher and student determines whether or not pedagogy is progressive or recursive for an individual's empowerment. Currently, the practice of education sustains inequality through a "hierarchy of capacities."[30] The teacher is perceived to be the 'expert' who explicates knowledge to students, the ignorant. An alternate power relationship between the teacher and student is necessary for empowerment.

30. Clayton Crockett, "Pedagogy and Radical Equality: Rancière's Ignorant Schoolmaster," *Journal for Cultural and Religious Theory 12,* no. 2 (2012), 169.

The knowledge-based hierarchy can be dissolved through emancipation and discourse. In Ranciere's *The Ignorant Schoolmaster*, the teacher, Jacotot, believes that an ignorant person can teach others. The teacher does not have to be an 'expert' nor

the student 'ignorant'. This radical pedagogy, "emancipation", is based on the equality of intelligence. By viewing the teacher's and student's intelligence equal, a lateral network-based interaction model emerges. Learning occurs bilaterally between the teacher and students. The student and teacher become co-creators of knowledge. Through recognizing intellectual equality, a diverse set of knowledge and skills from the collective can be applied to approach problems.[31]

31. Jacques Ranciere, *The Ignorant Schoolmaster (*Stanford, California: Stanford University Press, 1991), 31.

Role of the Teacher

The essential act of the master was to explicate: to disengage the simple elements of learning, and to reconcile their simplicity in principle with the factual simplicity…

- Jacques Ranciere, *Ignorant School Master*

The role of the teacher, derived from Ranciere's emancipation theory, is to recognize the distance between the taught material and the person being instructed, and the distance between learning and understanding.[32] In this perspective, the teacher is the facilitator and assessor of understanding. For the emancipation to occur, a common tool between the teacher and student must be present. The tool, a book in Jacotot's scenario, provides the content, focus, and limit of the learning.

Fig. 2.5 Intellectual equality between students and teachers through a common tool.

The tool acts as the mutual entity between the teacher and students and provides the gauge for intelligence equality.[33] In selecting a tool, it must be transparent and inclusive to all stakeholders. No information, data, or content should be hidden or ambiguous. The teacher directs students to the material source for knowledge verification and confirms that students are engaged with the tool, not the content. In leaving space for the students to dictate their learning, the students use their own intelligence to interpret the tool. Revealing the intelligence from the tool and the students is the task of the teacher. Questions and reflections posed by the teacher can unobtrusively guide the student's intelligence.

32.   Ranciere, *The Ignorant Schoolmaster,* 5.

33. Ranciere, *The Ignorant Schoolmaster,* 38.

2.2 Architecture

In this thesis, architecture will be broadly defined as the process of spatial production, the professional practice, and physical spatial outcomes. Architecture will be viewed through three constructs: as empowerment, architect/user relationship, and the role of the architect. The research in part 4 will focus on temporal small scale spatial interventions as architecture. Building capacity in the spatial empowerment process does not require the architectural outcome to be permanent or planned.

Architecture as Empowerment

Architecture can operate as a form of empowerment through physical embodiment and process. As tangible matter, architecture 'can produce concrete images of what the physical environment could be like if the structure of society were different.'[34] Through translating material, work, and finances into a built form, 'counter-narratives' to existing power structures can occur.[35] By embedding alternative political, social, and economic viewpoints into the architectural process, the potential pluralistic built results can question the current conditions of society. For example, the relationships and interactions between individuals could be dramatically reconceived if space were different. Space determines our cartographic location which defines current physical relationships with others and dictates future interactions. Positive interactions can be promoted or impeded by physical architectural elements. Walls could be used to create barriers and place restrictions on our actions with other individuals. On the other hand, space could create shared identities and connection. Minimal thresholds and a lack of barriers could eliminate the public/private division of space and create new interfacing model for citizens.

Within the architecture process, architects can aid in legitimizing non-architects. Spatial production and experiences are embedded in broader structures and relations which involve many stakeholders. Power hierarchies can be modified by revising the roles of stakeholders through participation. Participation enable all stakeholders to be represented. Explication from architects to

34. Jeremy Till, "The Negotiation of Hope." In *Architecture and Participation*, edited by Peter Blundell Jones, Doina Petrescu, and Jeremy Till (New York: Spon Press, 2005) ,12.

35. Alastair Fuad-Luke, *Design Activism: Beautiful Strangeness for a Sustainable World (*London: Routledge, 2009), 26.

Fig. 2.6 Architecture as empowerment.

non-architects during all stages of the architectural process sustains transparency, and accountability. Transparency abolishes the knowledge-based hierarchy and accountability ensures ownership and a sense of civic responsibility. When individuals are empowered through architecture, space does not become a commodity, rather it represents social, economic, and ideological intentions of a collective.[36]

36. De Carlo, "Architecture's Public," 12.

Architect/User

Architects are possessors of both specialized knowledge and conditioned, evolving, understanding as they move between the roles of expert and user... this combination of knowledge and understanding that is central to any reformulation of practice which has the potential to empower the user.

-Jeremy Till, *Architecture of the Impure Community*

Comparable to the stakeholders in education, the relationship between architects and spatial users lie in a state of tension and opposition along an axis of knowledge and non-knowledge with conflicting interests.[37] Architects, as a result of money, materials, land and authority needed to conduct the profession is required to identify with those in economic and political power. As a result, architects cater to private interests of the client instead of the potential user of the space. By disregarding the interests of the non-clients, architects create space that exhibits a hierarchy of interests and power relations. But this can change through discourse. The autonomy of architects is dependent on the specificity of their knowledge. Through activating the knowledge in all stakeholders, the reconfiguration of power is possible. The architect can shift the public's perception of the architect as the 'expert' of irrefutable spatial knowledge into one who promotes spatial learning opportunities. The architect and non-architects should not be in opposition. Rather, by working and learning together, they can give architecture its validity and relevancy.

37. Till, "The Negotiation of Hope", 27.

Fig. 2.7 Relationship of knowledge and experience of architects and non-architects over time.

The lack of architectural expertise should not be dismissed. Spatial users have different expertise and understandings of

38. Bjarke Ingels, "Architecture as a School Subject on a Level with Social Studies." In *Architecture and Design for Children and Youth*, edited by Merete Dael, 2nd ed. (Copenhagen: Network for Children and Culture, 2011), 23.

39. De Carlo, "Architecture's Public", 4.

40. Bernard Rudofsky, *Architecture without Architects: A Short Introduction to Non-pedigreed Architecture* (New York: Museum of Modern Art, 1965).

41. Colin Ward, *Housing: An Anarchist Approach (*London: Freedom Press, 1976).

Fig. 2.8 Guineans moving their hut in Rudofsky's *Architecture without Architects.*

42. Erling Bjögvinsson, Pelle Ehn, and Per-Anders Hillgren, "Design Things and Design Thinking: Contemporary Participatory Design Challenges," *Design Issues 28, no. 3* (Summer 2012): 101-16.

space than architects. An injection of fresh perspectives can lead to creative spatial solutions. By including non-architects into the spatial discourse, a wealth of transdisciplinary knowledge and skill base are exposed. Participants must tap into their latent power to influence the aesthetics and meaning of their environment.[38]

Role of the Architect

The term 'architect' has been interpreted in various manners throughout history.[39] Merriam-Webster defines an architect as a person who designs buildings and advises in their construction. To ensure participatory, collaborative, and non-hierarchical architectural practices, the architect must adopt a new role. An interpretation of the role and responsibility of the architect was invigorated in the 1960's and 1970's by Bernard Rudofsky and Colin Ward. They instigated the notion that spatial production did not have to be in the hands of architects.[40] Rudofsky's exhibition and catalogue *Architecture without Architects*, provides examples of built environments throughout history and regions that were not dictated by architects. By rejecting the architect's agency, non-exclusive land use and rights exist. Ward's *Housing: An Anarchist Approach* also argues that the task of architecture could be passed from the architect to the user-client.[41]

Architects must facilitate the transition of spatial responsibility through teaching. In the spatial empowerment process, the architect acts as the provider and container of spatial knowledge and skills. By teaching non-architects, pluralistic and inclusive spatial realities are generated. Architect-teachers, along with empowered spatial users, can implement a holistic, relevant, and meaningful vision of spatial production that is beyond economic return.[42]

2.3 Spatial Empowerment Evaluation

A method for assessment is an essential component for all schemas. Assessment provides the baseline in which a strategy can be deemed successful or unsuccessful through evaluating the evident outcomes.

Success criteria provides indicators, which can be used to inform succeeding approaches. The evaluation, for qualitative analysis, is adopted from Anu Kasmel's *Evaluation as a tool for community empowerment*, Elisheva Sadan's *Empowerment and Community Planning*, IAP2's *Spectrum of Public Participation* and James Banks's approach in *An Introduction to Multicultural Education.*[43] The spatial empowerment process is measured on a three level rubric, figure 2.9, in which an individual, group, or organization can:

43.
Kasmel, "Evaluation as a Tool for Community Empowerment".

James A. Banks, *An Introduction to Multicultural Education*. (Boston: Allyn and Bacon, 1999).

International Association for Public Participation, "IAP2 Spectrum of Public Participation." http://c.ymcdn.com/sites/www.iap2.org/resource/resmgr/imported/IAP2 Spectrum_vertical.pdf.

1 **Develop spatial knowledge and skills, and increase critical thinking**

Skills and knowledge enable economic, political and social autonomy in decision-making. Socially legitimate action relies on an increased critical consciousness of privilege, discrimination, and social situations of individuals. All people have existing strengths and capabilities as well as the capacity to become more competent.

2 **Demonstrate inclusive practices**

Inclusivity is rooted in the notion of empowerment. Without inclusive practice, individuals cannot be adequately represented in discourse. Inclusive practices legitimizes the differences among people. Collaboration allows groups to tackle complex issues that individuals cannot cope with alone. Although collective effort does not ensure success, the process of working to towards a common goal to improve the quality of life and the environment, generates an 'empowered' perspective among participants.

3 **Realize spatial action**

Spatial action is dependent on the availability of spatially empowering opportunities and the mobilization of resources. Implementing, monitoring, and evaluating spatial action must occur. Empowering opportunities authorize an individual's right to choose. Without opportunities to employ empowerment strategies, a civic culture that

recognizes and boosts the citizen's rights to self-definition cannot be realized. The ability to mobilize political, social, intellectual and financial resources will ensure that spatial empowerment will be sustained. Spatial action, to be actualized and relevant, must be implemented, monitored, and evaluated.

The rubric's three levels describe the spatial empowerment spectrum. Level one is the additive and informing stage where knowledge is transfered from the 'expert' to the non-experts. It can be considered a 'top-down' approach. Increasing spatial empowerment leads to level two, the transformative stage. During this stage, individuals are actively involved in the architectural and pedagogical process. Collaboration between stakeholders transpires. In level three, individuals begin to transmit and demonstrate their spatial empowered state to others. Although it is necessary for all criteria to be evident in the spatial empowerment process, the thesis research will focus primarily on capacity building in individuals.

Spatial Empowerment Strategy Assessment Rubric

increasing spatial empowerment →
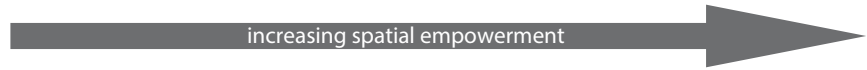
Criteria	Domains	Level 1: Inform (additive)	Level 2: Involve (transformative)	Level 3: Empowered (active)
1 Capacity Building (within individuals)	· spatial decison making skills · spatial knowledge	Individual is taught spatial decison making skills and knowledge by others	Individual is involved in constructing and developing their spatial decison making skills and knowledge	Individual actively demonstrates and teaches spatial decison making skills and knowledge to others
	· critical thinking skills	Individual is taught critical thinking skills by others	Individual is involved in developing their critical thinking skills	Individual actively demonstrates and teaches critical thinking skills to others
2 Inclusivity (within the discipline and process)	· architectural process	Architectural process consults individuals needs and knowledge	Architectural process involves individuals in decison making	Individuals participate, inform, and dictate the architectural process
	· pedagogical process	Pedagogical process is inclusive and creates a sense of community	Pedagogical process involves individuals in creating inclusivity and a sense of community	Individuals promote and sustain inclusivity and a sense of community in the pedagogical process
3 Spatial Action (within the approach and tools)	· resources (knowledge)	Individuals have access to resources	Individuals have access and the capacity to mobilize resources	Individuals create tools and strategies to mobilize resources
	· spatial production · spatial empowerment	Opportunities for spatial production and spatial empowerment exist	Individuals have access opportunities for spatial production and empowerment	Individuals create opportunities for spatial production and empowerment
	· implementation monitoring and evaluation	Spatial action is implemented, monitored and evaluated by others	Individuals are involved in implementing, monitoring, and evaluating spatial action	Individuals create implementation, monitoring and evaluation strategies

Fig. 2.9 Spatial Empowerment Evaluation Rubric

2.4   Spatial Empowerment Precedent

Empowered action means coming out of the alienation, marginality and sense of irrelevance that are the lot of those who have no influence over what influences them.

- Elisheva Sadan, *Empowerment and Community Planning*

The following precedents include groups, individuals, movements, practice, and ideologies that have attempted to tackle an aspect of spatial empowerment.

Spatial Agency

44.   Nishat Awan, Tatjana Schneider, and Jeremy Till, "Spatial Agency," *Spatial Agency.* http://spatialagency.net/.

45.   Jeremy Till and Tatjana Schneider, "Beyond Discourse: Notes on Spatial Agency." *Footprint* Spring, no. 4 (2009): 99.

Spatial Agency, a collective of architects and educators, outlines strategies for spatial empowered action which include appropriation, dissemination, empowerment, networking, and subversion.[44] Agency as defined by Jeremy Till is 'the potential to transform the given.'[45] Examples include: taking another's property for one's own purposes, highlighting abandoned or unoccupied space, increasing spatial dialogue to a wider audience, enabling others to 'take control' over their environment, expanding the network of stakeholders on projects, subverting existing policies, and utilizing space in a new manner. Spatial Agency provides access to relevant resources, precedent, and theory via their website.

Elisheva Sadan

46.   Sadan, *Empowerment and Community Planning,* 39.

47.   Sadan, *Empowerment and Community Planning,* 42.

In Giddens' structuration theory, social structure and human agency, reinforce and reproduce their processes on a macro and micro-level.

Elisheva Sadan in *Empowerment and Community Planning* presents participation, organization of a collective, multi-leveled interventions, and praxis of learning and action as strategies for designers to integrate into their practice and client relationships.[46]Anthony Giddens' structuration theory, where communication, power, and sanctions are perceived to provide the framework for social structure and human agency, form the backbone of Sadan's empowerment theory.[47] Empowerment is defined at a micro and macro process, where individuals and external change agents must collaborate on all levels. As a tactic, the architect expands their role to become:

a resource consultant, provider of knowledge and information, a teacher, coordinator, advocate, technical assistance, developer of skills and social technologies, modeler of empowerment, and enabler for action. Informal professional interventions can also be used to empower the designer and community. Sadan emphasizes that the establishment of empowering community organizations, widespread community activities, active community consciousness, appropriation of space and responsibility for it, and improvement of the quality of life and the attitude to citizens in the society are indicators of the empowerment.

Andrea Kenkmann

Andrea Kenkmann's *Adapting and Designing Spaces: Children and their Schools* argues that factors which nurture good spatial decision-making include building architectural vocabulary and opportunities to manipulate the micro-environment.[48] With common vocabulary, students can become involved in the discourse. Open ended materials, generalized architectural problems, and participatory space fostered the student's imagination to create varied responses in a negotiated space. In addition, it is vital to reveal shared spatial memories among individuals to create shared spatial practices.

Art Pedagogy

Arts pedagogy proposes pedagogical alternatives by offering new modalities of teaching, reflecting, communicating, and interacting which challenge the authoritative educational paradigm. Various 'schools' have emerged as models for critiquing the existing structures of education.[49] In 1968, artist Allan Kaprow and educator Herbert Kohl initiated a two-year pilot project of an alternative school titled *Project Other Ways* in partnership with local schools and teachers. *Project Other Ways* presented happenings, ad-hoc classrooms, collective action, and collaborative curriculum as a form of radical pedagogy. Boundaries between 'guided and free exploration, leadership and collaboration, delegation and individual agency across these different institutional structures' were negotiated and challenged.

Lessons were documented and distributed in the form
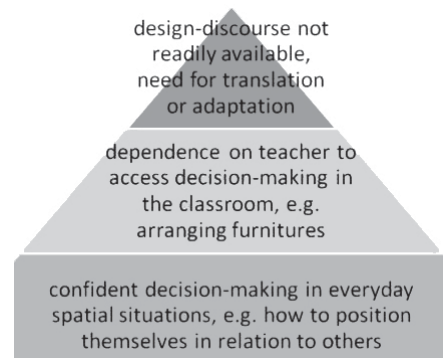
Fig. 2.10 Andrea Kenkmann's hierarchy of spatial decisions of students.

48. Andrea Kenkmann, "Adapting and Designing Spaces: Children and Their Schools," *Center for Educational Policy Studies 1,* no. 2 (2011): 11-24.

Fig. 2.11 Allan Kaprow's documentation poster for *Project Other Ways*

49. Vesna Krstich, "Back to School: Curatorial Statement," *Gallery TPW*, 2. gallerytpw.ca/publications/pdf/RD-04-V-Krstich.pdf.

50. Krstich, "Back to School: Curatorial Statement", 2.

51. Krstich, "Back to School: Curatorial Statement", 5. Happenings are collaborative social events that occur in real-time.

52. Annette Krauss, Annabel Johnson, and Henry Ward, "Hidden Curriculum: Conversation," *Arts & Education,* no. 5 (2013).

Fig. 2.12 Hidden Curriculum. Annette Krauss, 2008

Fig. 2.13 Room design by a student participating in Archimath's programme

53. Sema Soygenis and Emine Erktin, "Juxtaposition of Architecture and Mathematics for Elementary School Students," *International Journal of Technology and Design Education (*2009), 403-15.

of pamphlets, activity booklets, notations, posters and videos to teachers. These forms of pedagogical documentation engaged a wider public to reflect 'on the materiality and structure of their education.'[50] Documentation explicated the process of learning and curriculum. Students became active contributors in the dialogue about the existing structures of education, instead of passive recipients. Happenings were envisioned as a social and playful method of interaction, one that could be implemented into the school system as a "general curricular tool."[51] Event scores were used as to provide openness and improvisation to instruction.

In another art-pedagogy project, Annette Krauss' *Hidden Curriculum* investigates the ways that students negotiate and learn from the spaces and people at school.[52] The workshop-based *Hidden Curriculum* encourages a 'thinking by doing' approach. The art-making and learning process is viewed as situational and circumstantial to the participants, conditions, time and site. During the workshops, small groups of students developed performances that respond to formal and informal curriculum in everyday life in school. Art can instigate a dialogue as it interrupts normalcy through provocation. Students documented their performances through video cameras and created of short films which act as research into educational structures. *Project Other Ways* and *Hidden Curriculum* are projects that address radical pedagogy and institutional critique.

Archimath programme

The Archimath programme was a program implemented to develop critical awareness of the built environment in elementary school students.[53] The Archimath programme connected geometry and mathematics understanding to develop students' spatial sense. Representing and mentally manipulating two and three dimensions was found to be crucial in spatial problem solving. The programme, based on architectural curriculum, is composed of seven units. The units defined architecture and the role of the architect, emphasized human and architectural dimensions, taught standard architectural representation, described surfaces, 'planes', and geometry, geometrically analyzed the built environment, and connected mathematics, architecture and aesthetics. After students participated in Archimath, they showed significant awareness and concern of their environment. Students who were formerly

indifferent towards their environment, felt increased ownership and responsibility. Therefore, architectural education has potential the to change spatial capacity and attitudes about the built environment.

Participatory Architecture et al.

Participatory architecture and its various manifestations, co-design, metadesign, and community architecture, empowers the user through design process. The architectural process becomes a collaborative effort where the design process is spread among diverse participating stakeholders and competences. The process does not invert the power relationship between architecture and user, rather it acknowledges the potential for collaboration and dialogue between the stakeholders to reach a common goal.[54] A more democratic, open and porous design process that reveals non-architect's perspective, needs, and rights is achieved through discourse. Discourse in the design process can lead to negotiated and collective visions of the architectural problem. Depending on the level of collaboration within the design process, participants can begin to contribute to the spatial solutions. Participation in architectural design has crucial implications for the role of the architect and the profession. Collaboration will lead to spatial reconfiguration which will manifest itself in a radical collaborative aesthetic.[55]

Examples of participatory architectural practices and projects include: The Mosaic Approach developed by Clark and Moss, Susanne Hofmann/die Baupiloten, METI Handmade School designed Anna Heringer, Gando Primary School by Diébédo Francis Kéré', and Atelier D'architecture Autogeree's Transition Workshop. The Mosaic Approach involves young children and practitioners in the design process for children spaces. The Mosaic approach was developed in: an 18 month study from 1999 to 2000, a seven month study from 2002 to 2003, and a three year study in 2004 to 2007. The studies included children's perspectives and participation during the redesign of indoor and outdoor play areas.[56] Activities to involve the children included photo books, site tours, map-making, interviews, and model making. Susanne Hofmann/die Baupiloten also involve school children in the design process.

METI Handmade School was built in 2005 to 2006 in

54. Jeremy Till, "Architecture of the Impure Community." In *Occupying Architecture: Between the Architect and the User,* edited by Jonathan Hill (London: Routledge, 1998), 16.

55. Alastair Fuad-Luke, *Design Activism: Beautiful Strangeness for a Sustainable World (*London: Routledge, 2009), 49.

56. Alison Clark and Peter Moss, *The Mosaic Approach: Listening to Young Children.* 2nd ed. (London: National Children's Bureau, 2011), 3-6.

Fig. 2.14 Local laborers constructing METI Handmade School designed by Anna Heringer.

57. MoMA, "Small Scale, Big Change." *Project Index.* http://www.moma.org/interactives/exhibitions/2010/smallscalebigchange/.

Fig. 2.15 Gando Primary School by Diébédo Francis Kéré', 2001.

58. Anne Svelle, "Architecture and Urban Space." In *Architecture and Design for Children and Youth,* edited by Merete Dael. 2nd ed. (Copenhagen: Network for Children and Culture, 2011), 19.

Fig. 2.16 Students documenting their site as part of the sensory-creative method.

Rudrapur, Bangladesh as part Anna Heringer's thesis research. Local unskilled laborers were trained in the building technique and performed the majority of the construction. Gando Primary School, built in 1999 to 2001, had a similar construction process. Community members collaborated to build the school with local materials and construction techniques.[57] Atelier D'architecture Autogeree's Transition Workshop which took place in Brezoi, Romania from 2001 to 2002, was the strategy for the construction of a local information centre. The workshop involved students from the University of Sheffield, Atelier D'architecture Autogeree members, local organizations and numerous inhabitants. The construction of the information center became a civic act and activated processes of recycling of local materials and skills while involving groups of craftsmen and temporary unemployed. As a result of the discourse between the architect, spatial users, and other stakeholders, the resulting building aesthetics of METI Handmade School, Gando Primary School, and Atelier D'architecture Autogeree's Transition Workshop reflected local knowledge, material, and needs.

Sensory-creative Pedagogy

The sensory-creative pedagogical method, devised by Anne Svelle, Aarhus children's cultural coordinator, enables the experience of architecture to increase in contextual awareness, haptic understanding, and spatial action.[58] The sensory-creative pedagogical model commences with an immediate sensorial spatial experience of a site. All senses are receptive to the surroundings. Guided by an architect, participants begin a walking tour in a preselected space. The participants' familiarity with the selected space is significant as it enables a focus on revealing the experiential dimension of the space. The architect acts as 'a skilled mediator with an interest in storytelling' while encouraging dialogue in participants' observations and questions. In different mediums, documentation of the site is collected by the participants. The documentation of the site is examined and discussed to determine the area of priority to delve into further. From the sensory-perceptive site exploration, a creative-transformative approach is used for the design process. The participants critically reflect on the site and the spatial problem to settle on a design response. The response is prototyped to ensure a sensory approach is maintained while providing a concrete solution.

Physical manipulating materials can affect the sensorial perception of space. The final stage of the sensory-creative pedagogical method is the presentation of the prototype and reflection on the changes. Activating a sensorial experience with architecture enables a shift from the ocular bias that individuals have become accustomed. Additionally, sensory-creative pedagogy provides the participants a sense of influence over the temporality of space.

Spatial Empowerment Precedent Analysis

Tactics and strategies from the selected spatial empowerment precedents are codified on the evaluation rubric to expose similar and overlapping themes. The analysis indicates that facilitating hands-on multi-sensorial activities that connect to architectural precedents and architectural knowledge are beneficial in developing one's spatial skills and knowledge. Critical thinking can be advanced by documenting work, critique, and inducing creativity. Experimentation, creating spatial narratives, and provocation can incite creative thought. From the precedent analysis in figure 2.17, it appears that discourse is the dominant strategy for creating inclusivity in architecture and education. Additional strategies include: community building, collaboration, participation, negotiation, shared spatial practice, and the creation of common vocabulary. Spatial action can occur by subverting and/or appropriating the micro-environment. Intellectual resources are mobilized through creating a database. The strategy for implementing, monitoring, and evaluating spatial empowerment, which is in the control of the architect, is tackled by concentrating on a holistic bottom-up and top-down system.

Current architectural practice and pedagogy does not provide a successful method for spatial empowerment because empowerment is either not the priority or the method lacks a knowledge of teaching. The precedents place focus on the outcome and implications, whether it is a physical spatial product or intellectual capital. Therefore, combining the existing strategies can fill in the gaps in the spatial empowerment criteria outlined in figure 2.9. In addition, the precedents propose that participation empowers individuals. But, the scope of participation presented never fully allows individuals to dictate the process themselves.

Fig. 2.17 Opposite page. Spatial empowerment precedent analysis.

Domain | Strategy | Tactic/Tool/Content

Capacity Building

spatial skills & knowledge
- connect mathematics to architecture
  - human and architectural dimensions
  - geometry, surfaces
  - definition of architecture
  - geometric analysis of built environment
  - architectural representation
  - linking math, architecture, aesthetics
- dissemination
  - architectural precedent
- sensorial inputs
  - physical manipulation
- familiarity with space
  - walking tour
- thinking by doing
  - workshops

critical thinking
- documentation
  - event scores, posters, pamphlets, activity booklets, notations, videos
- creativity
  - openess/improvisation
- critique
  - provocation
- spatial narrative
  - questions
  - documentation/presentation

Inclusive Practice

architecture
- community building
- collaboration
- participation
- networking
  - value different competences
  - discourse

pedagogy
- common vocabulary
- negotiation
- shared spatial memories

Spatial Action

opportunities
- subversion
- appropriation
- micro-environment
  - happenings/performances

resources
- database
  - website

implementation, monitoring, evaluation
- macro-level
- micro-level
  - role of the architect

Legend

| Spatial Agency | Art Pedagogy | Elisheva Sadan | Archimath programme | Andrea Kenkmann | Sensory Creative | Participatory Architecture |

Fig. 2.18 Workshop 1 Day 4 .
Students enjoying their created space.

3.0

Spatial Empowerment Strategy

Fig. 3.1 Spatial empowerment theory overview.
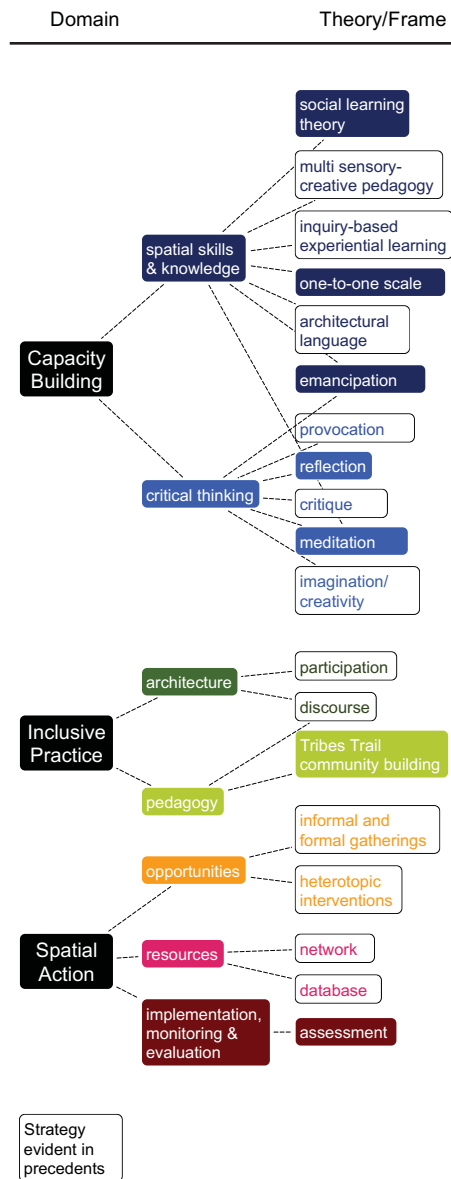
As part of this thesis, it was necessary to outline a strategy for the teaching of spatial empowerment. A spatial empowerment approach emerged through collating and dissecting the definition, the assessment rubric, and precedent tactics and methodologies. By working backwards from the evaluation rubric, a foundation and organizational strategy was established. You must know what you are looking for to understand how you are going to achieve it. The following spatial approach adopts the tactics presented by the precedents, but differentiates itself through the inclusion and elaboration of capacity building pedagogy, inclusive building activities, and spatial action strategies as show in figure 3.1. Constructivist learning, building at a one-to-one scale, the iterative process, meditation, micro-environment interventions, and common learning tools are examples of the divergent tactics in the suggested approach. The uniqueness in the proposed spatial empowerment method does not only lie its distinct approaches, but also in its amalgamation of existing strategies.

Although the overall approach is structured by the evaluation rubric into three domains, difficulty emerges when strategies and theories overlap. Pedagogical strategies to increase spatial knowledge, such as social learning, also relate to community building. Discourse promotes learning, critical thinking, and inclusive practice. The iterative process enables learning, participation, and spatial opportunities. These examples demonstrate that an array of cross-domain strategies. Domains must be recognized as artificial organizational constructs that do not demonstrate the complexity of spatial empowerment or its strategies. The following are strategies of spatial empowerment.

CB Capacity Building

Building capacity is the process of fostering of an individual's skills and knowledge in relation to the built environment. The thesis will focus on capacity building as the primary means for individual empowerment.

1 Architectural Knowledge and Skills

A space is never about one thing. It is a place for many senses: sight, sound, touch, and the unaccountable things that happen in between.

– Tadao Ando

a. Content of Architectural Knowledge and Skills

The thesis proposes that the knowledge needed by non-architects for empowerment is minimal. The aim is not for the individual to gain the 'expertise' of the architect, but to increase an individual's capacity to engage in spatial action and participate in spatial discourse. To achieve spatial action, one must understand space and how to create it. A basic knowledge of architectural terms and ideas is essential for the creation and communication of one's own ideas. Architectural knowledge can be viewed through many frameworks such as scientific, social, concrete, or ephemeral. The Archimath Programme study, Julia McMorrough's *Materials Structures Standards*, and Juhani Pallasma's *Eyes of the Skin*, encapsulate architectural concepts in a range of frameworks. The Archimath study indicates that dimensions, geometry, and architectural representation form architectural understanding. McMorrough's *Materials Structures Standards* contains a snapshot of primary information for architects such as measurement, orientation, volumes, form organization, boolean operations, structural systems, and materiality. In addition, spatial organizational principles such as: axial alignments, symmetry, rhythm, patterns, repetition, and portioning system are classified as essential design concepts.[59]
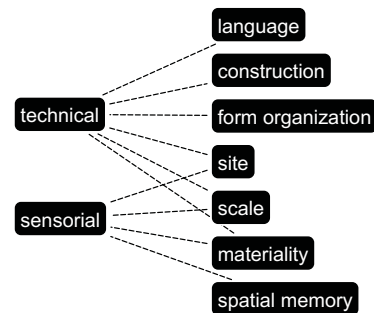
Fig. 3.2 Selected architectural content to build capacity.

59. Julia McMorrough, *Materials, Structures and Standards* (Beverly: Rockport Publishers, 2006).

60.   Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses,* 2nd ed. (Chichester: John Wiley & Sons, 2005), 9-13.

Pallasma's *Eyes of the Skin* emphasizes the haptic nature of space, such as materiality, time, and memory. These three sources provide individuals a repertoire of spatial building ideas and terms on which they may build through their own experiences.[60] In summary, individuals must understand geometry, scale, materiality, construction technique, measurement, form organization, hapticity, and context awareness for spatial production.

Discourse relies on increasing participants' language of architecture. The language of design can be used to understand architectural principles and promote confidence within individuals. Although it could be argued that architectural language should be adapted to suit non-architects, language is inseparable from professional practices. Language is used to define the practice. In architecture, a distinct complex language of materials, surfaces, sites, and processes exists. Architectural terms should be disseminated for non-architects to creating a common language between stakeholders. Common language facilitates effective communication, which is critical for successful interactions and mutual understanding.

b. Pedagogical Approach to Increase Architectural Knowledge and Skill Acquisition
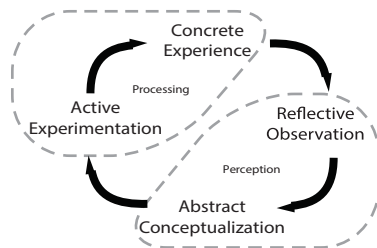
Fig. 3.3 David Kolb's Experiential Learning Theory.

Man's sense of space is closely related to his sense of self, which is in an intimate transaction with his environment. Man can be viewed as having visual, kinaesthetic, tactile, and thermal aspects of his self which may be either inhibited or encouraged to develop by his environment.

- Edward Hall, *The Hidden Dimension*

We can define what technical knowledge we may need for spatial empowerment, but how do we teach it? First, we have to view how knowledge is learned through cognitive and socio-cultural perspectives. The cognitive framework argues that knowledge is an internal process of assimilating new information or experiences. The socio-cultural viewpoint emphasizes that knowledge is constructed through sociocultural practices and contexts within a

defined collective. Individual cognitive and sociocultural learning are considered essential to intellectual change, therefore integrating both maximizes learning opportunities.[61] Due to the cognitive and sociocultural factors of learning, a multitude of teaching strategies exist. The thesis identifies inquiry-based, experiential play, social learning, sensory-creative, multi-sensorial, one to one building, and emancipation pedagogy as effective approaches to expand spatial knowledge.

Inquiry-based, experiential play, and social learning pedagogy fall under the broad constructivism theory which is defined by writings from John Dewey, Jean Piaget, David Kolb, and Albert Bandura. Knowledge development is perceived to be encouraged by sustaining and building curiosity, connecting and scaffolding concrete and abstract experiences, and learning from and with others.[62] Dewey's inquiry-based learning theory allows students open exploration of their individual spatial interests. This fosters student engagement and motivation during the teaching process and places student interests, questions, and observations at the core of the learning experience. Inquiry-based learning can be achieved by providing limited direction, allotted time, and opportunities for students to experiment. Student interests can be guided and revealed through posing questions and encouragement. After the open exploration, which can be considered a 'concrete experience' of information, Kolb argues that abstract conceptualization is necessary. Abstract conceptualization processes the input into an idea, which then leads to active experimentation of the same idea. After experimentation, reflective observation occurs, which situates the learning in context by validating or invalidating the data into meaning.

Kolb's cyclical cognitive learning model fosters an iterative learning process where knowledge is built upon existing knowledge. Dewey's and Piaget's constructivist view of learning supports the idea of 'scaffolded' learning. Individuals must tap into their existing knowledge to create further knowledge and meaning. The iterative design process also allows for generative knowledge to transpire and scaffold. In addition to Kolb's, Dewey's and Piaget's theories, learning can be heightened through utilizing the surrounding environment and people as 'teachers'. Space is inherently embedded with information, such as geometry and measurement, which can be made explicit. Bandura presents the notion that learning occurs

61. Anita Woolfolk Hoy, Philip Winne, and Nancy Perry, *Educational Psychology,* 5th ed. (Upper Saddle River: Prentice Hall, 2012).

62. Anita Woolfolk Hoy, Philip Winne, and Nancy Perry, *Educational Psychology,* 5th ed. (Upper Saddle River: Prentice Hall, 2012).
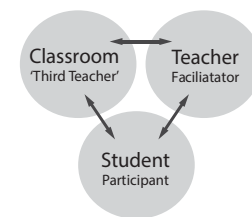
Fig. 3.4 Albert Bandura's Social Learning Theory.

through social interactions. People learn from each other, therefore it is important for teachers to accommodate group activities. Dewey, Piaget, Kolb, and Bandura provide a framework and holistic process to design engaging and effective learning experiences.

Anne Svelle's sensory-creative pedagogical method alongside Ladan Shams' and Aaron R. Seitz's article *Benefits of Multisensory Learning,* emphasizes the importance of multisensory activities. Multisensory training and interactions produce greater and more efficient skill acquisition in adults. Activities that tap into the multisensory learning mechanisms create optimal learning since human brains have evolved to adapt and learn in a naturally multisensory environment.[63] Adult learning through multisensorial activities is dependent upon congruency and relationship of the information provided by each of the senses. Therefore activities to encourage architectural knowledge and skills should connect to all senses without conflicting inputs. Conflicting inputs leads to obscurity and inadequate information to create meaning. Examples of multisensorial activities include: activating all senses to explore an environment to increase contextual awareness, representing, demonstrating, and communicating architectural concepts, and expediting language development through auditory, visual, and tangible means.

Building at one-to-one scale, a tactile multi-sensorial activity, is a pedagogical strategy to foster contextual awareness, dimensionality, measurement, construction technique, and material understanding in individuals. At a one-to-one scale, surroundings become a conscious factor in spatial production. One must acknowledge and interact with the context to build. This form of building also promotes authentic comprehensive material understanding and experience of construction techniques. It allows for material manipulations to be tested and assessed. Furthermore, one-to-one building confronts the maker with the relationship between their own body and the space they are creating. The body in space provides us with the basis of our physical experience of the world. It allows us to understand the dimensions, aspects, dynamics and properties of space.[64] It also allows us to physically and mentally orient ourselves. Through our bodies, we relate to others through shared corporeal experiences. Therefore, by incorporating and emphasizing one-to-one scale, participants will be able to position themselves in the world. The ambiguities and error in scalar

Fig. 3.5 Building at a one-to-one scale increases spatial decision-making capacity.

63.   Ladan Shams and Aaron Seitz, "Benefits of Multisensory Learning," *Trends in Cognitive Sciences*, 2008, 411-17. http://www.faculty.ucr.edu/~aseitz/pubs/Shams_Seitz08.pdf.

64*.*   Victoria A. Cook and Peter J. Hemming, "Education Spaces: Embodied Dimensions and Dynamics," *Social & Cultural Geography* 12, no. 1 (2011): 1-8.

representation are diminished with this type of practice.[65]

65. Bjögvinsson, Pelle Ehn, and Per-Anders Hillgren, "Design Things and Design Thinking: Contemporary Participatory Design Challenges," *Design Issues* 28, no. 3 (Summer 2012): 101-16.

❷ Critical Thinking

Critical thinking is imperative for empowerment as an individual's capacity to make spatial decisions goes beyond acquiring skills and knowledge. For an individual to become 'spatially empowered', they must be able to inform, implement, monitor, and assess their decisions. Without critical thinking, meaningless and thoughtless spatial decisions will be made. Critical thinking can be maximized through several strategies: provocation, precedents, meditation, creativity induction, conflict, and the iterative design process.

a. Pedagogical Approach to Foster Critical Thinking

Critical thinking can be maximized through provocation and redefinition of the problem. Provocation tactics, such as exaggerating, reversing or distorting information moves thinking forward by breaking current thinking patterns. Provocation expands the realm of focus, which can broaden the search for new ideas.[66] Questions, such as "Why? How?" lead to fresh ideas. Critical thinking must be expanded to challenge all thinking, not just solutions to problems. Critical thinking requires an aspect of imagination, as it is necessary to make sense of perceptions, create world views, and acknowledge the limitations of possibilities.[67] This imagination allows us to rethink our relationship to the world and to one other, which it critical for empathetic social relations and understanding. In addition to provocation, examining precedents allow critical thinking and imagination to develop. The critiquing process enables spatial awareness by analyzing the successes and failures of existing solutions and proposals. From the analysis, a coherent understanding of approaches can emerge and provide validity, robustness, and meaning to future proposals.

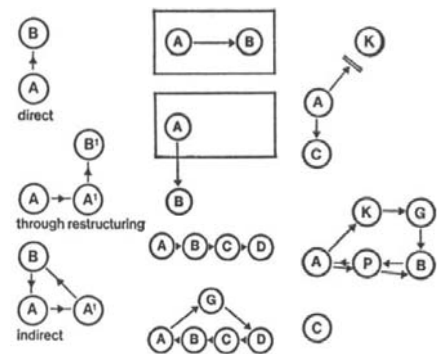

Fig. 3.6 Examples of De Bono's lateral thinking tactics.

66. Edward De Bono, *Lateral Thinking: A Texbook of Creativity.* (London: Penguin, 1970), 41.

67. De Bono, *Lateral Thinking*, 274.

b. Meditation

Increasing critical thinking can also be achieved through meditative practice. Meditative practice brings a heighten awareness and consciousness of an individual's conditions and

68. Maria Napoli, Paul Rock Krech, and Lynn C. Holley, "Mindfulness Training For Elementary School Students," *Journal of Applied School Psychology* 25, no. 4 (2009), 102.
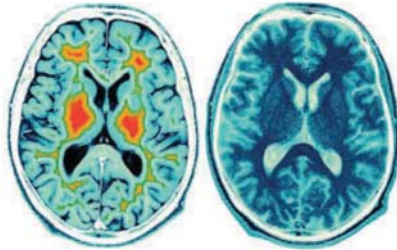
Fig. 3.7 The difference in brain activity during meditation. Orange spectrum colour indicating increased brain activity due to meditative practice.

69. Matthieu Ricard, *The Art of Meditation, (*London: Atlantic Books, 2010), 24.

70. J. L. Hanson et al., "Structural Variations in Prefrontal Cortex Mediate the Relationship between Early Childhood Stress and Spatial Working Memory," *Journal of Neuroscience* 32. no. 23 (2012): 7917-925.

experiences. Meditation fundamentally increases an individual's spatial understanding, decision-making skills, and lateral thinking. The following studies touch on the benefits of meditation as it relates to creativity, empowerment, stress, cognitive function, and physiology. The research provides reasoning for meditation where, if applied to architecture, could be a catalyst of meaningful spatial solutions. A study conducted by Maria Napoli proposes that, "When students use mindfulness in their learning processes, they utilize creativity, experience cognitive flexibility, and are able to better use information to enhance memory for instructional retention."[68] The participants end up feeling increased control over their lives. This control is part of the definition of empowerment.

Matthieu Ricard, a prominent meditation practitioner, indicates that current scientific research reveals that humans are only using 10% of their neurological capacity. He proposes that meditation is the key to activating the other 90% of the brain. The potential to unleash the creative potential and empowerment of the mind through meditation is extraordinary.[69] Meditation induces individuals to be open to the creative process and active imagination, which potentially connect individuals to the source of the creative impulse. Only when individuals are open, can individuals investigate what moves them. Neurological studies prove that THETA and/or ALPHA brain state, where problem solving and creative visualization occurs can be induced by meditative practice. Meditation training also reduces stress and improves focus. Hanson et al.'s study in *Structural Variations in Prefrontal Cortex Mediate the Relationship between Early Childhood Stress and Spatial Working Memory* finds that stress negatively impacts higher level thinking skills in the prefrontal cortex, which is related to the capacity for spatial understanding.[70] Stress reduces grey and white brain matter, which affects social, cognitive and physiological function. By reducing stress through meditation, cognitive function and sensory perception can flourish. The prefrontal cortex of the brain "is central to attention, working memory, cognitive control, and emotion regulation processes, with damage to this region leading to impairments in planning, goal attainment, problem-solving ability, and the regulation of emotion." The reduction of stress enables an increase of activation in spatial working memory.

Meditative practice allows individuals to connect their existing knowledge, experiences and 'big ideas'. 'Big Ideas' are

enduring world understandings and intellectual frameworks.[71] For example, "knowledge is power", would be considered a 'big idea.' By making personal connections to 'big ideas', individuals can engage intellectually and intuitively and their explorations of these issues become the basis of their work. Before individuals associate to 'big ideas', they must expose their existing knowledge and experiences. All individuals have diverse points of reference and spatial memories, so space is experienced differently. Spatial memories orient and locate us and space and are an inseparable part of psychological, physiological and aesthetic experiences. Our experiences of 'spaces are related to our memories, which provide us with a framework of references that allows us to 'read' and construct spaces.' Evoking spatial memories through meditation is vital as it provides a 'spatial reference network', which develops and produces spatial understanding and meanings.

Guided meditation exercises can be a tool to assist in meditative practice. Guided meditation exercises can feature and focus on the four foundations of mindfulness: body, feelings, mind, and phenomena to explore spatial empowerment. Stahl and Goldstein categorize meditation into two types: insight and concentration.[72] Insight allows the mind to focus on the mind, body and senses without altering the experience. Concentration meditation focuses on imagery or mantras to bring greater insight to the meditation focus. Both types of meditation can be explored in guided meditations. For example, meditation scripts can guide individuals to increase spatial perceptions by activating the sensory system to reveal: contextual awareness, distance regulation between context and people, movement in space.

c. Creativity

Habits... reduce man to the status of a conditioned automaton. The creative act, by connecting previously unrelated dimensions of experience, enables him to attain a higher level of mental evolution. It is an act of liberation – the defeat of habit by originality.

- Arthur Koestler, *The Act of Creation*

71. Sydney Walker, "How Shall We Teach? Rethinking Artmaking Instruction," *Teaching Artist Journal* 4, no. 3 (2006): 190-97.

72. Bob Stahl, and Elisha Goldstein, *A Mindfulness-based Stress Reduction Workbook.* (Oakland: New Harbinger Publications, 2010), 8.
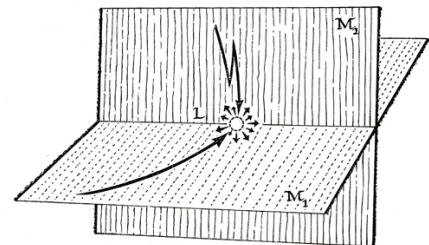
Fig. 3.8 Koestler's image of the bisociation process. Conflicting or unrelated ideas collide. The intersection of previously unrelated thoughts led to creative thinking.

Fostering creativity may not be perceived as a direct correlation to spatial capacity building, but it is an integral element in the design and decision making process. The absence of creativity does not facilitate new thinking or awareness, which leads to intellectual stagnation. Creative thinking is the combination and application of information which relies on one's ability to see relationships between the information. Arthur Koestler's *The Act of Creation* elaborates on bisociation as a strategy to generate creativity. Bisociation the termed used for the collision and integration of thought. Old matrixes of thought, if complex and unrelated to the new matrix, must be bisociated for new understanding to arise. Within an aesthetic experience, creativity is provoked by the bisociated juxtaposition of two matrices. It is 'perceiving of a situation or idea... in two self-consistent but habitually incompatible frames of reference.'[73] Therefore, to stimulate spatial creativity, one must exploit the habitual spatial understanding of the individual to create a shift of focus to an alternate matrix. New relations and correspondences between spatial meanings, aesthetics, and understanding can transpire.

Additional creativity techniques include aleatoricism, improvisation and problem solving. Koestler suggests that unconscious thought plays a crucial role in creative process. The role of spontaneous intuition, unconscious guidance, and leaps of the imagination, are critical. During a period of 'incubation', the different levels of consciousness activate and cross-fertilize the various thought matrices. Through bisociation, knowledge, meaning, and experiences are synthesized into a new thought, which advances intellectual capacity. The act of bisociation can be associated with the notion of conflict. Idea generation is bolstered by conflict as opposing world views invigorate orthodox ideas and methods of action. Conflict leads to discourse, where the resolution between rival ideas generate a superior solution.

73. Arthur Koestler, *The Act of Creation,* (London: Hutchinson & Co, 1964), 35.

IP   Inclusive Practice

Cities have the capability of providing something for everybody,
only because, and only when, they are created by everybody.

- Jane Jacobs

Inclusivity, a central component to social legitimacy, is achieved
through participation, discourse, and the community building in
the pedagogical process. As discussed in the spatial empowerment
precedents, participation and its various manifestation in the
design process is critical for inclusivity. Genuine participation is
most effective in subtle everyday decision making rather than
through more formal mechanisms. Involvement must be supported
by everyday shared decision making to reduce participation to
mere tokenism.[74] Discourse encourages inclusive social practices
through ensuring perspectives are not excluded from the dialogue.
The process of discourse also includes valuing and advocating for
feedback. Feedback ensures dialogue is ongoing and sustained.
In addition, if the language of spatial empowerment is accessible,
appropriate, clear, and free of jargon or patronizing speech,
individuals can take control of their message.[75] Discourse also
enables the creation of a mutual language and understanding within
a community. This leads to a communal bond which may manifest in
a common spatial vision.

The Tribes Trail, a teaching program, can be exercised as
the community building strategy.[76] Community building ensures
that democratic values lead to conditions that enable legitimate
user participation, encourage competencies, and engagement in the
spatial empowerment process. The Tribes Trail begins with creating
inclusion, then promoting ones' influence and valuing differences.
Inclusion is created through differentiated instruction which ensures
all individuals have the opportunity to reach success. Differentiated
instruction strategies include flexible learning groups, choice,
accommodating developmental levels, and opportunities to share
feedback, creating respectful tasks, and sharing the responsibility
for learning. Acknowledging and facilitating an individual's choice
in selecting materials, site, working groups, and spatial intention,

Fig. 3.9 Inclusive practice.

74.   De Carlo, "Architecture's Public," 4.

75.   Kenkmann, "Adapting and Designing
Spaces", *11-24.*

76.   Jeanne Gibbs, *Reaching All by Creating
Tribes Learning Communities* (Windsor: Center
Source Systems, 2006).

Fig. 3.10 The Tribes Learning Community Trail

43

initiates ownership and control over decisions. Valuing differences and bringing awareness to one's influence fosters an environment of respect. From there, a community can be established by working together creatively. For example, collective building activities create shared responsibility and ownership of space. Individuals and groups can potentially contribute to spatial solutions. The sense of ownership, motivation, and pride in a place can encourage bonds within groups of people and adds a sense of togetherness in an environment.

SA   Spatial Action

Heterotopias are real spaces within society where utopian impulses are realised.

-Carol Wild, *The Art and Design Classroom as a Site of Performativity*

Spatial action is the physical indicator of spatial empowerment. Its actualization is dependent on a myriad of variables. Three variables that the thesis will define are: opportunities, resources, and the ability for implementing, monitoring, and evaluation. The thesis proposes two types of spatial actions which can provide capacity building and inclusive practice opportunities. These are micro environment interventions and group workshops. Intellectual resources are mobilized by the creation of a guidebook.

77.   Carol Wild, "Making Creative Spaces: The Art and Design Classroom as a Site of Performativity," *International Journal of Art & Design Education* 30, no. 3 (2011): 423-32.

Interventions and tactical urbanism are spatial opportunities in which individuals can demonstrate spatial action. An intervention can act as a heterotopic space since it can be a 'place that represents, contests and reverses culture by allowing difference.'[77] For instance, Spatial Agency proposes that spatial action can result in the appropriation and subversion of existing space. Appropriation and subversion contradicts spatial normalcy in its occupancy, which leads to critique and reflection. In addition, heterotopic spaces act as sites for exploration, transition, and protest. Alternative interactions, aesthetics, processes, and pedagogy can be explored by individuals seeking change. Interventions also allow the

expansion of spatial practice imagination, as they can be executed in diverse contexts and conditions. Interventions in individual spatial empowerment occur on the micro-environment level. Examples of micro-environment interventions that individuals may currently partake include: gardening, redecorating a living room, or placing a lawn chair on a front stoop.
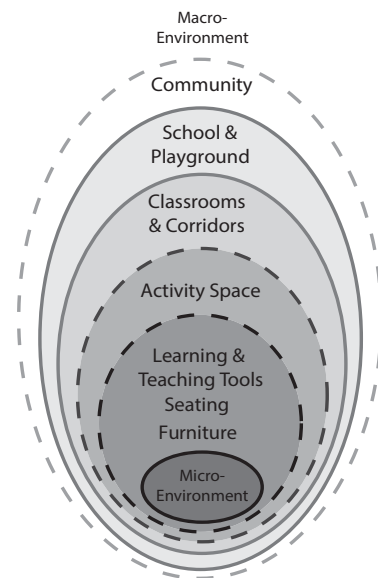
By activating the micro-environment, a 'more genuine shared organization and (re)creation of space can take place on an everyday basis.'[78] An individual is constantly making spatial decisions by positioning themselves in relation to others and organizing their immediate environment with the available resources. The continuous engagement and adaptation of a spatial environment, fosters a dynamic and transient viewpoint of space. It is important to recognize that spatial decisions can be made more readily in micro-environments and frequently occupied spaces. Spatial decisions on an intimate scale does not necessarily demand high costs. Therefore, individuals are more equipped to renegotiate and change spaces on the micro-level compared to larger spatial scales. Heterotopic spaces on a micro-level create a D.I.Y. ethos, which is a core facet of spatial empowerment.[79]

Informal and formal gatherings, such as workshops, can be the medium for spatial empowerment opportunities. Formalized workshops enable direct communication and interaction between facilitators and individuals. Without the collaboration of facilitators and individuals, capacity building and inclusive practice cannot occur. Workshops are primary research tool for this thesis. Commonly, resources are mobilized by creating social, political, and economic networks. For intellectual resources, data organizational frameworks, such as online information depositories and resource databases provide access for individuals. The thesis does not provide specific strategies to mobilize intellectual resources, rather it offers a guidebook and workshops as a tool. The guidebook contains spatial empowerment information and references. The workshops bring together individuals, which expands social connections.

The capacity and ability for one to implement, monitor, and evaluate the spatial empowerment is manifested self-referentially in the spatial empowerment criteria and strategy. The thesis research suggests an approach and assessment rubric, figure 2.9, for evaluation.

78. Kenkmann, "Adapting and Designing Spaces", *11-24.*

79. Claire Bishop, "Antagonism And Relational Aesthetics," *October 110 (2004): 51-79.*

Fig. 3.11 Micro-environment to the macro-environment in a school setting

Domain	Theory/Frame	Tactic

(role of the architect-teacher/ tool)

materiality, geometry, measurement, dimensions, construction technique, hapacity, architectural representation, scale, design principles

spatial skills & knowledge

Capacity Building

critical thinking

inquiry-based experiential learning

social learning theory

multi sensory-creative pedagogy

one-to-one scale

architectural language

emancipation

provocation

reflection

critique

meditation

imagination/creativity

provide various forms of representation of information

positive encouragement

connect to participant interest

scaffold learning through iterative process

explicate data in surroundings

promote social interactions

collaborative learning activities

activate senses

multi-sensorial activities

one-to-one building activities

connect to space to human scale

facilitate discourse

provide minimal guidance

common 'object'

ask questions

distort, reverse, or exaggerate reality

architectural precedent

analyze existing context

guided meditation scripts

bisociation by defining conflicting matrices

instigate conflict

improvisation, chance, problem solving

Fig. 3.12 Summary of spatial empowerment strategy

Domain   Theory/Frame   Tactic

Inclusive Practice

architecture
- participation
  - involve participant in all stages spatial empowerment
  - create network

pedagogy
- discourse
  - create common vocabulary
  - promote discourse
- Tribes Trail community building
  - allow choice
  - value differences
  - differentiate instruction
  - respectful tasks
  - collaborative learning activities
  - opportunities for feedback

Spatial Action

opportunities
- heterotopic interventions
  - manipulate the micro-environment
  - appropriate space
  - subvert space
- informal and formal gatherings

resources
- network
  - workshops, classes, lessons
- database
  - guidebook

implementation, monitoring & evaluation
- assessment
  - evaluation rubric

Legend

Spatial Skills & Knowledge	Architecture	Opportunities	Implementation, Monitoring & Evaluation
Critical Thinking	Pedagogy	Resources	Architectural Knowledge

3.3   Summary of Strategy

The approach for spatial empowerment is summarized in figure 3.12. The proposal emphasizes capacity building strategies as the means for empowerment due to the influence of Foucault's and Freire's knowledge and power theory and the focus on the individual. Capacity building revolves around the individual, whereas inclusive practice resides in architectural and pedagogical process. The summary also illustrates some of the coincidental strategies within the domains. For example, social learning theory contains community building and participation strategies.

3.4   Spatial Empowerment Implications

The implications of the spatial empowerment strategy on architectural and educational practice include the adoption of a modified architectural process, transformed lesson plan, new stakeholder roles and relationships, and the development of a common 'tool'.

The capacity building pedagogy and inclusive practices necessitates that the current architectural process, which is composed of three phases of architectural operation, is adjusted to reflect the spatial empowerment strategy. Giancarlo De Carlo in *An Architecture of Participation*, articulates the absence of suitable architectural processes within current architectural practice.[80] Traditionally the sequence of phases are irreversible and are considered in isolation. Phase one, the definition of the architectural problem is typically wrought with inaccuracy and is unsystematic. Phase two, which is the elaboration of the solution generally presents a singular response which concedes that no alternative exist, besides economic possibilities. Evaluation of the results, phase three, is rarely conducted since architecture is seen as inimitable, therefore no existing assessment strategies can be valid. The architectural process must be disrupted and revaluated to become a tool for spatial empowerment. A balance between openness and rigidity must occur to allow for an alternative engagement of space, such

80.   De Carlo, "An Architecture of Participation," *74-79.*

as micro-environment interventions. As an open process, spatial production welcomes aesthetic relaxation, participation, iterative learning, and a multiple interpretations. Architectural operations are reconstructed into the iterative process, where its sequence is defined through experience and participation. This allows multiple opportunities for many individuals to become involved in all domains and levels of spatial empowerment. Iterative processes also interrupt the current architectural progression by advocating for creative incompletion. Space is not fixed, solid or complete. It can be changed, altered, reclaimed, and destroyed.[81]

The aesthetic outcome of spatial empowerment would reflect the creator's needs, desires, and spatial understanding. The resultant space would respond to the existing context and would demonstrate an understanding of design practice. The aesthetics would reflect intention. Material manipulation would be evident since trial and error would allow the individual to determine whether the aesthetic outcome is to their liking. Resultant space would be interesting and engaging as a result of the deliberation in action and the embedded meaning and memories in the space. Materiality is crucial because it will determine the aesthetics of the created space and construction techniques learned. For example, the manipulation of textiles would result in a different aesthetic outcome than stacking boxes. In addition, different construction techniques and materials relate to the context uniquely

The influence of the spatial empowerment theory on educational pedagogy can be described through the evolution of the lesson plan. The lesson plan, an educator's 'blueprint', currently consists of three parts: *minds on*, *activity* and *consolidation*.[82] *Minds on* exercises prepare students for the activity. For example, *minds on* can be an opportunity to allow students to connect the topic of study to personal experiences. The *activity* component of a lesson plan is where the bulk of the learning and allotted time occurs. *Consolidation* provides time for students to reflect on their learning to deepen their understanding. The structure, planning and implementation of the lesson plan can be further broken up into tasks: identify learning goals, post learning goals for students, activate prior knowledge, assess prior knowledge, present new learning, check for understanding, practice new learning, scaffold new learning, assess practice work, review and consolidate learning, apply learning to a new context, and assess learning.[83] Although the

81. Pallasmaa, *The Eyes of the Skin.*

82. Literacy and Numeracy Secretariat, "Learning Blocks for Literacy and Numeracy." *The Capacity Building Series.* http://www.edu.gov.on.ca/eng/literacynumeracy/inspire/research/LearningBlocks.pdf.

83. Melissa Seco and Mauro Paluzzi, eds., *Linking Learning Goals, Success Criteria, Descriptive Feedback and Differentiated Instruction in Effective 3-part Lessons* (Toronto: Ontario Institute for Education, 2013).

purpose of the three parts of the lesson plan and its tasks are relevant to the spatial empowerment approach, the structure is modified to include the iterative process, participation and situational factors. Instead of three parts, the lesson plan becomes composed of many parts.

The role of the architect in the spatial empowerment process becomes one of a facilitator and architect-teacher. The facilitator creates conditions which support a variety of interactions that will provide opportunities for meaningful spatial learning to occur. The facilitator does not empower, the individuals empower themselves. As shown in the spatial empowerment approach, the facilitator can guide individuals into collective spatial authorship in workshops, which create new possibilities and opportunities for knowledge negotiation. The role of the facilitator is not static. The responsibilities, tasks, and pedagogical strategy shift according to the most effective practice. When necessary, the architect-teacher acts as the 'expert', dispensing knowledge and critique. As the 'expert', the facilitator can distill information and translate it into lesson plans as a tool for self-directed learning. Material and site selection for spatial interventions are also initially dictated by the facilitator.

The facilitator learns from and with the spatial users through reflective feedback and reflection the participants' spatial ideas. Architects craft the built form from static material, whereas the teacher-architect fosters a dynamic continuous social space. Concurrent to the augmentation of the architect's role, the participant (or the user) is transformed to become an active co-creator of knowledge, space, and community.

As discussed in Ranciere's *The Ignorant Schoolmaster*, a common 'object' is needed for the emancipatory teaching process. For instance, *Project Other Ways* distributed pamphlets, activity booklets, notations, posters and videos to encourage radical pedagogy. The thesis proposes a guidebook, *1-to1: A Guide to Spatial Empowerment*, as the tool for spatial empowerment. The guidebook is the source of connection and commonality between the facilitator and individuals. It can be used to verify learning, increase capacity, provide resources, and facilitate spatial action.

Fig. 3.13 The guidebook as a common tool.
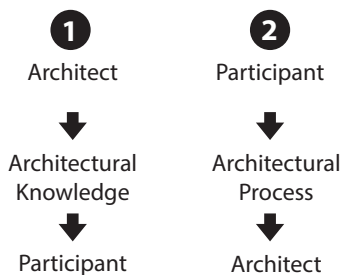
3.5   Spatial Empowerment Challenges

Difficulty in strategizing for spatial empowerment is due to its complex multidimensional nature. There are many considerations that could impede progression on the spatial empowerment spectrum. Issues raised in Sabine Marschall's study *Architecture as Empowerment: The Participatory Approach in Contemporary Architecture in South Africa*, puts forth challenges that are applicable to the spatial empowerment process.[84] Potential mistrust and disrespect between the facilitator and the participants; misrepresentation; and differing expectations and opinions could lead to a breakdown in discourse. Obstacles on the systematic level could include the failure of the social systems to provide or create opportunities for diverse competencies to subsist. Unclear and undefined relations to praxis and individual roles would also lead to weak spatial discourse. Limited alloted time, resources, and energy reserved for spatial empowerment could become problematic.

The inability and resistance of the facilitator and individuals to adapt and adopt to new pedagogical strategies and architectural practice restricts the empowering process. Considerations that could inhibit the facilitator in the spatial empowerment include a lack of feedback from non-architects and the inability for interaction and collaboration between individuals. For individuals, over guidance could hinder learning and empowerment. Additionally, pedagogical limiting factors include too many concepts presented simultaneously, an ambiguous approach, poor material and site selection, inaccessible language, and a lack of coordination. To combat the challenges of spatial empowerment that are within the facilitator's influence, there must be continual reflection, assessment, and modification of methodology to reach the desired outcome. On a systematic level, factors that impede spatial empowerment could be mitigated through education and bottom-up grassroots approach. Many spatially empowered individuals could have the authority to make organizational changes.

84.   Sabine Marschall, "Architecture as Empowerment: The Participatory Approach in Contemporary Architecture in South Africa." *Transformation: Critical Perspectives on Southern Africa* 35 (1998), 108.

4.0 Workshops

The workshops, as a spatial intervention strategy, were used to apply and test the ideas of increasing spatial decision making capacity. Essentially, the workshops acted as a test for building capacity, practicing inclusivity while laying the foundation for spatial action. 'Architect'-led workshops is not a novel concept. It is an existing strategy that involves non-architects in architectural processes and teaches architectural knowledge and skills.

Current relationships in workshops between architects and participants can be defined into two conditions.[85]

1 Participants learn about architecture from architects

2 Participants inform the design process for architects

The conditions of current architect-led workshops set a flow of intention from the architect to the participant and the participant to the design outcome. Dries can Wagenberg's study, Susanne Hofmann Architects/die Baupiloten, and No. 9 are examples of architect-student workshop programs. By analyzing existing programs, a basis to compare, analyze, and synthesize methodologies, guided an approach for the thesis workshops. Although the size, scope, intention, and other variables of the projects differ from the thesis workshops, relevant architect-student pedagogy was used as a reference point.

1 Architect
↓
Architectural Knowledge
↓
Participant

2 Participant
↓
Architectural Process
↓
Architect

Fig. 4.1 Existing relationships between architects and participants in workshop-based programs and studies.

4.1 Workshop Precedents

Dries van Wagenberg Study

In 1980, an elementary school teacher and an architect taught a group of grade 3 students the principles of designing an ideal classroom. The study demonstrated that students with architectural training had significant capabilities to observe and design environments compared to students who did not receiving training.[86] Children as young as eight years old can be taught to

85. Jan Granath, "Architecture - Participation of Users in Design Activities." *Architecture: Participation of Users.* 2001, 1. http://www.design4change.com/LinkedDocuments/Architecture - Participation of users in design activities.pdf.

86. Dries Van Wagenberg, Miriam Krasner, and Leonard Krasner, "Children Planning an Ideal Classroom: Environmental Design in an Elementary School," *Environment and Behavior* 13, no. 3 (1981): 349-59.

participate in the designing of their own environments.

The structure of the session began with the explanation of the study objective and descriptions of design techniques. After the introduction, students worked alone and in pairs to analyze the existing classroom by building a scale model. They discovered the concept of scale by using a square on their graph paper to represent a classroom floor tile. The position and scale of walls, doors, window, furniture, and classroom elements were determined by physically measuring their relationships. The data was then translated to scale on cardboard. Through measuring and constructing a model, students learned the spatial qualities of their classroom and its relation to the scale of their body. In addition to recording measurements and architectural elements, activities of the classroom were noted. Documenting activities revealed the location of static and dynamic spaces.

In another activity, students conceptualized their classroom as part of the school. The students temporally constructed classroom floor plans out of blocks and cans. With the blocks and cans, students created variations of the school floor plan. Students submitted their favorite floor plan and each was built into a professional scale model. The physical model assisted in the visualization, critique and analysis of architectural designs. Through voting by the students, two floor plans were selected. The students built the selected designs in cardboard. During the workshops, the students were encouraged and coached by the architect with insightful comments and anecdotes. The meetings culminated with a group discussions and a preview of the following week's schedule. The discussions focused on positive aspects of the student's work and learning progress.

To evaluate the effects of architectural training, all students, those who participated in the study and those who did not, made a floor plan of their own room at home. In the final session, students had one and a half hours to design their ideal living and sleeping room. The students presented their design to the class and evaluators. For assessment, two architects, who were experienced teachers in the Technical University Eindhoven, reviewed all the floor plans. The architects did not know which students were trained and which were not. The architects were asked to determine the 'skillfulness with which the floor plans were made.' The assessment
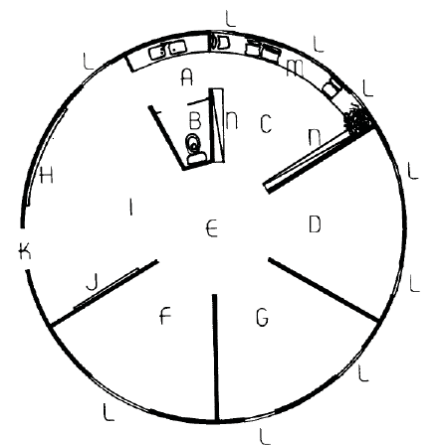
Figure 1

A   Wash Area
B   Bathroom
C   Library
D   Science Area
E   Center for the Teacher
F   Area for Visitors and
    Special Projects
G   Game Area

H   Blackboard
I   Community space;
    Instructional Area
J   Bulletin Board
K   Entrance
L   Windows
M   Bench with Cushions
N   Cabinets with Books

Fig. 4.2 Winning student floor plan design from Dries Van Wagenberg's study.

53

from the architects indicated that the trained group of students designed better floor plans than the control group.

In the second evaluation, Dries van Wagenberg's study hypothesized that trained students would illustrate spatial complexity through the number of elements in their floor plan. The resultant designs supported the hypothesis since the trained group drew more elements such as doors, wall, furniture, windows, entrance, and light fixtures than the control group. Architectural training had given a broader repertoire of elements to consider and the knowledge of basic elements to place in a bedroom floor plan. The trained students were able to immediately utilize their newly learned skills to solve spatial problems. Dries van Wagenber's study illustrates a critical connection between design, education and building capacity. When students learn the basic spatial skills and information, they become increasingly interested in learning about their surroundings. This creates individuals who have the desire to become involved in the decisions concerning changes in their own environment.[87]

Susanne Hofmann Architects/die Baupiloten

Susanne Hofmann Architects/die Baupiloten, an architecture firm and university student group, employs participatory practices to reveal qualitative spatial desires of the future users. Participation is an integral aspect to their design methodology. The users of the space are viewed as 'experts' of their environment, therefore their atmospheric needs and demands are valid and necessary to incorporate into the design. During the design of Erika-Mann Elementary School, 9 to 13 year old elementary students, the 'experts' in the scenario, were asked to draw visions of their school. The design problem was introduced to the students by the phrase, 'The path through the garden of the future'. The open-ended phrase provoked multiple descriptive interpretations of fantastical and sensuous depictions of their imaginary proposal.[88]

Spatial intentions were communicated by the children on an emotional and atmospheric level. Die Baupiloten architecture students translated the children's work into spatial photo montages, physical models, and prototypes. Throughout the process, die Baupiloten presented their design proposals to the children for

87.   Van Wagenberg, "Children Planning an Ideal Classroom," 104.

88.   Die Baupiloten, "Architecture is Participation: Potentials and Limits." http://www.baupiloten.com/en/.

Fig. 4.3 Susanne Hofmann Architects/die Baupiloten workshop. Asking for student feedback.

feedback. Children were invited to test and evaluate the prototyped spaces. Their likes and dislikes of the proposals were clearly articulated. Susanne Hofmann Architects' design process acts as a form of research, where architecture becomes an experimental, participatory, and empowering learning ground.[76] In addition, the design unit, which consisted of die Baupiloten, the client, and Susanne Hofmann Architects, is a model of participatory liaisons between architects, teachers, clients, students, and end spatial users.

No. 9

No. 9, a Toronto based arts organization 'that uses art and design to bring awareness to environmental concerns', has facilitated several programs between the architects and elementary school students.[90] From September 2011 to 2014, No.9 collaborated with the Toronto District School Board to introduce Grade 7 students to sustainable urban planning and architectural design. The intention of the program was to connect 'real world' interdisciplinary experience of the architectural profession with Grade 7 curriculum and provide eco-literacy learning in the classroom. Students and teachers worked with architects to solve relevant urban and architectural problems over the course of four days.

Day one introduces students to sustainable urban design through precedents, a neighbourhood walk, and discussion. On day two, an urban plan is derived from the discussions on day one. Ideas of scale and spatial qualities were introduced through a model making activity. Site planning, which responds to the design problem, is developed through drawings and mixed media collages. After students gain an understanding of the overall urban planning strategy, they are assigned a program and site to design by the program facilitators. Each group of students critique and explore their site through sketches and precedents. On day 3 and day 4, students build scale models influenced from day 2 sketches to fit onto the site. Photographs, taken by the students, document their progress. The program culminates with student presentations in front of teachers, architects, city officials, and classmates. Students are given the opportunity to explain their vision for a sustainable city.

Fig. 4.4 Susanne Hofmann Architects/die Baupiloten Erika-Mann Elementary school.

89. Susanne Hofmann, "The Baupiloten: Building Bridges between Education, Practice and Research," Architectural Research Quarterly 8, no. 2 (2004), 121.

90. No.9 Contemporary Art & the Environment, "Imagining My Sustainable City." http://www.no9.ca/mission.php.

Fig. 4.5 No. 9's public exhibition of student's work from Imagining My Sustainable City Program.

Workshop Precedent Analysis

Tactics and strategies from Dries can Wagenberg's study, Susanne Hofmann Architects/die Baupiloten and No. 9 are summarized in the figure 4.6.

The lesson plan is broken up into various categories to better understand the sequence of the methodology and for comparing strategies. The categories are: introduction, instruction, activity, build, and reflection. Introduction refers to the facilitator introducing the design problem or objectives. Instruction is the transfer of the facilitator's knowledge and skills to the participants. During instruction, the participants are passive recipients of information. On the other hand, activity, build, and reflection engage the participants in their own learning. Non-hands on exercises, such as sketching and documentation, are designated as an activity. Tactile building exercises to represent or create architecture are classified as 'build.' Reflection includes group discussions, presentation of work, and meditative practice. It acts as the consolidating and synthesizing part of knowledge acquisition.
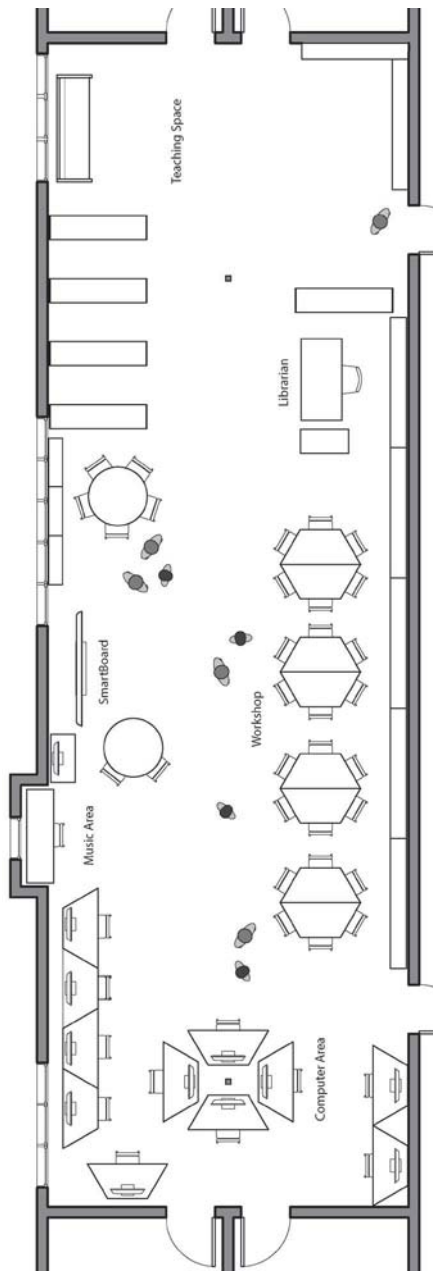
Existing workshop models provide tactics and a sequence of actions to develop spatial capacity, but they do not propose a conclusive methodology that would authentically empower individuals. The current methodologies are insufficient in ensuring authentic and meaningful learning due to their lack of emancipation and active critical thinking exercises. On January 28th to 29th 2014, I attended two days of the workshops hosted by No. 9. During that time, I observed that the design process was heavily directed by the organizers. Model making materials and site were preselected for the students and limited resources were available. Students worked individually and in groups with direct guidance from an architect, teacher or volunteer. A pre-built site model was the base for students to add their designs. The class, with assistance from No. 9, determines overall planning idea. The heavy handedness of the facilitators does not allow the student to construct their own learning. The process primarily resides on level one of the rubric, see figure 4.7, where participants are informed, rather than empowered. No precedent tackles all domains of spatial empowerment presented in the evaluation rubric.

Fig. 4.6 Opposite page. Workshop precedent analysis.

Fig. 4.7 Workshop precedent spatial empowerment rubric evaluation. Refer to figure 2.9.

Workshop Precedent	Aim	Location/Duration	Participants	Materials/Tools	Lesson Plan	Sequence	Pedagogical Strategy	Role of the Facilitator	Physical Outcome
No. 9	architects teach: urban planning and sustainability	Classroom — 4 days	Grade 7 students	model making materials, activity booklet, slideshow	instruction, introduction, reflection, activity, reflection; activity, instruction, activity, instruction, instruction, build; build; reflection	**Day 1:** • presentation about architecture • overview of project • research and discussion • neighbourhood walk • observe and document site • brainstorm as a collective **Day 2:** • build space from kit of parts • slideshow about 'poetics of architecture' • draw ideas in sketchbook • review program and site • model building lesson • model building exercise **Day 3:** • model building **Day 4:** • presentation and reflection	Collaboration/Participation, Discourse, Hands-on building, Individual and group activities, Precedent	facilitator, explicator, provider of architectural information, provider of materials	documentation, sketches, scale models
Susanne Hofmann Architects/die Baupiloten	students inform: design of their school	Classroom — varies	Grade 3 to 6 students; 4th to 5th year university architecture students	collage making materials; photomontage materials, building materials	introduction, activity, reflection; introduction, reflection, activity, reflection, build, reflection, build	**School Children:** • design problem introduced • create collages and drawings • provide feedback to architecture students • provide feedback multiple times **Architecture Student:** • facilitate collage workshop • listen to school children • translate collage into photomontages • present to school children • build scale models • present to school children • iterate models • present to school children • prototype • present to school children • implementation of design	Collaboration/Participation, Discourse, Provocation of spatial imagination, Spatial narratives, Prototyping, Storyboards, Experimental, Creative-participatory, Iterative process, Feedback from students	facilitator, interpretor, provider of architectural information, provider of materials	collage, photomontages, scale model, prototype, design
Dries van Wagenberg Study	architects teach: architectural design of the 'ideal' classroom by integrating reading, mathematics, graphic design and writing.	Classroom — once a week for a semester	Grade 3 students	cardboard, paper, scissors, glue	introduction, reflection, instruction, build, reflection	**Daily Plan:** • objectives introduction • review of previous session's work • different design techniques explained • working in pairs • coached by architect through narrative • discussion and critique **Overall Session Outline:** • analyze existing classroom by building scale model • create floor plan • vote on two best designs • design iterations guided by architect • present design	Collaboration/Participation, Discourse, Hands-on building, Individual and group activities, Evaluation/Assessment, Critique, Provocation through questions, Differentiated learning, Democratic selection process	facilitator, critic, model maker, provider of architectural information, provider of materials	plans, scale model

Hosted Workshops

As part of the research for this thesis, two sets of workshops were held in Toronto, Ontario. The initial intention of the workshops was to establish a methodology that could increase an individual's spatial decision making capabilities, awareness, and self-reliance in spatial production. A target of the workshops was to transform participants into the designers, builders, and users of space. Since the workshops took place before I developed a spatial empowerment methodology, the workshop results are retroactively applied and organized accordingly to the definition and criteria.

The following text chronicles the sequence of activities and events during each of the workshop sessions and my subsequent reflections. The reflections provide a description and evaluation of the activity and outcome. Additionally, participant responses are included. The participant's work is assessed aesthetically and conceptually. Several questions that guided the reflection and data analysis include: Is there evidence of architectural concepts or skills in the work or discourse? Are the participants engaged in the activity? Are there connections between the work? Do the participants reflect any spatial empowerment criteria? Was my role as a facilitator successful? How do the results effect the approach?

4.2   Workshop 1

The first set of workshops became a testing ground to develop architectural and educational pedagogical theory on building capacity. The initial strategy for workshop 1 was derived from the workshop precedents. It is important, as a starting point, to verify if existing workshop approaches and outcomes are valid to the research.

Grade 3 and grade 4 students were selected to become the participants. The homeroom teachers selected the students that would potentially most benefit from the workshops and had obtained documented parental consent. Four workshops were initially planned, but feedback and the outcome of the student work altered the schedule to six sessions. The schedule was not the only part of the workshop approach that had changed during the

Fig. 4.8 Site plan of workshop 1 in the school library.

Aim	Location/ Duration/ Participants	Materials/ Tools	Lesson Plan	Sequence	Pedagogical Strategy	Role of the Facilitator	Data Collection/ Outcome
architect-teacher facilitates the development of spatial capacity in individuals	Library in Toronto elementary school	Art materials	community introduction reflection activity build reflection	Day 1: • community building exercise • introduction of the workshops • guided meditation • scale model building • presentation of model	Collaboration Participation Hands-on building Meditation Material choice Connect participant interests	facilitator provider of materials	observational notes multimedia interviews booklet
	6 days, 45-minute sessions						audio-visual documentation sketchbook scale models one-to-one spatial interventions
	8 to 14 grade 3 and grade 4 students.						
		Art materials, tape, plastic cloth, plastic pipes	community instruction build build build reflection	Day 2: • community building exercise • lesson on architectural elements • three building activities (individual, small group model, 'large' scale model) • discussion	Collaboration Participation Discourse Hands-on building Individual and group activities Iterative process Choice	facilitator explicator provider of information provider of materials	
		activity sheet, writing instrument	instruction activity activity	Day 3: • lesson on architectural representation • site exploration • activity worksheet	Participation Explicate data in surrounding Analyze existing context	facilitator explicator provider of information	
		cardboard boxes, tape, plastic cloth, plastic pipes	community reflection instruction build	Day 4: • material and context introduction • precedent images inspiration • lesson on human dimensions and scale • one-to-one building activity	Collaboration Participation One-to-one building Iterative process Precedent Emancipation	facilitator explicator provider of information provider of materials	
			reflection build activity reflection	Day 5: • review of previous student work • one-to-one building activity • student documentation • group discussion	Collaboration Participation Discourse One-to-one building Iterative process Precedent Critique Emancipation	facilitator critic provider of materials	
			reflection build activity reflection	Day 6: • review of previous student work • one-to-one building activity • student documentation • group discussion	Collaboration Participation Discourse One-to-one building Iterative process Critique Emancipation	facilitator critic provider of materials	

Fig. 4.9 Workshop 1 Outline.

sessions. My attitude as the workshop facilitator shifted from rigid to relaxed as I became more aware of my direct and indirect influence on the students and their work. The choice of materials, sequence of activities, and pedagogical strategies evolved throughout the sessions to reflect the adopted dynamic and open-ended process. Architectural concepts of scale, materiality, context awareness, and hapticity were explored by the students. The chart, figure 4.9, provides an outline of Workshop 1.

Planning/Before the workshops: The workshop idea was proposed to the school principal and librarian. With approval from administration, the librarian and the grade 3 teacher agreed to monitor the workshops. Grade 3 and grade 4 students were recruited via their homeroom teacher to distribute parental consent forms.

Day 1: Assessment of students' prior architectural knowledge

Workshop 1 began with informing the students the purpose of the study. The workshops were introduced as an experimental program to learn about architecture and space. To ensure an inclusive and welcoming environment, guidelines of the workshop were explicitly explained.

Guidelines of Workshop:

> • Respect yourself, others, and the materials,
>
> • There are no 'wrong' answers
>
> • Have fun!

The students and I sat in a 'community circle' where we introduced ourselves to each other with a fun fact. After the community building exercise, a brief Minds On activity was conducted to connect the proposed architectural problem, creating a learning space, to the students. Students were asked to recall an interesting spatial memory and to imagine a 'learning space.' What type and kind of

space did they learn best in? Students were guided to individually create their 'learning space' using provided art supplies. Session one allowed an assessment the students' existing architectural knowledge and their capacity to communicate a spatial idea in a physical medium. At the end of the building session, we toured the tables to observe the completed work. Students had the opportunity to describe and present their work to their schoolmates.

Reflection on Day 1:

The majority of work created on day one did not conventionally represent architectural models. Common architectural elements, such as doors, walls, and roofs were minimally present. The various interpretations of a 'learning space' resulted in 2-d and 3-d models in an assortment of building scales and materials. Nine out of 16 models represented space as 2-d, whereas the other work included volume. The aesthetics and narrative of the model were heavily influenced by the other students at their table. Similar spatial concepts were included by those in physical proximity to one another. As shown in figure 4.13, the student with an aboriginal background created a traditional teepee that included a door covering and a fire pit. The teepee design was mimicked by other students to a lesser degree of detail and material resolution. Another student created a bedroom and closet, figure 4.13, as they felt most comfortable in that space. The student who created the tunnel structure, figure 4.14, indicated that they had been exposed to blue prints from their parent's profession. Several models included text to indicate the purpose of the space. During the presentations, the majority of the students were not able to clearly articulate their designs with architectural vocabulary, but clearly enjoyed the opportunity to share their work. The students were engaged in the task and were excited by the variety of art supplies.

　　The results of day one leads to my hypothesis that the lack of architectural knowledge and guidance leads to diverse models which rely on the participant's own existing conception of space and experience in manipulating the materials.

Fig. 4.10 Workshop 1 Day 1. From top to bottom. Day 1 materials. Students creating a classroom as their learning space. Students building their small scale model at their tables.

Fig. 4.11 Workshop 1 Day 1: Table A. 2D representation of 'space'. From left to right: Student spelling 'school'. Work layered various materials. Student viewed 'learning space' as a teacher, so they made a teacher's face and spelled their name. Student was confused with the activity, so they ignored the 'program' and made what they wanted.
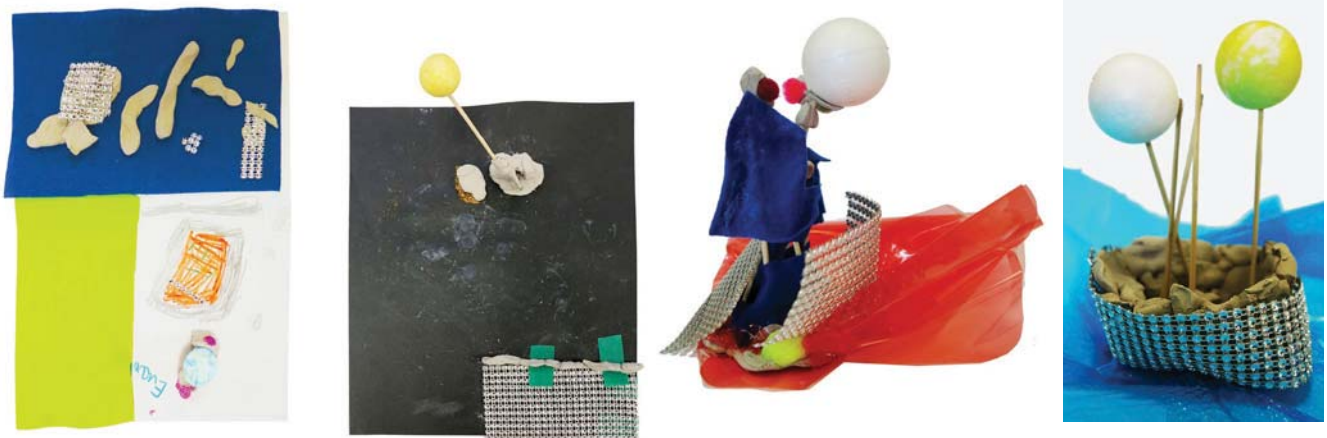
Fig. 4.12 Workshop 1 Day 1: Table B. 2D and 3D representation of space. Foam balls were skewered on sticks in three out of four projects from this table.

Fig. 4.13 Workshop 1 Day 1: Table C. From top counter clockwise. Student created a closet as a learning space. The upright structure in the middle could hang clothing. Students created tee-pee structures with varying degrees of interior space. Tower built out of sticks and clay, partially covered tee-pee. Tee-pee with a defined entryway and hearth.
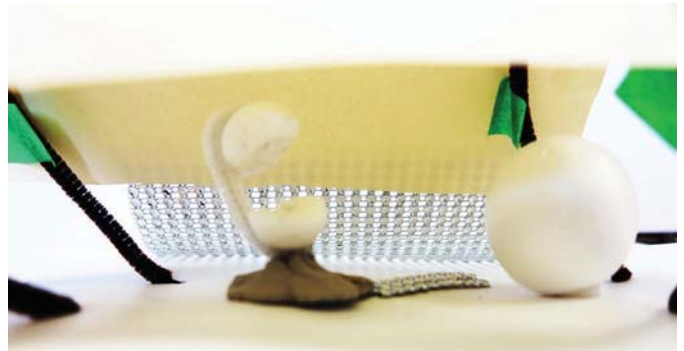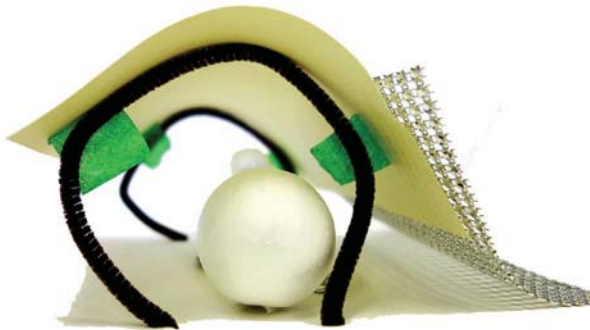
Fig. 4.14 Workshop 1 Day 1: Table D. From top. Triangular prism and an interior of a classroom Student uses pipe cleaners to create a tunnel-like structure. Table D projects demonstrate developed interior spaces.

Day 2: Investigating participation

After determining the participants' individual understanding of space in day one, the second session evaluated the effect of collaborative activities and architectural knowledge in the pedagogical approach. Fundamental architectural elements such as floor, ceiling, wall, window, door and furniture were discussed at the beginning of the session. Students were asked to point, touch, run, and jump to the element I called out. New materials; plastic pipes, metal connection joints, tape, and plastic cloth, were introduced as one-to-one scale materials. The participants rotated between three stations which allowed the students to; individually work on their session 1 model, collaborate on a small scale model, and build a large scale model. In revisiting the participants' individual work, I hypothesized that architectural knowledge would allow the participants to refine the aesthetic representation of their initial spatial ideas.

Reflection on Day 2:

Although it was anticipated that students would add to their individual models, the majority of students either created a new model or completely destroyed their first iteration. Although the second iterations incorporated architectural vocabulary, shown in figure 4.15, the final outcome was less developed due to limited time. In the collaborative small scale model, material selection and its placement was decided by the first group of students. The succeeding groups increased detail of the model, but did not drastically modify the original design. The building materials selected for the larger model, plastic pipes and metal joints, were difficult for the students to manipulate. Tape, instead of the metal connectors, were primarily used to connect the pipes together. The resultant space was created a smaller scale than the anticipated. In hindsight, the plastic pipes were too small and complicated to form into larger structures. Material selection, a role of the facilitator, failed. The poor material choice limited the participants' understanding of construction and scale.

Although the aesthetic and pedagogical outcome lacked evidence of capacity building, students eagerly collaborated to solve material complications. Difficult materials could increase
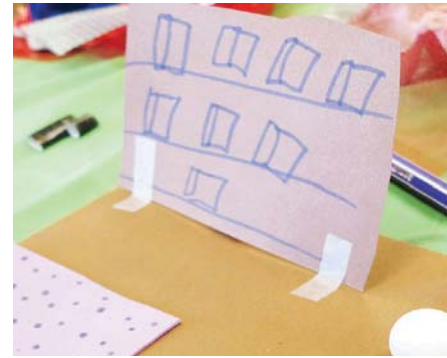
Fig. 4.15 Workshop 1 Day 2. From top to bottom. An iteration of a student's work illustrates windows and building storeys. In the collaborative model, construction paper symbolizes windows and the structure is a triangular prism. Large scale collaborative model with plastic pipes and cloth.

community building. It was evident, by observing their laughter and discussions, that students enjoyed the collaborative process. Additionally, several students connected their building activity with curriculum topics. They explained, in terms acquired from their forces and structures unit, that they were constructing triangles in their work because it made the structure stable. My observations on day 2 led me to theorize that material selection, the concept of scale, and outlining expectations is imperative for skill building.


Fig. 4.16 Workshop 1 Day 3. From top to bottom. Existing plan and proposal from student. Tables and seating are arranged in the middle of the space, instead of against the wall. Detailed elevation of the existing library. Smartboard, computer, and cart are illustrated.

Day 3: Architectural representation

In between session 2 and session 3, I participated in No. 9's workshop. Due to the influence of No. 9's pedagogical method, I decided to introduce the students to conventional standards of architectural representation. The third session began with an explanation of floor plans and elevations. Examples of plan and elevation drawings were illustrated in front of the students. Plan drawings were explained as 'bird-eye views' and elevations were described as 'side views'. I assessed if the majority of students understood the concept of representation by I asking several students to draw a plan or elevation view of an object in the room on the white board. The library was sectioned into four areas with masking tape. The students choose one of the four areas to work within. On a worksheet, they were asked to draw the existing floor plan and elevation of their selected space. After illustrating their chosen site, the participants drew a proposal for how they thought and wanted the space should be used.

Reflection on Day 3:

Although the resultant drawings were interesting and the students gained architectural knowledge, the majority of students were noticeably disengaged in the activity. Several students asked if they had to continue with the session and the workshops. In contrast, after the first workshop session, students asked if their friends could join. Students who were confident in their drawing skills fared better than those who were not. Several students did not want to attempt the activity as a result of a lack of confidence. For those individuals that required additional support, I demonstrated what and how to draw simple geometry, such as the hexagonal table. Vocabulary of
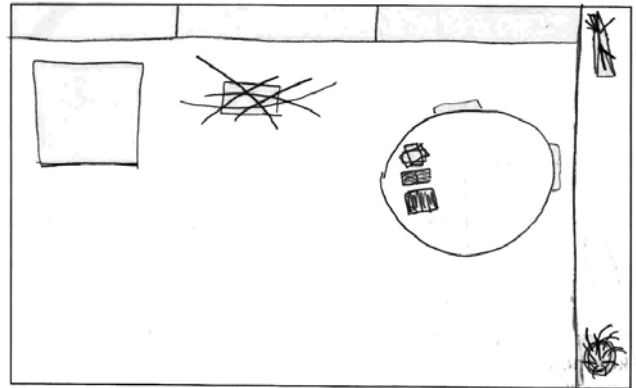
66

Existing Plan (bird's eye view)
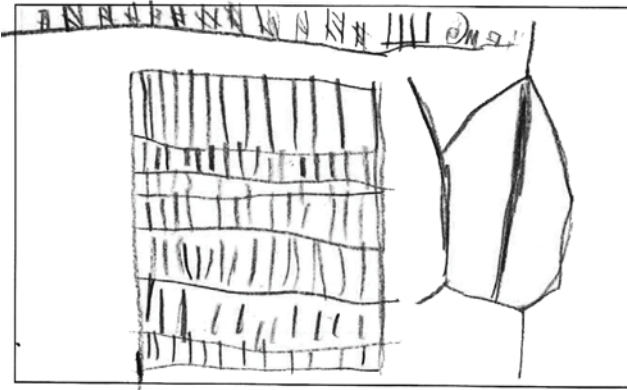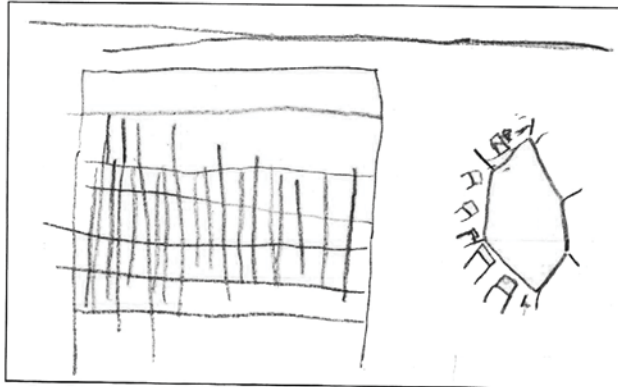
Proposal

Plan

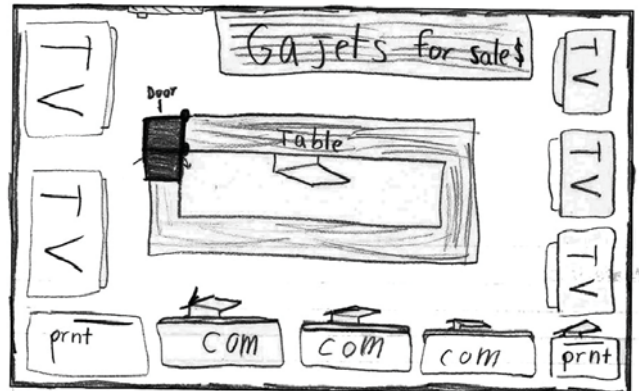**Existing Plan (bird's eye view)**
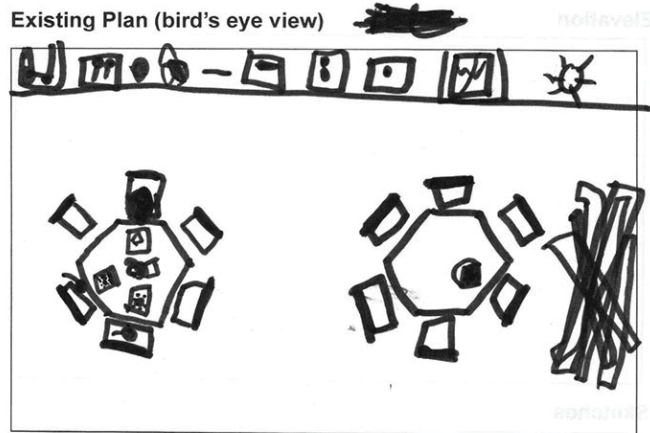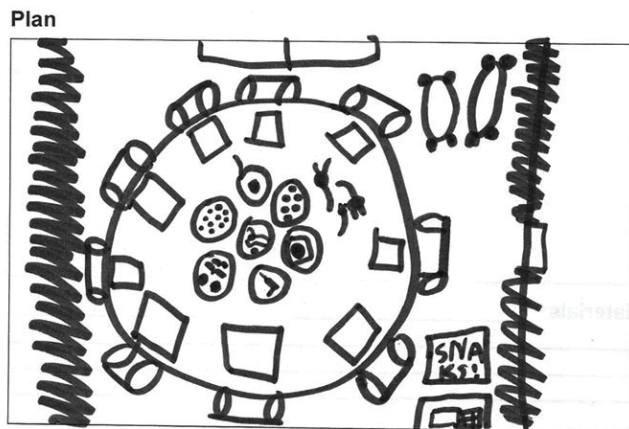

Proposal

Plan

Fig. 4.17 Workshop 1 Day 3. From left to right. Several students had difficulty distinguishing between plan and elevation representation. Student proposes a technology centre. The space includes computers, printers, and a commercial sales area.

Existing Plan (bird's eye view)

Proposal

Plan

Existing Plan (bird's eye view)

Proposal

Plan
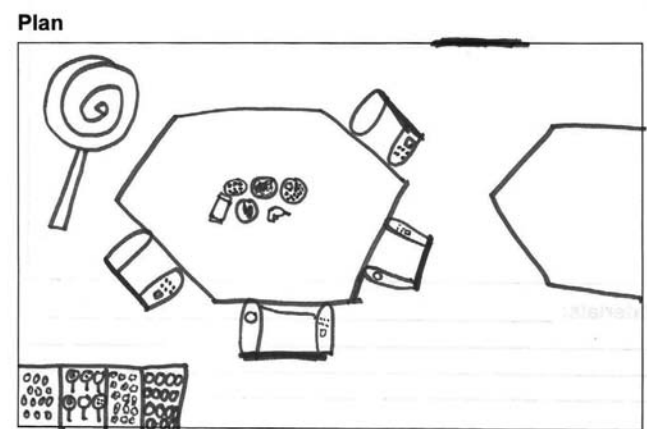
Fig. 4.18 Workshop 1 Day 3. From left to right. Student's proposal includes a large snack table with an increase in seating. Walls are included to make the space intimate. Second student also proposes a snack area, but with the existing table. The two participants sat next to each other, which is illustrated in their existing plan drawing.

architectural elements introduced in session 2 were visible in the drawings. Students brought in their own interests and desires to the proposed . As illustrated in figure 4.18, students wanted snacks and computers in the library. My observations of the students' responses from day 3 suggests that worksheet based activities, such as 2D architectural representations, creates disinterest.

Day 4 to 6: One-to-one iterative building

The remaining workshop sessions were used to test the iterative design process at a larger scale. Each session included discussion, building, and documentation activities, which built upon the preceding work. In session 4, the concept of scale was explained by examining the scale of the body in comparison to objects in the room. With new materials; cardboard boxes, tape, plastic cloth, and plastic pipes, one-to-one building was reintroduced. Precedent images, figure 4.21, were shown to students as a reference for material manipulation. After discussing the precedent images and scale, students experimented with the material within a working area delineated by masking tape.

In session 5, students continued building with the cardboard boxes. Photographs of their spatial intervention from day 4 were shown and discussed. Students critiqued their work by assessing whether or not their space was built at an appropriate scale and if it captures their spatial intention. The work area for Day 5 was verbally communicated before the building activity. The final session allowed the students to once again work at a one-to-one scale using the same materials. This time, a boundary was not specified. Throughout the sessions, architectural concepts and vocabulary, such as scale, architectural elements, context, and construction, were unobtrusively reinforced. Students were given the opportunity to use a camera and video camera to document and explain their creations. When time allowed, students presented their spatial contribution to the overall work and/or played within their created space. Workshop 1 concluded with a congratulatory pencil and notepad for participation. The boundaries of each of the sessions are illustrated in figure 4.38.
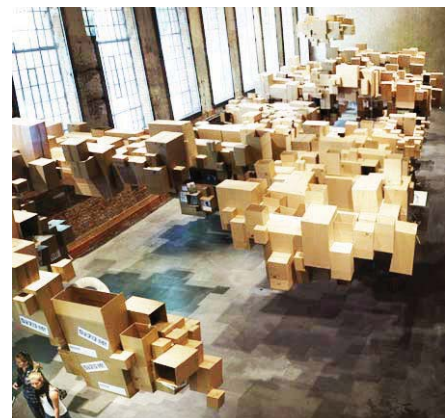
Fig. 4.19 Workshop 1 Day 4. From top to bottom. Precedent cardboard images: Zimoun, Stéphane Malka, Cardboard Cloud installation by Fantastic Norway.

Reflection on Day 4 to 6:

This is my reading space.

- Student declaring ownership of their intervention

This is more fun than playing soccer!

-Grade 4 student comment during building activity

Guys, we need a wall and stuff.

- Student negotiating elements to include in space

We need a cloth to drape over it. And four boxes.

- Student indicating materials needed

Do you see a little string hanging from the fort? Can you connect it?

I'm fixing the walls for you.

Anybody need a chair?

I do!

- Students in dialogue while building

Fig. 4.20 Workshop 1 Day 4. From top to bottom. Student testing the scale of a cardboard box to his body. Photo by student. Students discussing where to put the plastic cloth and pipe 'window'.

Day 4 was the first time students tested the material properties of the cardboard boxes in the workshop. Many students, such as the individual in figure 4.20, successfully and unsuccessfully attempted to fit inside them. The size of the boxes enabled the students to successfully relate the scale of their body to the material. As a result of my instructions to work within the demarcated boundary, the participants aligned their work along the edge of the tape. In addition, the students attempted to emulate the precedent images. Cardboard boxes were used to build walls, plastic pipes became

Fig. 4.21 Workshop 1 Day 4. Students building
walls along the tape 'boundary' set by the
facilitator.

Fig. 4.22 Workshop 1 Day 4. From top to bottom. Students working together to set thresholds of the space with walls and a 'roof' structure. Students drape the plastic cloth over the pipes. Layering of materials begins.

Fig. 4.23 Workshop 1 Day 4. From top to bottom. The space is initially defined by walls. Students begin to create 'ceilings' with the cardboard. Integrating plastic pipes added additional structural support for the plastic cloth. After the cloth is added, the majority of students enter the space. Several students begin playing in the space. Others continue construction. Bottom photo by student.

structure, and the cloth created a ceiling in one collaborative space. Architectural elements, such as windows, were built. Excessive amounts of tape was used to secure the boxes to one another. After the roof was installed, the majority of students went underneath to experience their creation.


On day 5, two spaces were constructed at different scales. One space, figures 4.24 and 4.25, was composed of minimal thresholds. Plastic pipes acted as a light structure overhead and boxes created a doorway and low walls. It was challenging for the students to create the doorway at an appropriate scale for them to walk through since the stacked boxes toppled at over certain heights. Several attempts were made and lots of tape was used. A two-seater cardboard bench was built beside one of the low walls. The second space, a reading nook shown in figure 4.26, was created underneath a table. Students used the cardboard boxes as book displays and storage. A mini-library was created within the library. Students felt it was important to differentiate and claim elements of their work. For example, in figure 4.26, boxes were labeled to indicate who had access to the books placed inside. A sense of camaraderie was apparent. In comparison to day 4, the resultant work of day 5 annexed additional floor area, furniture elements were evident, and material manipulation was refined.

Fig. 4.24 Workshop 1 Day 5. From top to bottom. A cardboard two-seater 'bench'. Students making a doorway into their space.

On day 6, the grade 4 students were unavailable for the session. Although there were fewer participants, the grade 3's created two interesting spaces that are documented in figures 4.27 and 4.28. In the first space, a series of boxes were arranged to lead to a table. Underneath the table, a reading nook, similar to day 5's work, was constructed. The other side of the table provided the boundary for the second space. Boxes, chairs and another table defined an open area. The third intervention was located along the exterior wall and bookcase. A corridor of boxes led to cardboard draped over four chairs. The pathway of boxes doubled as seating. During the building activity students took time to individually record what they learned during the workshops.

Fig. 4.25 Workshop 1 Day 5. Spatial outcome at
the end of the session.
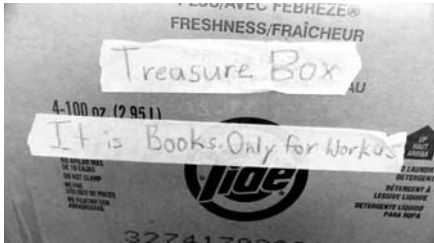
Fig. 4.26 Workshop 1 Day 5. Clockwise from top left. Student creating the 'bookshelves'. Students reading in their space. Reading nook with book storage and display. Boxes labeled to indicate that the books inside are only for 'workers'.

Fig. 4.27 Workshop 1 Day 6. From left to right. Students using the video camcorder to record and discuss their work. Cardboard boxes form a pathway which creates a spatial boundary. The boxes doubles as seating.

Fig. 4.28 Workshop 1 Day 6. From top to bottom. Students becoming more adept at stacking boxes to build walls.
Chairs and a table are aligned and arranged to extend the boundaries of their work

I learned about bird's eye view, elevation... Windows, openings, and walls. And ceilings.

I learned how to make a reading space. I mean, a learning space.

You can make something and then change it.

I learned about structure. I made a space with boxes.

-Students reflecting on what they learned from the workshop

In sessions 4 to 6, the majority of participants expressed excitement to work with cardboard boxes. Several students asked if they could take the boxes home. Throughout the sessions, the context was increasingly integrated into the interventions as the site boundaries became less defined. Chairs, bookcases, and tables became intertwined with workshop materials. Represented in figures 4.36, the area occupied in subsequent sessions increased. The incremental expansion of the floor area can be correlated with participants' interpretation of the site boundary and their confidence with appropriating space. Iterations allowed further spatial exploration, understanding and fabrication. Material resolution, construction techniques and building at scale developed between each iteration. Vocabulary introduced in the previous sessions were heard in discussion. Curricular topics and information, such as structures and forces, became part of their discourse. For example, students discussed stability, tension and compression forces, and geometry. Cardboard, plastic sheets, and pipes functioned as open-ended materials that sparked imagination and creativity in the students. Boxes became furniture and walls. Plastic sheets were re-imagined as carpet, blankets, ceilings, and window drapes.

Fig. 4.29 Workshop 1 Day 4. A student is taking a 'nap' in the cardboard bed.

Design Sketchbook

On the second session, students were provided with a design sketchbook. They were encouraged to draw familiar spaces during their leisure time.

Reflection on Design Sketchbooks:

Although most participants verbally confirmed that they had used their design sketchbook, only two were returned at the end of the workshops. The illustrations from the two participants, shown in figures 4.30 to 4.32, demonstrate an understanding of architectural representation and context. Composite elevation, plan, and section drawings illustrate a bedroom, house, and apartment building. The drawings in the sketchbook show detail that is not evident in the activity sketches from session three. Their familiar spaces are represented in various scales. In figures 4.32, symbols are adopted for lighting fixtures, chairs, doors, stairs and tables. Spatial narratives are construct through the use of people within the context.

Fig. 4.30 From top to bottom. Cover of the Design Sketchbook Student illustration of the elevation of their room.

Fig. 4.31 From left to right. Student drawing of their relatives' apartment in section. The house to the right of the apartment is drawn in section to a greater scale in the following sketch. The illustrations show people watching TV in the living room, walking their dog on the street and driving.
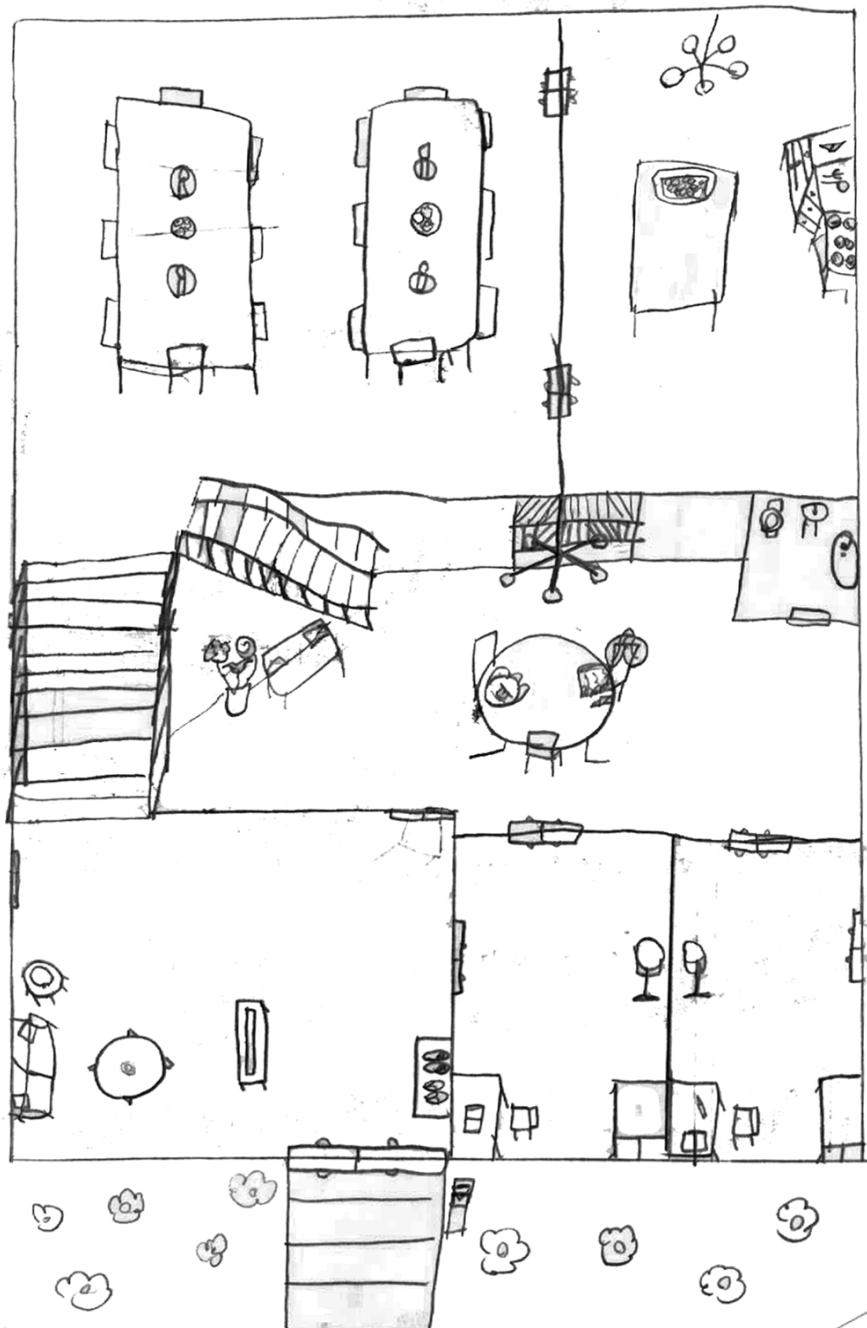
Fig. 4.32 Sketchbook drawing. Student illustration of their house. The representation of the space is a hybrid between plan, elevation, and axonometric drawing conventions.

Workshop 1 Analysis

The workshop methodology validates the results from Dries van Wagenberg's study. Architectural instruction increases spatial understanding, awareness, and capacity. The findings from Workshop 1 suggests that engaging hands-on activities that incorporate architectural vocabulary, contextual awareness, and an iterative and open design process with 'easy' building materials, promotes spatial appropriation and understanding. Additionally, relevant precedents, documentation, collaboration, discussion, and reflection all assist in capacity building. Co-learning and an inclusive environment is sustained by limiting facilitator-led direction in a non-threatening learning environment. The aesthetic outcome of the small models from session 1 to the one-to-one iterations of session 4 to 6 demonstrates a deeper understanding of space. The small models created a level of spatial abstraction that was difficult for the students to relate. By working at a one-to-one scale, the students immediately understood the spatial implications of their actions.

Fig. 4.33 Students working together to solve construction challenges posed by the material limitations.

My role as the facilitator and teaching approach modified during the sessions. I realized that the explicit and implicit boundaries I inadvertently communicated hindered learning. The analysis of the spatial outcomes, figure 4.36, illustrates that students built within physical and conceptual constraints. The spatial implications between the sessions reveals that the control of the facilitator is inversely proportional to an individual's sense of spatial empowerment. The architectural knowledge and skills I choose to place importance on manifested itself in the participants' work. For example, after I defined 'window' as an important architectural element, windows were included in the participants' work. The 3-part lesson plan morphed into open-ended iterative building schedules that responded to student inquiries and feedback. Due to my personal architectural experience, I had spatial expectations and assumptions of how the students would respond to the materials and instruction, Removing my expectations, biases, and control allowed students to direct their learning and space-making experience. Providing tools such as cameras and video camcorders to document their work and a forum for dialogue to occur also authorized the participants to take ownership of their spatial narrative.
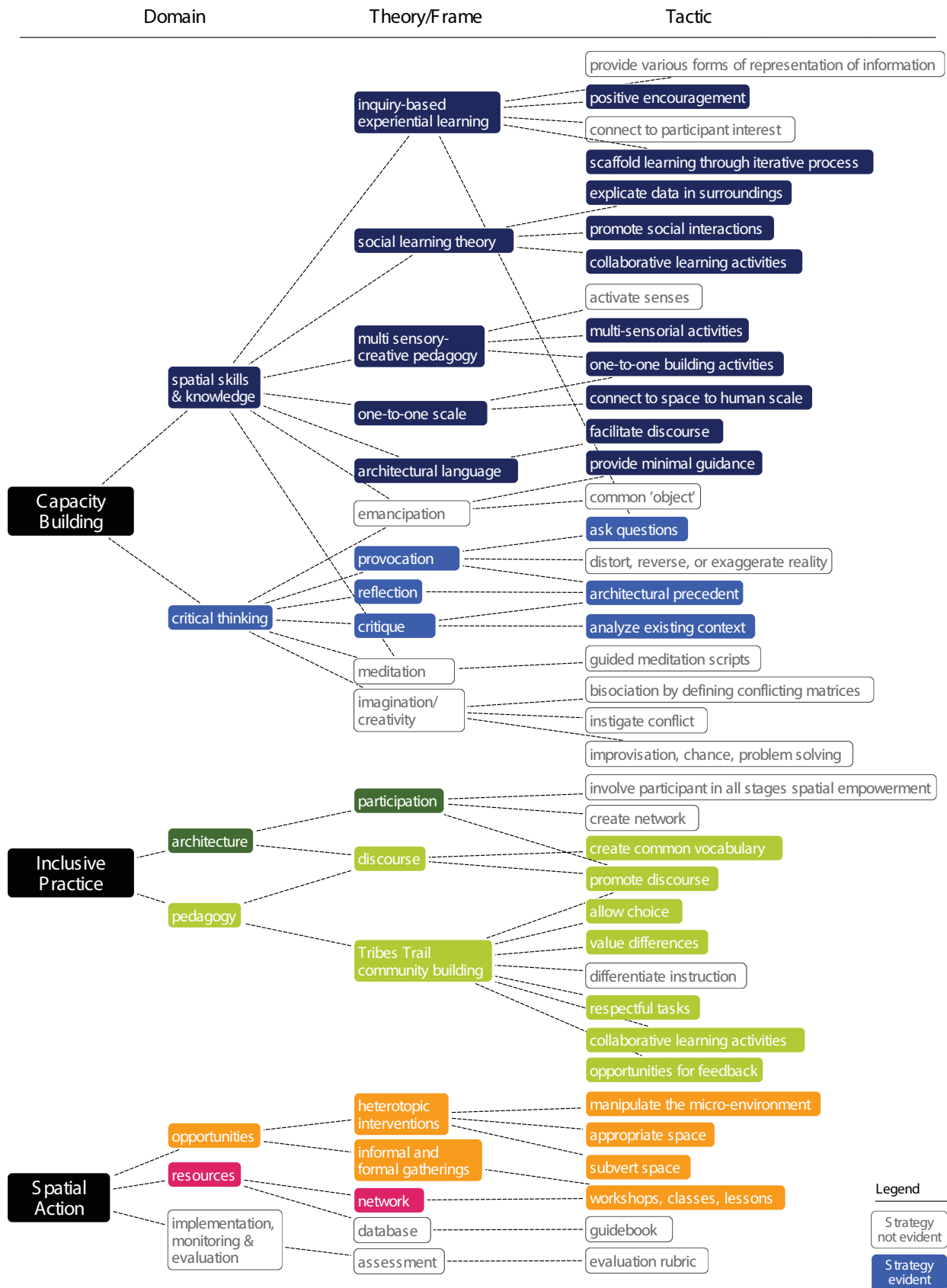

Fig. 4.34 Workshop 1 Day 6. The spatial creators hanging out. The space is designed to suit the student's physical scale.

The limitations of the materials, the provided knowledge, and the explicit or implicit boundaries directly informed the students' design process and aesthetic outcome. Students promptly incorporated vocabulary and architectural ideas that were explicitly taught into their designs and discussions. Although the majority of students verbally expressed their enjoyment and demonstrated their spatial learning in the Design Workshop sessions, the lack of a control study and rigorous assessment are limitations to the perceived effectiveness. Quantitative and additional qualitative data collection would have been beneficial to clarify the specific factors to building capacity and their gauge of effect. Quantitative analysis to rate the students' pre and post workshop spatial understanding could directly inform succeeding workshops.
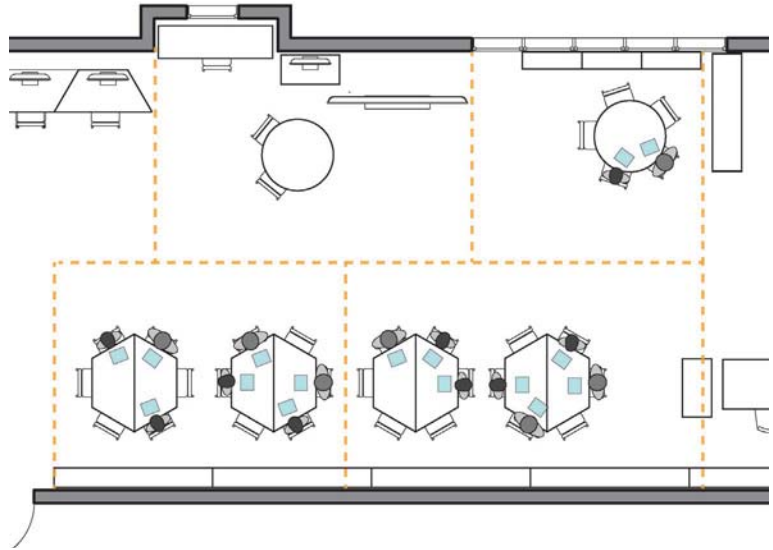
In my observations as an 'architect', the aesthetic outcome of student work appeared to lack creativity and meaningful connections to the student. The aesthetics were driven heavily by the precedent images and their personal conventional experiences of space. The absence of provocation and spatial imagination created interesting, but familiar spaces. Resonating with disinterested students and expediting the learning process, which were noticeable challenges during the Workshop 1, are addressed in Workshop 2. In addition to the integrating spatial empowerment strategies not evident in workshop 1, shown in figure 4.35, Workshop 2 aims to include quantitative data collection methods.

Fig. 4.35 Opposite page. Workshop 1 spatial empowerment strategy analysis.

Domain | **Theory/Frame** | **Tactic**

Capacity Building

- spatial skills & knowledge
  - inquiry-based experiential learning
    - provide various forms of representation of information
    - positive encouragement
    - connect to participant interest
    - scaffold learning through iterative process
    - explicate data in surroundings
  - social learning theory
    - promote social interactions
    - collaborative learning activities
    - activate senses
  - multi sensory-creative pedagogy
    - multi-sensorial activities
    - one-to-one building activities
  - one-to-one scale
    - connect to space to human scale
    - facilitate discourse
  - architectural language
    - provide minimal guidance
  - emancipation
    - common 'object'
- critical thinking
  - provocation
    - ask questions
    - distort, reverse, or exaggerate reality
  - reflection
    - architectural precedent
  - critique
    - analyze existing context
  - meditation
    - guided meditation scripts
  - imagination/creativity
    - bisociation by defining conflicting matrices
    - instigate conflict
    - improvisation, chance, problem solving

Inclusive Practice

- architecture
  - participation
    - involve participant in all stages spatial empowerment
    - create network
  - discourse
    - create common vocabulary
    - promote discourse
- pedagogy
  - Tribes Trail community building
    - allow choice
    - value differences
    - differentiate instruction
    - respectful tasks
    - collaborative learning activities
    - opportunities for feedback

Spatial Action

- opportunities
  - heterotopic interventions
    - manipulate the micro-environment
    - appropriate space
- informal and formal gatherings
  - subvert space
- resources
  - network
    - workshops, classes, lessons
  - database
    - guidebook
- implementation, monitoring & evaluation
  - assessment
    - evaluation rubric
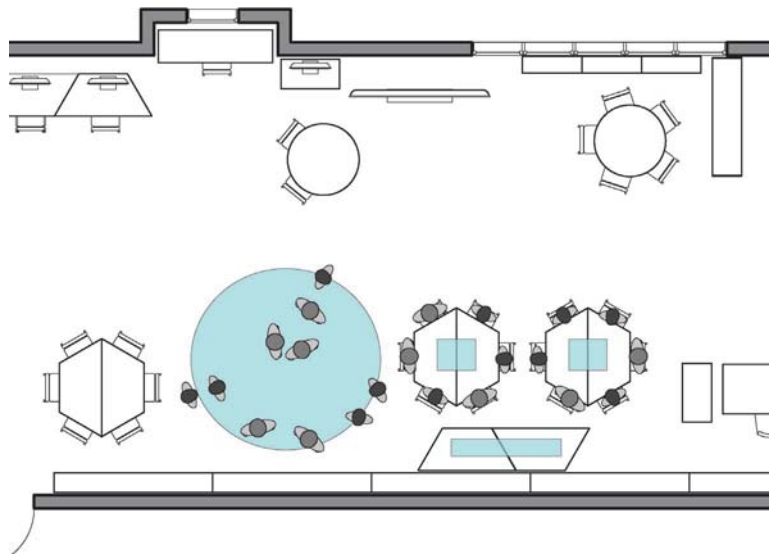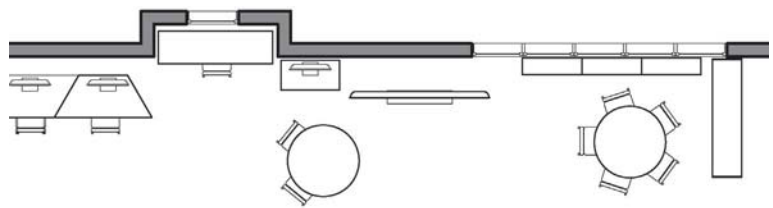
Legend

- Strategy not evident
- Strategy evident

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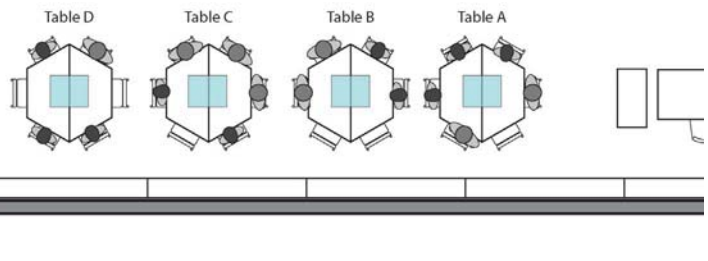Workshop 1 Day 4. Students created their work within an explicitly marked boundary.

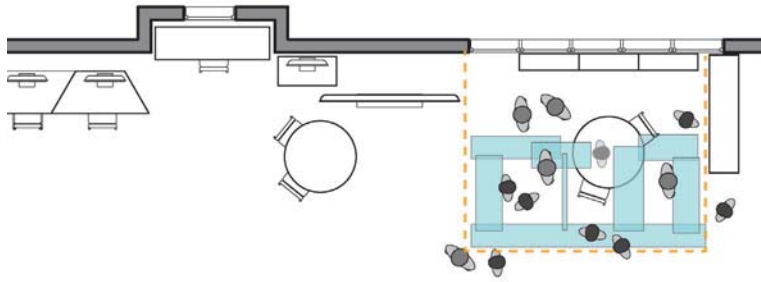Workshop 1 Day 2. Students rotated between three work stations; two tables and an area on the floor.

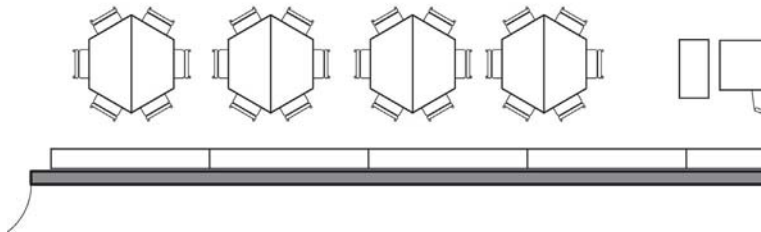Workshop 1 Day 3. Student remained at their round tables during the session.

Materials
Boundary
Participant

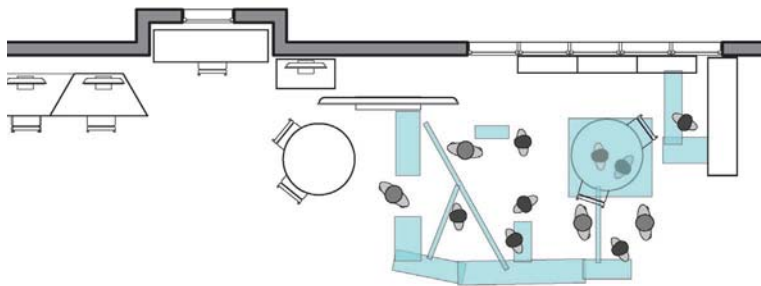**Fig. 4.36** Spatial implications for each workshop session.

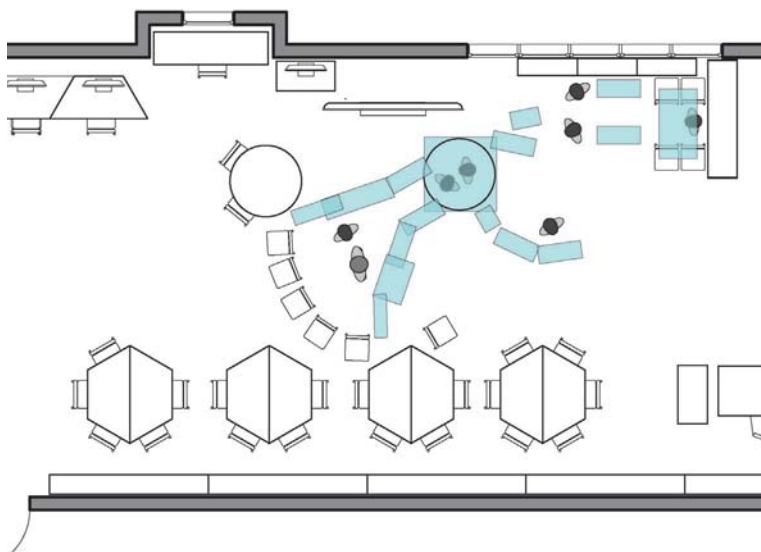Table D   Table C   Table B   Table A

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Workshop 1 Day 1. All students worked at round tables. There was minimal student movement and interactions between tables.

Workshop 1 Day 5. Students created their work within a verbal boundary.

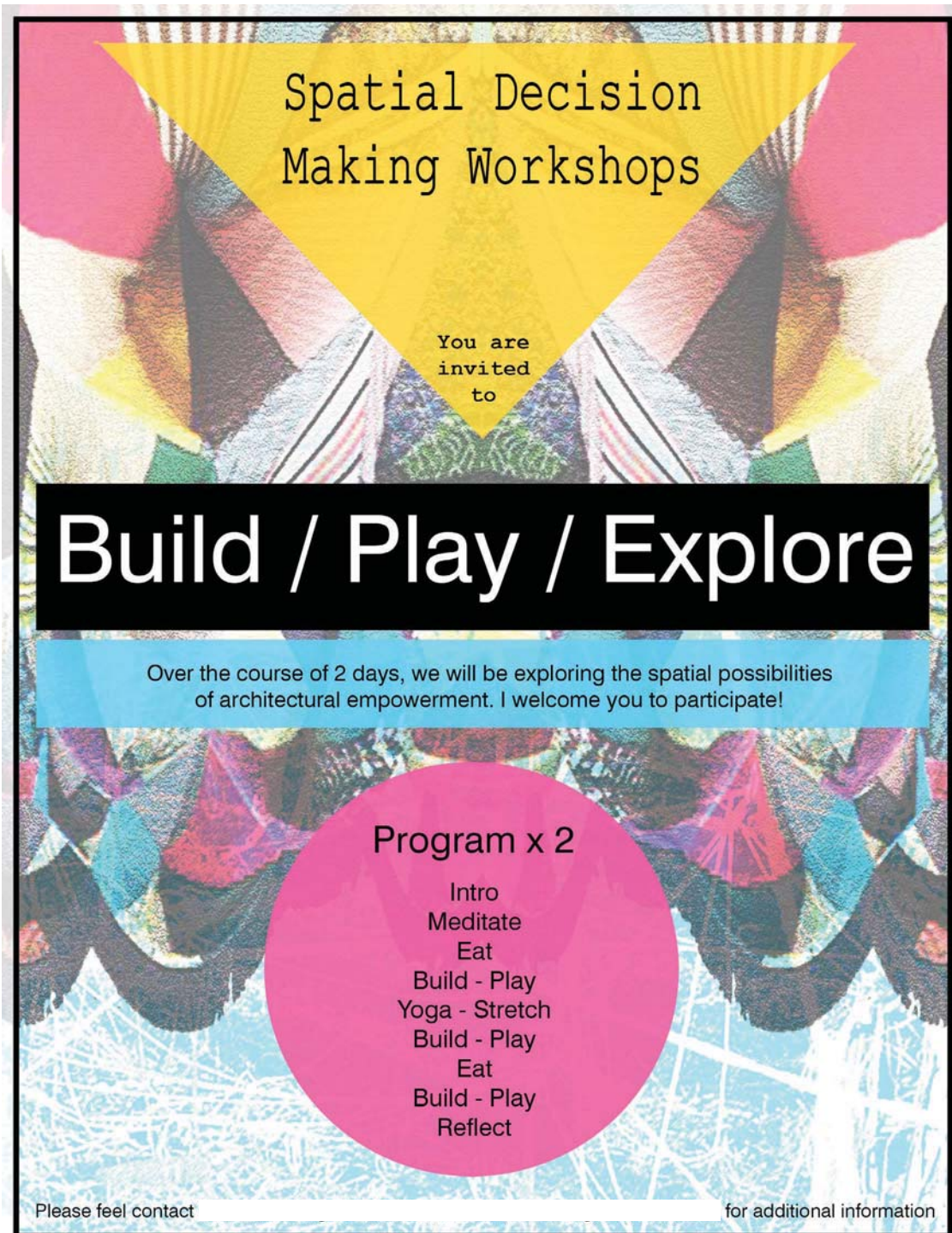Workshop 1 Day 6. Students created their work within an implied boundary.

Fig. 4.37 Workshop 2 invitation poster.

4.3   Workshop 2

I am excited to learn about architecture. Or should I say parkitecture.

- Participant comment on pre-workshop questionnaire

The findings and shortcomings of Workshop 1 provided the planning direction of Workshop 2. Sparking spatial creativity and determining necessary architectural knowledge for spatial action led the direction for workshop 2.

Workshop 2 overview is presented in figure 4.38. The location was chosen specifically due to the density of trees. The trees would provide context to work within and the option to create intimate spaces. Participants needed to become aware of the site to create their spaces. The selection criteria for the adults was based on their availability to attend two workshops and their lack of formal architectural training. To ensure compatibility between participants, friends and their extended social network were approached. The participant size of 11 adults was determined by considering the manageability of hosting the event and quantity of materials required for each person. Textile material were selected based on the ease of use and potential multiple interpretations. The familiarity and minimal necessary construction skills to manipulate fabric would not intimidate the participants. Creating a common goal and experience, such as eating and stretching was deliberately included in the approach to create a sense of community and inclusivity.

Planning/Before the workshops: I e-mailed potential participants an invitation an outline of the workshop objective and schedule.

Aim	Location/ Duration/ Participants	Materials/ Tools	Lesson Plan	Sequence	Pedagogical Strategy	Role of the Facilitator	Data Collection/ Outcome
architect-teacher facilitates the development of spatial capacity in individuals	High Park, Toronto Ontario 2 days, two 3 hour sessions 11 adults aged 26-30	Textiles, rope, clothes pins, scissors, stakes, guidebook	community introduction activity build reflection activity build reflection	Day 1: • community building exercise • introduction of the workshops • fill out pre-workshop questionnaire • site exploration • material exploration • provide guidebook • sketch in guidebook • build • group presentation of work • collaborative discussion • eat • build • group presentation of work • group discussion	Collaboration Participation One-to-one building Meditation Material choice Connect to participant interests Emancipation Common 'tool' Discourse Iterative process Choice Intervention	facilitator provider of materials provider of materials and tool	survey observational notes multimedia interviews audio-visual documentation one-to-one spatial interventions
		Additional and updated textiles, rope, clothes pins, scissors, stakes	community reflection build reflection activity build activity build reflection	Day 2: • community building exercise • guided meditation • build • group presentation of work • collaborative discussion • eat • build • stretching break • build • explore and present work • group discussion			
			activity	After: • fill out post-workshop questionnaire			

Fig. 4.38 Workshop 2 overview of approach and schedule.
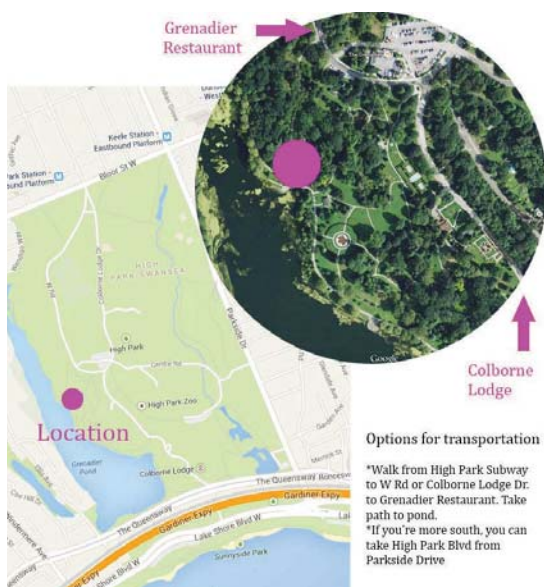

Fig. 4.39 From bottom left to right. Workshop 2 site directions distributed to participants. Photograph of site.

Day 1:

Day 1 began with the participants introducing themselves. I explained the workshop objectives and two-day schedule. Participants filled out a short questionnaire which would be later used to assess the study and to determine their existing knowledge and perspective on architecture. The site and the materials were tactilely explored as individuals and groups. A guidebook, an adaptation of part 5, was distributed. The guidebook provided architectural information, precedent, and a place they could sketch their ideas without interference. After reviewing the guidebook and sketching out their ideas, the participants began to build their first iteration of their spatial intervention. Program and provocation was not provided; rather, participants were urged to test out materials within their surroundings. After a 20 to 30 minute building session, participants ate a nutritious lunch provided by the facilitator. Following lunch, the participants began their second building session. Although three iterative building sessions were planned, two were completed due to time constraints. Presentations were held to ensure participants had an opportunity to discuss their work. My guidance was minimal throughout the day. I documented the progress of their spatial interventions through photography and writing. Park visitors were interested and curious in the participants' activities and resultant intervention. Before the participants departed I requested feedback regarding the pedagogical approach and materials.

Reflection on Day 1:

It became apparent that the context heavily informed their designs by evaluating the aesthetic outcome and dialogue between participants.

Intervention A: Refer to figures 4.41. A pair of participants choose their site based on view. Their structure was composed of a singular slanted roof. The roof blocked the sun while providing a view to Grenadier pond. Previous camping knowledge informed their construction techniques of their intervention.

Intervention B: Refer to figures 4.42 to 4.45. Participants from intervention B built their structure around a rock surrounded by trees. They chose their location because the trees provided structure and the rock could become seating. Their design strategy

Fig. 4.40 Workshop 2. From top to bottom. Participants getting to know one another. Participant reading the spatial guidebook before the building activity. Precedent page in guidebook. Inspiration of how the workshop materials could be used.

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Fig. 4.41 Workshop 2 Day 1: Intervention A. Materials: fabric, rope, and plastic stakes. Participants relaxing in the shade underneath their work. A view to the lake is framed along with the other participants' intervention.

Fig. 4.42 Workshop 2 Day 1: Intervention B. From top left. Participants experiment with material and construction methods. Difficulty emerges with creating a horizontal roof. The structure is extended across a path.

Fig. 4.43 Workshop 2 Day 1: Intervention
B. Materials: fabric, rope, and plastic stakes.
Participants are setting up the walls by hanging
fabric onto rope.

Fig. 4.44 Workshop 2 Day 1: Intervention
B. The upwards view from the middle of the
chosen site.

was based on removing to sight lines from a group of park visitors. The participants attempted to create continuous walls to enclose the space with fabric. Unfortunately, the size of the white fabric did not match their spatial intentions or construction use.

The second building session allowed the participants to continue working on their spatial ideas. The non-building activities, eating and stretching, appeared to energize the participants. The extent to which they used the site extended well beyond my intended designated area.

Day 2

Day 2 of the workshop took place at the same site on the following day of session 1. The approach for day 2, shown in 4.38, was similar to the previous session, but time permitted a third building iteration to be completed. Instead of group introductions, I facilitated a guided meditation. The guided meditation, an adaptation from a script in part 5, attempted to connect the participants to their existing spatial experiences. In response to participant feedback and how the textile were employed in day 1, I altered the materials. Sewing the white sheets together and providing longer spans of fabric would enable the participants to create wall-like surfaces. I chose colourful, light and interesting textiles. After the second iteration, a quick yoga and stretching session was led by one of the participants. Throughout the session, I documented the participants work and initiated dialogue regarding their spatial ideas.

Reflections on Day 2:

It's like defining edges, without walls.

- Participant describing wrapping the trees in the white cloth

The updated materials were successful as the participants were able to manipulate them easily and effectively with the site. Several projects emerged.

Fig. 4.45 Workshop 2 Day 1: Intervention B. From top to bottom. Participants taking down their work. A participant is enjoying their created space.

A

Eating
Area

B

Path

Stretching
Area

Grenadier
Pond

Park
Visitors

Materials

Participant

Anchor point
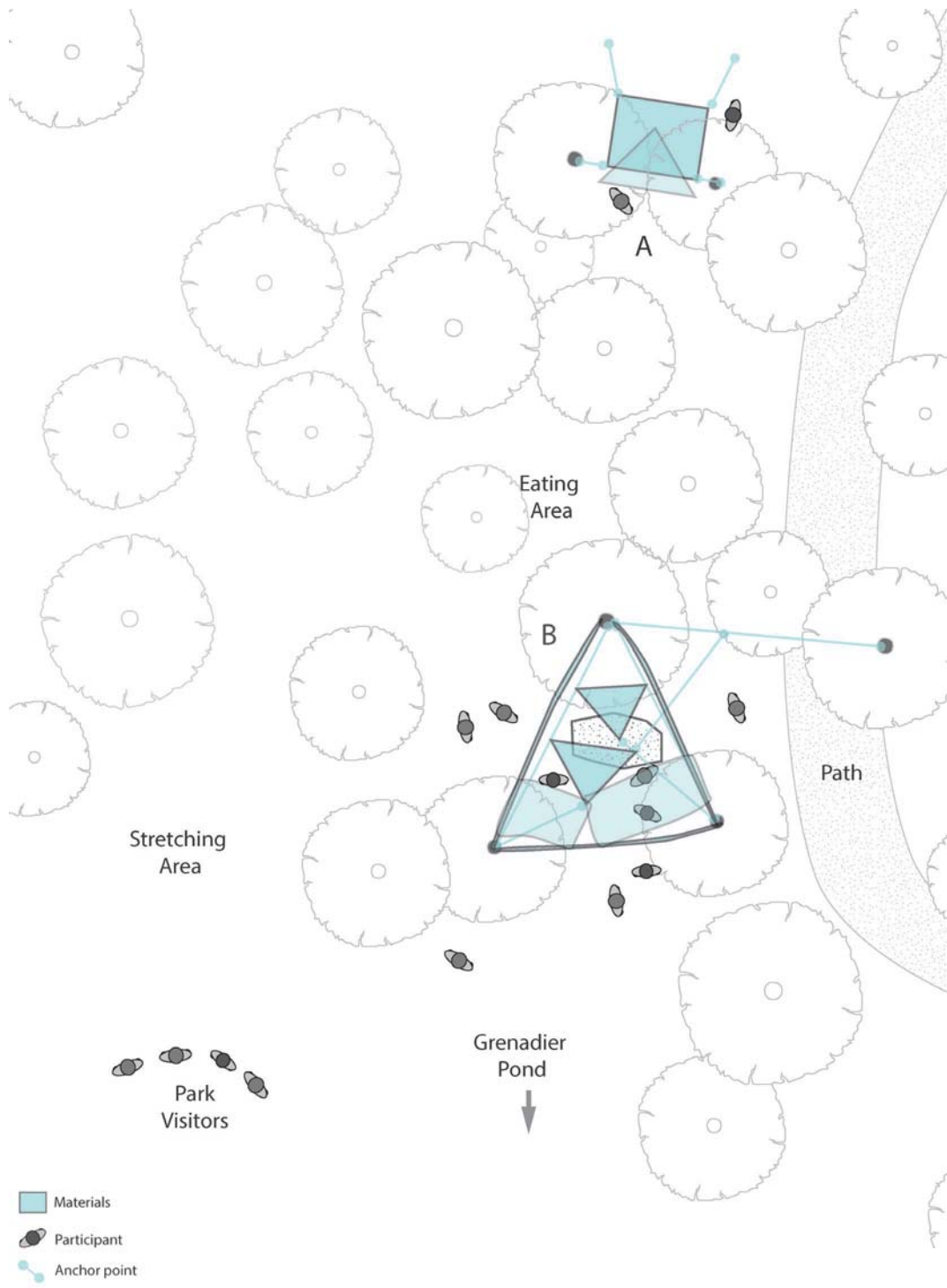
Fig. 4.46 Workshop 2 Day 1 Spatial implications

Intervention A: Refer to figures 4.47 to 4.49. Participants suspended the textiles from surrounding trees to create a 'hammock-like' structure. The hammock, at waist-level, was gingerly tested to determine if it could support the weight of a participant. For second iteration, the textile was elevated to above head height to create a lounge space underneath and to provide shade from the sun. White sheer fabric was hung on two sides to frame their space and view to the pond. The participants decided that they did not want a canopy for their final iteration, so the roof was removed to become the floor.

Intervention B: Refer to figure 4.51 and 4.52. A participant, with a background in film, worked individually to create a narrative for her intervention. She envisioned that a wanderer needed to make camp for the night. Rope was tied to her bike and adjacent tree to drape fabric for a tent. Throughout the iterations, the wanderer increasingly settled into the space. A mini fence was constructed out of twigs and a clothes line was assembled.

Intervention C: Refer to figure 4.53. Several site interruptions were explored by the participants involved this intervention. In the first iteration, trees were wrapped in white fabric to indicate the boundary of the site. In the second iteration, string and rope was used to create lines in space. The lines alluded to drawn 3D figures. Textiles from intervention D were weaved in the webbed space for the final iteration.

Intervention D: Refer to figure 4.54 and 4.55. Participants used fabric to create pathways and spaces between the trees. Initially the fabric was seemingly placed haphazardly. The form was refined during the iterations by tensioning the fabric to the ground and trees to remove slack. The fabric was lowered and raised to ensure minimal overlap since a continuous surface was desired. Several participants from intervention C participated in constructing intervention D.

Intervention E: Refer to figure 4.56. Textiles were manipulated into a hanging tent-like structure. The reflective surface faced the interior to reflect light. The opening of the 'tent' was oriented towards a pedestrian path. Additional surfaces were added during the iterations. The creators of this space where the same individuals who created intervention A on day 1. Once again they utilized their camping knowledge to construct their intervention.

Fig. 4.47 Workshop 2 Day 2 Intervention A. Materials: fabric and rope. Participants testing and developing a hammock-like structure. Two fabric triangles are tied together and suspended from trees.

Fig. 4.48 Workshop 2 Day 2 Intervention A.
Participant evaluating the strength of their
design in the first iteration.

Fig. 4.49 Workshop 2 Day 2 Intervention A.
Iteration 2. The triangular 'hammock' is raised
to head height. Two pieces of sheer white
fabric are stretched inbetween tress to create
an enclusure. A picnic blanket with bananas
are placed on the ground to create an inviting
scene.

Fig. 4.50 Workshop 2 Day 2 Intervention A. In the final iteration, the roof textile is lowered to become the floor.

Fig. 4.51 Workshop 2 Day 2 Intervention B. A narrative for the installation is conjured through the use of props. The bicycle acts as structure, twigs become a fence, a clotheslines hangs in the background, and fabric creates a make-shift shelter.

Fig. 4.52 Workshop 2 Day 2 Intervention B. Materials: fabric, rope, bicycle, and sticks. Participant creating the fence in the final iteration.

Fig. 4.53 Workshop 2 Day 2 Intervention C. Materials: fabric and rope. Clockwise from left. Lines through space are create by ropes between trees. Participant deciding to wrap trees with white cloth. In the final iteration, fabric is weaved through the ropes.

Fig. 4.54 Workshop 2 Day 2 Intervention D. Materials: fabric and string. Views of the iterations and building process. Fabric is draped around the trees and manipulated to decrease slack. Fabric is either raised, lowered, or tensioned. The fabric walls catch the breeze.

Fig. 4.55 Workshop 2 Day 2 Intervention D.
From top to bottom. Exterior and interior view
of the final iteration.

Fig. 4.56 Workshop 2 Day 2 Intervention E. Materials: fabric, rope and plastic stake. Fabric triangles create a tent-like structure. The reflective surface on the interior reflect light and the colours of the environment. A 'floor' is added in the final stages.
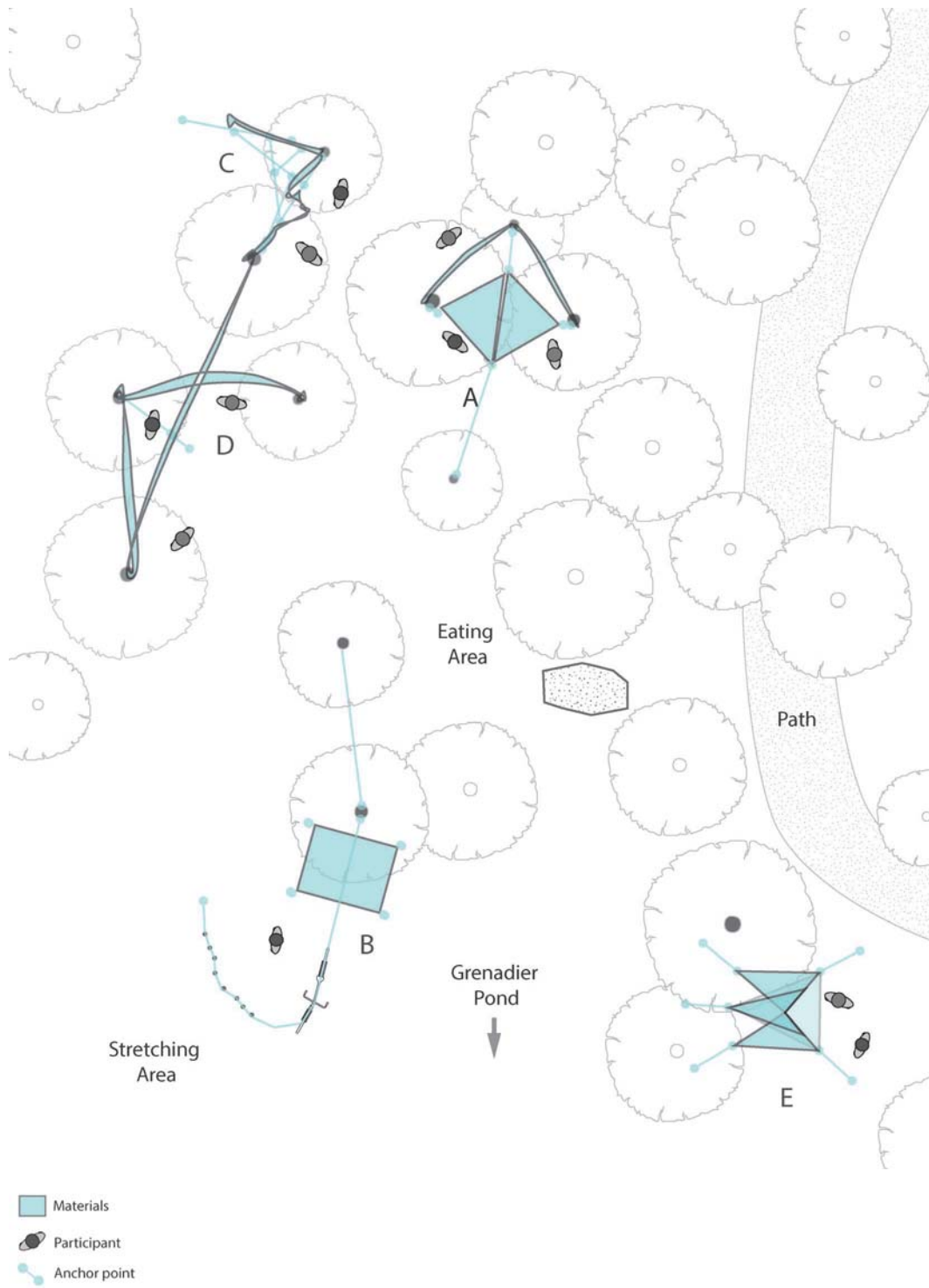
Fig. 4.57 Workshop 2 Day 2 Spatial implications.

Within the figure:

C

A

D

B

E

Eating Area

Path

Grenadier Pond

Stretching Area

Materials

Participant

Anchor point

Workshop 2 Analysis

I learned to use my imagination when it comes to space and creating comfortable areas in random areas. May use this for outdoor excursions.

I learned how hard it is for me to make spatial decisions.

Objects can be used to make space in any environment. Not all walls make a box. Materials can be reused for new purposes.

I learned that making spatial decisions is a lot harder than I thought. Something may "look" or "seem" like a great idea, but when executed, can completely fall apart. One must take into account every detail of one's surrounding and how it may help or hinder!

- Written comments from participants on the post-workshop questionnaire

Through assessing the pre-workshop and post-workshop questionnaire, I was able to determine whether the participants were progressing, regressing or stagnating on the spatial empowerment spectrum. All participants indicated that they acquired knowledge during the workshops and 64% perceived architecture differently after the workshop. The data, illustrated in figure 4.58, indicates that participants experienced an increase in contextual awareness, confidence in spatial making, and perceived spatial action opportunities as a result of partaking in the workshops. Interest in architecture and architectural learning was enhanced. Participants who recorded 'unsure' or 'maybe' to questions in the pre-workshop questionnaire became more definite in their post-workshop responses. The shift from 'unsure' or 'maybe' to 'yes' or 'no', demonstrated that the individuals developed spatial decision making capacity. Anecdotal notes and observational data suggests that the participants acquired knowledge about the characteristics, opportunities, and limitations of the workshop materials and site. They also learned about the difference between space and an object in space, hapticity, and implied boundaries.

Fig. 4.58 Workshop 2 Questionnaire results
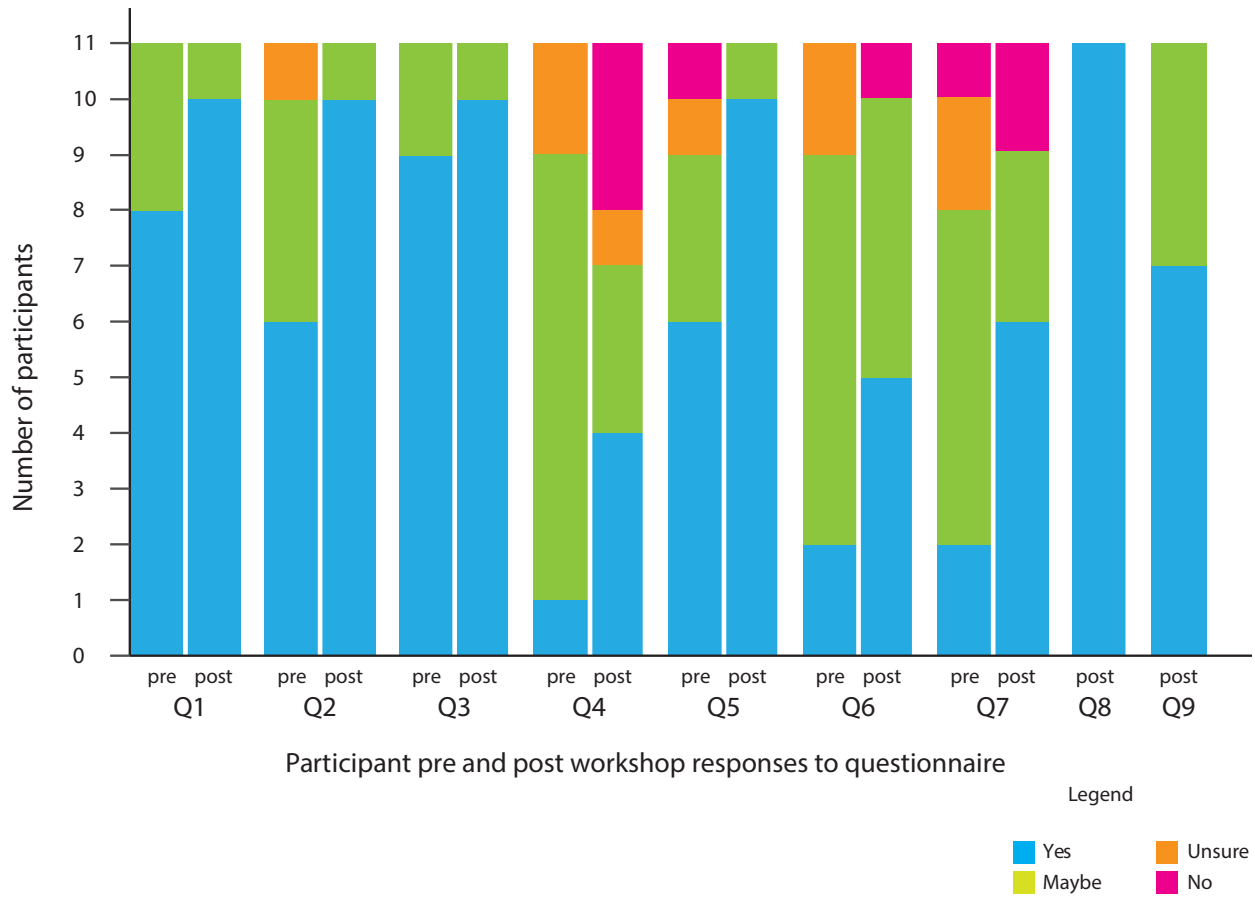
Participant Questions

	yes	maybe	unsure	no
Q1. Do you want to learn about architecture?				
Q2. Do you think architecture is important in your life?				
Q3. Do you think about the aesthetics of your surroundings?				
Q4. Are you satisfied with existing built space/architecture?				
Q5. Would you change the aesthetics of your environment?				
Q6. Do you feel confident in making spatial decisions?				
Q7. Do you feel you have opportunities to change your environment?				
Q8. Did you learn anything during workshops?				
Q9. Do you have a different perception of architecture?				

4.4   Summary of Workshops

Each person interprets space differently and brings different meanings and needs to their environments.

- Written comment from Workshop 2 participant

As the facilitator for workshop 1 and 2, I discovered that selecting appropriate materials, context, and pedagogical approach is fundamental in maintaining participant engagement. Minimal boundaries and guidance allowed participants to develop contextual awareness, co-created learning and the confidence to appropriate space. By reflecting and discussing their work, the participants gained insight into their value systems which improved their self-awareness. They were able to give meaning and clarity to their spatial decisions. Participants reported that self-directed learning clearly increased their sense of empowerment. Engaging in the participant's previous knowledge and interests improved the perceived relevancy of activities and workshop process. As a result, the feeling of relevancy enhanced motivation and interest in spatial production.

The workshops created temporal spaces whose forms, and functions developed and evolved akin to the participants' intentions. The workshop activities fostered ownership, investment and connection to the site and one another. Spatial negotiations and choices around materials, form, and intentions was evident between individuals during the building process. Open ended and easy to use materials are conducive to allow participants the physical opportunity to realize their micro-environment interventions. By changing the materials and adapting the lesson plan the succeeding workshops were deemed more successful. Participants responded positively to the guided meditation. The varied aesthetic results of the workshops indicate that spatial interventions foster a heterogeneous spatial reality. Specific indicators of spatial empowered individual include architectural vocabulary use, spatial appropriation through defining thresholds and engagement with the activity and others. The success of the spatial intervention relies on the participant's understanding of scale, material manipulation,

Fig. 4.59 Opposite page. Workshop 2 spatial empowerment strategy analysis.

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Domain	Theory/Frame	Tactic

Capacity Building

spatial skills & knowledge

- inquiry-based experiential learning
  - provide various forms of representation of information
  - positive encouragement
  - connect to participant interest
  - scaffold learning through iterative process
- social learning theory
  - explicate data in surroundings
  - promote social interactions
  - collaborative learning activities
- multi sensory-creative pedagogy
  - activate senses
  - multi-sensorial activities
  - one-to-one building activities
- one-to-one scale
  - connect to space to human scale
  - facilitate discourse
- architectural language
  - provide minimal guidance
- emancipation
  - common 'object'
  - ask questions

critical thinking

- provocation
  - distort, reverse, or exaggerate reality
- reflection
  - architectural precedent
- critique
  - analyze existing context
- meditation
  - guided meditation scripts
- imagination/creativity
  - bisociation by defining conflicting matrices
  - instigate conflict
  - improvisation, chance, problem solving

Inclusive Practice

architecture

- participation
  - involve participant in all stages spatial empowerment
  - create network
- discourse
  - create common vocabulary
  - promote discourse

pedagogy

- Tribes Trail community building
  - allow choice
  - value differences
  - differentiate instruction
  - respectful tasks
  - collaborative learning activities
  - opportunities for feedback

Spatial Action

- opportunities
  - heterotopic interventions
    - manipulate the micro-environment
    - appropriate space
  - informal and formal gatherings
    - subvert space
- resources
  - network
    - workshops, classes, lessons
  - database
    - guidebook
- implementation, monitoring & evaluation
  - assessment
    - evaluation rubric

Legend
Strategy not evident
Strategy evident

and contextual awareness. Contextual awareness could be measured by how the intervention used the site For example, in workshop 2, the points of contact to trees on day 2 increased from day 1.

Results of workshop 1 and 2 formed the theoretical, conceptual and pragmatic frameworks for the proposed spatial empowerment theory in part 3. The Minds On activities influenced the guided meditations scripts in the guidebook in part 5. The analysis of the spatial outcomes produced by the participants determined the necessary architectural knowledge and skills needed for spatial action. The workshops revealed that iterative one-to-one spatial micro-interventions are crucial in increasing spatial decision making capacity.

4.5   Future Workshops

The assessment of workshop 1 and workshop 2 shown in figures 4.35, 4.59 and 4.60 indicate that additional action and workshop methodology must be established.   Along the spatial empowerment spectrum, the participants reside in the transformative and collaborative level in the spatial capacity domain. Individuals must move towards increasing spatial empowerment by actively facilitating the process themselves. The following suggestions are for future workshops. The suggestions for improvement are derived from analyzing the gap between the spatial empowerment rubric and existing workshops.

Spatial Empowerment Workshop Strategy Assessment

Fig. 4.60 Workshop Spatial empowerment rubric evaluation. Participants were involved in building their own spatial capacity and inclusive environment. Spatial action was primarily dictated by the facilitator.

CB   **Capacity Building**

• Future workshops could emphasize the critique of existing spaces.

• Previous participants can become the workshop facilitators, allowing the previous teacher-architect to release their responsibility.

• The participants expertise could be taken into consideration to create cross-disciplinary tactics.

111

Domain   Tactic

Capacity Building
- provide various forms of representation of information
- connect to participant interest
- explicate data in surroundings
- one-to-one building activities

provocation
- distort, reverse, or exaggerate reality

critique
- analyze existing context

imagination/ creativity
- bisociation by defining conflicting matrices
- instigate conflict
- improvisation, chance, problem solving

Inclusive Practice
- involve participant in all stages spatial empowerment
- create network
- create common vocabulary
- differentiate instruction
- opportunities for feedback

Spatial Action
- manipulate the micro-environment

heterotopic interventions
- appropriate space
- subvert space

resources
- database

evaluation rubric
- assessment

Fig. 4.61 Future workshop strategies to consider. Workshops 1 and workshop 2 did not successfully address all spatial empowerment criteria.

IP   **Inclusive Practice**

• Future workshops could instigate conflict in the design process to ensure a 'true' democratic process.

• The number of participants could increase to provide additional data. A wider community would be involved.

• Determining existing organizations in communities and fostering relationships would broaden the spatial empowerment network.

• Developing forums for spatial discourse to occur could increase inclusive attitudes. For example: online blogs, workshops, community meetings.

SA   **Spatial Action**

• Facilitating activities to encourage appropriation and subversion of public space and private space such as guerrilla installations, squatting, and spatial protests, would develop conscious action in current spatial conditions.

• Intellectual, social and economic resources should be assembled.

• An updated guidebook or other common tool could be part of the materials used in the future workshops.

• Spatial empowerment evaluation should be conducted with the participants to reinforce current successful strategies and to guide future development.

• The obstacles of spatial empowerment; access to finance, access to land, public policy, economic, time, access to resources, asset-driven thinking, existing attitudes, process, and methodology, should be reflected upon. By defining constraints, a deeper understanding of the problem and approach can be formulated.

Although the preceding suggestions are broad and do not provide in depth descriptions of activities, workshop outlines, or pedagogical strategies, their overall proposal must be considered to ensure progress on the spatial empowerment spectrum. Figure

4.61 illustrates spatial empowerment tactics that were either not present or fully developed in workshop 1 and 2. For specificity, if the participants from workshop 2 were to pursue further spatial empowerment the following activities would be recommended. Workshop 3 would focus on developing critical spatial thinking and meaningful action. The workshop, with a facilitator present, could empower the participants to transform their residence. Critique of their space would occur through guided meditations and examining precedents. After the participant's intention and desired outcome of the spatial intervention is determined, hypotheses could be prototyped and assessed. Low-tech and low-cost solutions, such as rearranging furniture, suspending fabric, and modifying light fixtures could reveal latent spatial potential of their homes. The participant's spatial action within a meaningful environment could act as a reminder and catalyst for their agency. In addition, the participants could follow lessons plans within the guidebook with or without a facilitator.

5.0

Guidebook
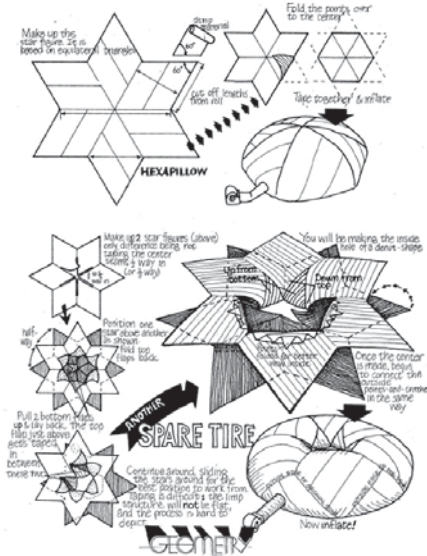
Fig. 5.1 Antfarm's *Inflatocookbook.*

91. Chip Lord et al., *Inflatocookbook,* 2nd ed.
(San Francisco: Ant Farm, 1973).

Fig. 5.2 *A Practical Guide to Squatting* page on
the tools needed to enter a site.

A guidebook was produced to culminate and represent the spatial empowerment theory outlined in part two and part three. *1 to 1: A Guide to Spatial Empowerment* falls in the tradition of informal 'how-to' literature intended to assist individuals without 'expert' knowledge to gain understanding for a specific topic. *1 to 1* is influenced by the ideology, illustrations, and format of Antfarm's *Inflatocookbook*, Larraine Henning's *A Practical Guide to Squatting* and Environmental Development Agency of South Africa's *People's Workbook*. The precedent guidebooks utilize simple and clear illustrations and vocabulary as effective communication strategies, provide capacity building activities, cultivate self-reliance, and encompass a holistic approach with relevant practical and abstract content.

Antfarm's Inflatocookbook

Inflatocookbook was published and created in 1971 by architecture collective Antfarm. The inflatable architecture manual provides the reader with information, activities, and provocations with accessible language and visuals. The intention of the project was to compile and distill the information and skills that the collective acquired through pneumatic architecture experiences and practice. The manual pages fall into eight categories: pneumads, air supply, geometry, fantasy, anchoring, events, materials, and fundamentals. These categories provide the reader with the necessary information for self-created pneumatic architecture. The book provides resources for material sourcing, children activities, cut-out components, pneumatic concepts, and news clippings. [91]

A Practical Guide to Squatting

Larraine Henning's *A Practical Guide to Squatting,* created as part of her Masters of Architecture degree at University of British Columbia, provides an alternative habitation approach. The illustrated guide subverts architectural, political, social and economic ownership

of space through squatting, while providing practical tips for how an informal community might inhabit a vacant building. Simple illustrations guide the participant through necessary laws regarding squatters and owner rights along with essential skills to squat.[92] Examples of basic information include identifying sites, picking locks, the use of potential found materials, site maintenance, and public relations. The guide enables the reader to become well-versed in becoming a squatter.

92.   Larraine Henning, *A Practical Guide to Squatting* (Windsor: Inky's Digital/Offset Print & Design, 2013).

People's Workbook: Working together to change your community

Published by the Environmental and Development Agency of South Africa in 1981, *People's Workbook* aims to assist in organizing individuals and communities through educating and promoting best practices in rural areas. The workbook includes information about agriculture, water supply, access to resources, animals, legal rights, working in groups, building, and community health. The information is presented through diagrams, appropriate language for low level literacy, stories, and interviews. Instructions, such as soil and irrigation strategies, are easy to follow. The building portion of the workbook outlines how to set-up a site, determine site conditions, and build foundations, walls, bricks, floors, roofs, fly-proof pit toilet, and farm buildings. Sun direction, wind, and existing water paths sections are also included as important information to consider.[93]

Fig. 5.3 People's Workbook: Working together to change your community illustrates how to build a wall.

93.   South Africa Environmental and Development Agency, *People's Workbook: Working Together to Change Your Community.* (Johannesburg, 1981), 473.

5.1   1 to 1: A guide to spatial empowerment

1 to 1: A Guide to Spatial Empowerment is a tool to encourage spatial empowerment. The format, aesthetics, content, and approach of the guidebook are influenced by the spatial empowerment strategy outlined in Part 1 and the guidebook precedents. As a format, the guidebook can be easily physically and digitally reproduced to distribute to individuals, communities, and organizations. *1 to 1: A Guide to Spatial Empowerment* contains engaging and playful images in conjunction with clear language. This enables an inclusive approach for the reader. The content of the guidebook fall into three broad categories: information, action, and reflection. The categories are adopted from spatial empowerment domains: capacity building, inclusive practice, and spatial action. The information category contains three subcategories: events, architectural knowledge and precedent. The action category includes lesson plans and participatory activities. Meditative instigations such as provocations and mindful practice constitute the reflection category.

1 TO 1

A GUIDE TO SPATIAL EMPOWERMENT

A GUIDE

ONE-TO-ONE, A SPATIAL DECISION MAKING GUIDE, PROVIDES
SUGGESTIONS, EXAMPLES, INFORMATION, AND ACTIVITIES THAT
CAN BE USE TO INCREASE YOUR UNDERSTANDING OF ARCHITECTURAL
CONCEPTS.

WE CAN IMAGINE, DESIGN, & CREATE A BETTER DIFFERENT
SPATIAL WORLD.

YOU DO NOT NEED TO BE AN ARCHITECT TO USE THIS GUIDE.

PROGRAM

WHAT IF YOU HAD THE POWER AND KNOWLEDGE
TO SHAPE YOUR ENVIRONMENT? WHAT WOULD
YOU DO?

WOULD YOU LET OTHER PEOPLE DICTATE THE
AESTHETICS OF YOUR LIFE?

NO.

LET'S LEARN HOW TO SHAPE AND TRANSFORM
OUR WORLD IN OUR VISION.

WE NEED TO BECOME ADVOCATES AND
ACTIVISTS FOR MEANINGFUL AND RELEVANT
ENVIRONMENTS.

WE HAVE THE RIGHT TO INFORM THE
SPATIAL DECISIONS THAT IMPACT OUR LIFE.

ALL OF US HAVE TO POTENTIAL TO HOLD
THE BUILDING BLOCKS OF OUR AESTHETIC
FUTURE IN OUR HANDS.

LET'S BECOME THE AGENTS OF CHANGE.

YES.

HEY YOU.

D.I.Y. ATTITUDE

AESTHETIC/SOCIAL
EXPERIMENTATION

MATERIALIZING IDEAS

1-TO-1

SCALE

MICRO-ENVIRONMENT
INTERVENTIONS

OPPORTUNITIES

CONTEXT

MATERIALS

WORKSHOPS

CONSTRUCTIVISM

METHODOLOGY

ARCHITECTURAL
STANDARDS

VOCABULARY

PLAY

TEACHING

ARCHITECTURAL
KNOWLEDGE/SKILLS

LEARNING

TRANSFER OF
KNOWLEDGE

KNOWLEDGE

DIALOGUE

FROM 'EXPERT
TO 'NON-EXPERT'

THROUGH

DESIGN PROCESS

CREATIVITY

POWER
RELATIONS

PARTICIPATION/
COLLABORATION

**SPATIAL
EMPOWERMENT**

DEFINING THE
PROBLEM

ITERATIONS

OPEN AESTHETICS

THROUGH

CO-CREATED SPACE

COMMUNITY

ACTION

MEDITATION

CONNECTING TO
MEANING

OWNERSHIP

RECLAIMING SPACE

AWARENESS

CONFLICT

PROVOCATION

GUERILLA
INSTALLATIONS

DEFINING COMMON GOALS

REFLECTION

CHANGE

IMAGINE A DIFFERENT
SPATIAL WORLD

CRITIQUE
EXISTING
SPACE

info

LINES OF THOUGHT ON SPATIAL EMPOWERMENT.

SOCIETY
Government
MUNICIPALITY
Community
DEVELOPER
ARCHITECT
Builder
INDIVIDUAL

info

Us & **Them**

THEY CHANGE US. WE CHANGE THEM.

SOCIETY
Government
MUNICIPALITY
COMMUNITY
Developer
Architect
BUILDER
INDIVIDUAL

The News

0/00/0000

SPATIAL CRISIS!

Toronto becomes Canada's second most unaffordable housing market

"Where are we suppose to live?"
-Local resident

A local spatial crisis hits Toronto, Ontario. Housing prices skyrocket to astronomical costs. This has left many citizens vulnerable to becoming 'space-less'. Affordability in city living becomes a major concern.

The latest 2014 Annual Demographia International Housing Affordability Survey, which ranks cities comparing median incomes against median home prices, indicates that Toronto squarely in the "Severely Unaffordable" range. The survey notes Toronto's housing affordability has severely deteriorated over the last decade.

TD Economics, has found that Toronto's average rent costs are approximately 50% of the income from the lower 40% of earners. The report, by vice-president and deputy chief economist Derek Burleton and economist Diana Petramala, says that housing can be considered affordable when a household's living expenses doesn't exceed 30% of its monthly pre-tax income. Therefore, lower income households are spending half of their earning on a place to live.

Outrageous.

As of 2013, 165,069 households were on the affordable housing waiting list. Only 260 rental units opened in 2013,

TORONTO HOUSING BECOMES UNAFFORDABLE!

Man has no other spatial option than to inhabit the streets on a cold and wet Toronto day.

which was a 77% decrease from 2012. Only 7 units built for affordable ownership were made available in 2013, which was 98% less than in 2012. The supply of affordable housing from the City of Toronto has been dramatically and steadily decreasing. The proportion of people in need of affordable housing and its current supply is severely skewed. As a result, approximately 950 families are using shelter services.

Besides the lack of affordable housing supply from the City of Toronto, other factors attribute to unaffordable housing. The low vacancy rate of 1.7% for one-bedroom rental units in 2013 indicates a deficit in available space. Restrictive government building regulations have forced developments undergo a lengthy process for approval and construction. Developers, builders, and architects are caught up in struggle between creating affordable, yet profitable places to live.

Not enough is being done. All have a **right to space**. Spatial empowerment is one of the approaches to tackle the issue.

Determining spatial needs and desires, will enable the demand for action. Spatial capacity building can empower us to make those changes. We are the holders of our spatial future.

"Only when we, the public, take matters in our own hands. Things can change."

House that the majority of Torontonian's cannot afford
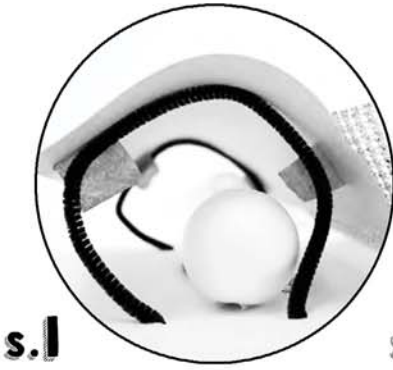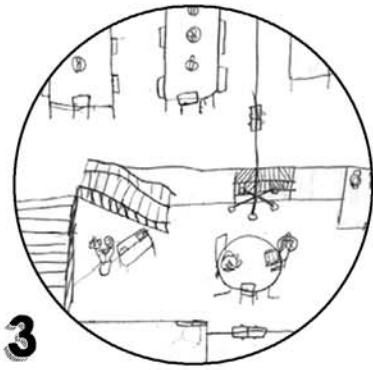
s.1   s.2   s.3

AT A TORONTO ELEMENTARY SCHOOL, 6 SPATIAL DECISION WORKSHOP SESSIONS TOOK PLACE BETWEEN OCTOBER 2013 TO NOVEMBER 2014. 6 TO 20 GRADE 3 & GRADE 4 STUDENTS HAD THE OPPORTUNITY TO EXPLORE A HANDS-ON APPROACH TO ARCHITECTURE. STUDENTS USED ART MATERIALS TO SHARE THEIR OWN SPATIAL IDEAS & EXPERIENCES. MANY WONDERFUL & UNIQUE ARCHITECTURAL MODELS WERE CREATED! BASIC ELEMENTS OF ARCHITECTURE (WALL, FLOOR, CEILING, OPENING) WERE INTRODUCED. THEY WORKED TOGETHER & INDEPENDENTLY TO CREATE SPACES AT DIFFERENT SCALES WITH VARIOUS BUILDING MATERIALS. FANTASTIC PROBLEM SOLVING AND COLLABORATION WAS EVIDENT AMONG THE STUDENTS! STUDENTS ALSO EXPLORED HOW DESIGNERS TYPICALLY REPRESENT ARCHITECTURE WITH PLAN & ELEVATION DRAWINGS. THEY SKETCHED OUT THE EXISTING LIBRARY SPACE & THEIR DESIGN PROPOSAL. STUDENTS SHARED INVENTIVE IDEAS OF HOW THE SPACE COULD BE USED. MORE TVS, SNACK AND CANDY TABLE & CLUSTERED SEATING AREAS!!! STUDENTS BUILT FULL-SCALE 'READING' SPACES WITH CARDBOARD BOXES, TAPE, PLASTIC SHEETS, & PLASTIC PIPES. STUDENTS DEVELOPED THEIR SPATIAL UNDERSTANDING THROUGH ARCHITECTURAL LANGUAGE, REPRESENTATION, & BUILDING AT A ONE-TO-ONE SCALE!

THE STUDENTS BECAME THE BUILDER, DESIGNER & INSTIGATOR OF A COLLABORATIVE SOCIAL SPACE!

This is more fun than playing soccer!

s.4 -6

event

translation

SCAFFOLDING LEARNING IS CRUCIAL TO BUILD AN INDIVIDUAL'S CAPACITY.

THE STAKEHOLDERS OF SPATIAL PRODUCTION HOLD POLITICAL, SOCIAL, ECONOMIC, AND INTELLECTUAL CAPITAL.

LEGITIMACY CAN BE ACHIEVED THROUGH INCLUSIVE PRACTICE.

SPATIAL EMPOWERMENT IS A COMPLEX, MULTI-DIMESIONAL PROCESS.

INQUIRY-BASED LEARNING LEADS TO ENGAGED STUDENTS.

WHAT IS THE PROGRAM OF THE SPACE?

THIS PARTI ILLUSTRATES MASSING AND SPATIAL ORGANIZATION.

THE SCALE OF THE BUILT FORM CREATES TENSION IN RELATION TO THE CONTEXT.

THE FINE GRAIN JUNCTURES OF THE PROJECT NEED TO BE ARTICULATED.

THE TECTONICS OF ARCHITECTURE ARE FASCINATING.

THE FENESTRATION CREATES A SPATIAL NARRATIVE.

THE THRESHOLDS OF THE SPACE DELIMINATE THE SPATIAL TERRITORIES.

DIFFERIENTIATION IS CRITICAL TO ENSURE STUDENT SUCCESS.

THROUGH PRAXIS, I CAN THEORISE A SPATIAL EMPOWERMENT METHODOLOGY.

WE CAN LEARN FROM OUR PAST EXPERIENCES.

PEOPLE WITH POWER HAVE THE INFLUENCE TO BUILD.

IF WE FORM A COMMUNITY, WE WILL HAVE THE POWER TO MAKE A DIFFERENCE.

CHANGE IS DIFFICULT.

PEOPLE LEARN WHAT IS INTERESTING TO THEM.

HOW ARE YOU GOING TO USE THE SPACE?

THIS IS HOW I THINK THE SPACES SHOULD BE ARRANGED.

HOW DOES THE SIZE OF THE SPACE RELATE TO THE SURROUNDING ENVIRONMENT?

HOW DO WE BUILD THIS THING?

COOL BUILDING.

THE WINDOWS AND OPENINGS OF THE BUILDING HAVE A PURPOSE.

THERE ARE NO WALLS IN THE SPACE.

EVERYBODY HAS DIFFERENT LEARNING AND TEACHING NEEDS.

I READ EXAMPLES AND TRIED OUT IDEAS TO FIGURE OUT HOW WE CAN ALL HAVE THE RIGHT TO BUILD, OWN, AND ALTER SPACE.

What I really mean
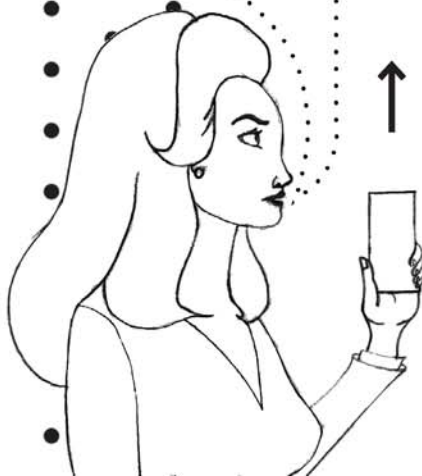
SELECT ARCHITECTURAL, EDUCATIONAL, AND EMPOWERMENT JARGON TRANSLATED.

info

What You Might Need to Know ABOUT ARCHITECTURE

ARCHITECT

=

CONSCIOUS SPATIAL DECISION MAKER

THE FOLLOWING ILLUSTRATIONS PROVIDE A SNAPSHOT OF
ARCHITECTURAL INFORMATION THAT MIGHT BE IMPORTANT FOR
SPATIAL INTERVENTIONS. A REPERTOIRE ARCHITECTURAL LANGUAGE
AND CONCEPTS ARE NECESSARY TO INFORM CONSCIOUS SPATIAL
DECISIONS.

SPATIAL
ADJ.

1. RELATING TO SPACE AND THE RELATIONSHIP
OF OBJECTS WITHIN IT. OCCUPYING, OR HAVING
THE CHARACTER OF SPACE
2. RELATING TO PEOPLE'S ABILITY TO UNDERSTAND SIZE,
SHAPE, POSITION, AND DEPTH
3. RELATING TO THE POSITION, AREA, AND SIZE OF THINGS

INCREASING SPATIAL
CAPACITY & AWARENESS

ELEMENTS OF FORM

POINT

POSITION IN
SPACE

LINE

EXTENDED POINT
POSITION, LENGTH, &
DIRECTION

PLANE

EXTENDED LINE
POSITION, LENGTH,
WIDTH, SHAPE, SURFACE
& ORIENTATION

FORM

EXTENDED PLANE
POSITION, LENGTH,
WIDTH, DEPTH, FORM,
SPACE, SURFACE &
ORIENTATION

ARCHITECTURAL ELEMENTS

WALL

FLOOR

CEILING

OPENING
(WINDOWS/DOORS)

**BOUNDARIES OF
A SPACE**

**ARCHITECTURAL
REPRESENTATION**

PLAN
BIRD'S EYE VIEW
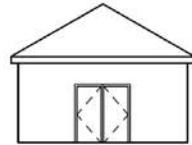
ELEVATION
SIDE VIEW

SECTION
SIDE CUT VIEW

3-D

info

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CONSTRUCTION STRATEGY
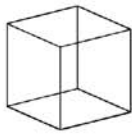
FRAME
(1D TO 3D)
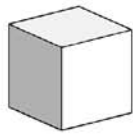
SURFACE
(2D TO 3D)
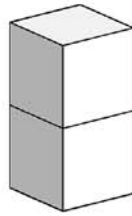
COMPRESSION
(PUSHING FORCE)
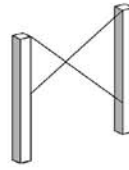
TENSION
(PULLING FORCE)

GRIDS & ALIGNMENT

ALIGNED

OFFSET
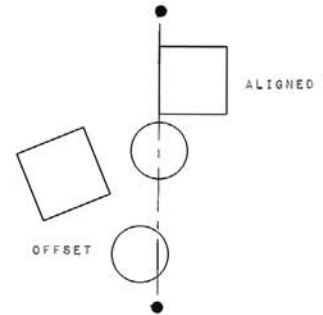
AXIS

LINE DEFINED BY 2
POINTS; FORMS, ELEMENTS
AND SPACES ARE ARRANGED
IN RELATION

SPATIAL RELATIONSHIPS

SPACE

SPACE

SPACE

SPACE
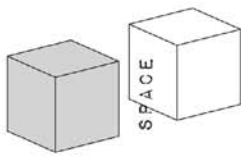
SPACE

SPACE

SPACE

INBETWEEN

BESIDE

AROUND

LINES OF
SYMMETRY
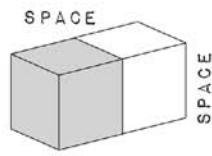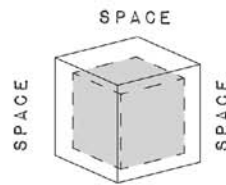
SYMMETRY

BOOLEAN OPERATIONS
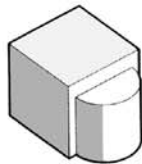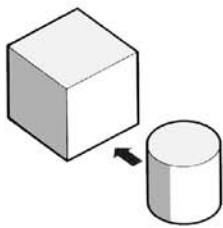
UNION
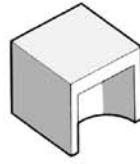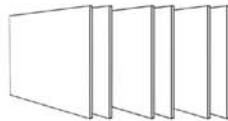
SUBTRACT
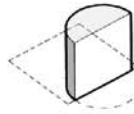
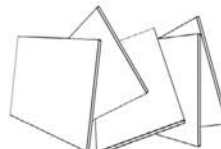**INTERSECT**
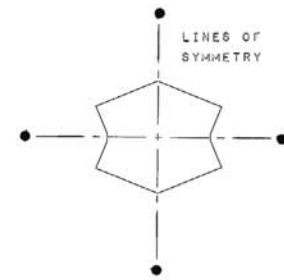
RHYTHM & REPETITION

SINGULAR
(A)
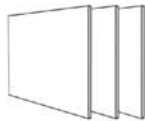
REPETITION
(A+A+A)

RHYTHM
(AA+AA+AA)

FREE FORM
(O+G+E+T+K)

GRID

NETWORK OF AXES;
A STRATEGY FOR SPATIAL
ORGANIZATION

space can be...

light   dark

IMMENSE   Open

closed

ORGANIC

intimate   soft   hard   CONSTRUCTED
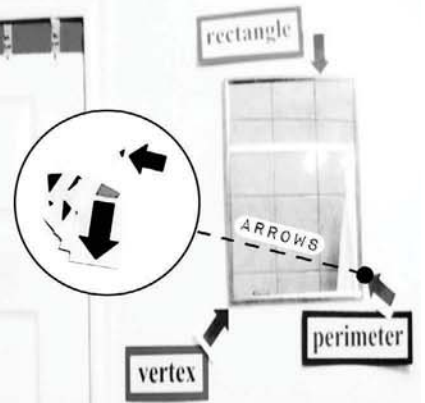
vast

127

DOCUMENTING SPACE
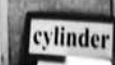
THROUGH DOCUMENTING
FAMILIAR/UNFAMILIAR SPACES THROUGH
THE ACT OF EXPLICATING EMBEDDED
ARCHITECTURAL INFORMATION
(MEASUREMENT & VOCABULARY), WE CAN
BETTER UNDERSTAND THE DIMENSIONS OF
OUR SPATIAL ENVIRONMENTS.

height = 2.4m
or 7'40"

width

2m

dimension

surface area = 1.64m²

5ft

rectangle

ARROWS

vertex

perimeter

rectangular prism

egg

face

vertex
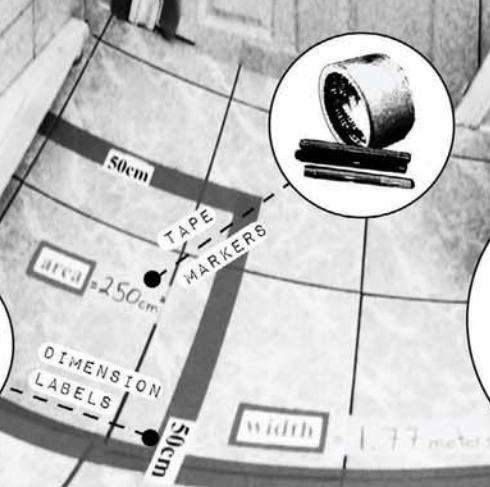
circle

diameter

square

ACT:

CHOOSE SITE /
MEASURE SPACE WITH MEASURING
TAPE /
LABEL MEASUREMENTS /
CALCULATE DIMENSIONS, AREAS,
& VOLUMES /
LABEL SPACE WITH
ARCHITECTURAL VOCABULARY /
REPEAT WITH A DIFFERENT
SPACE /
COMPARE SPATIAL IMPACT OF
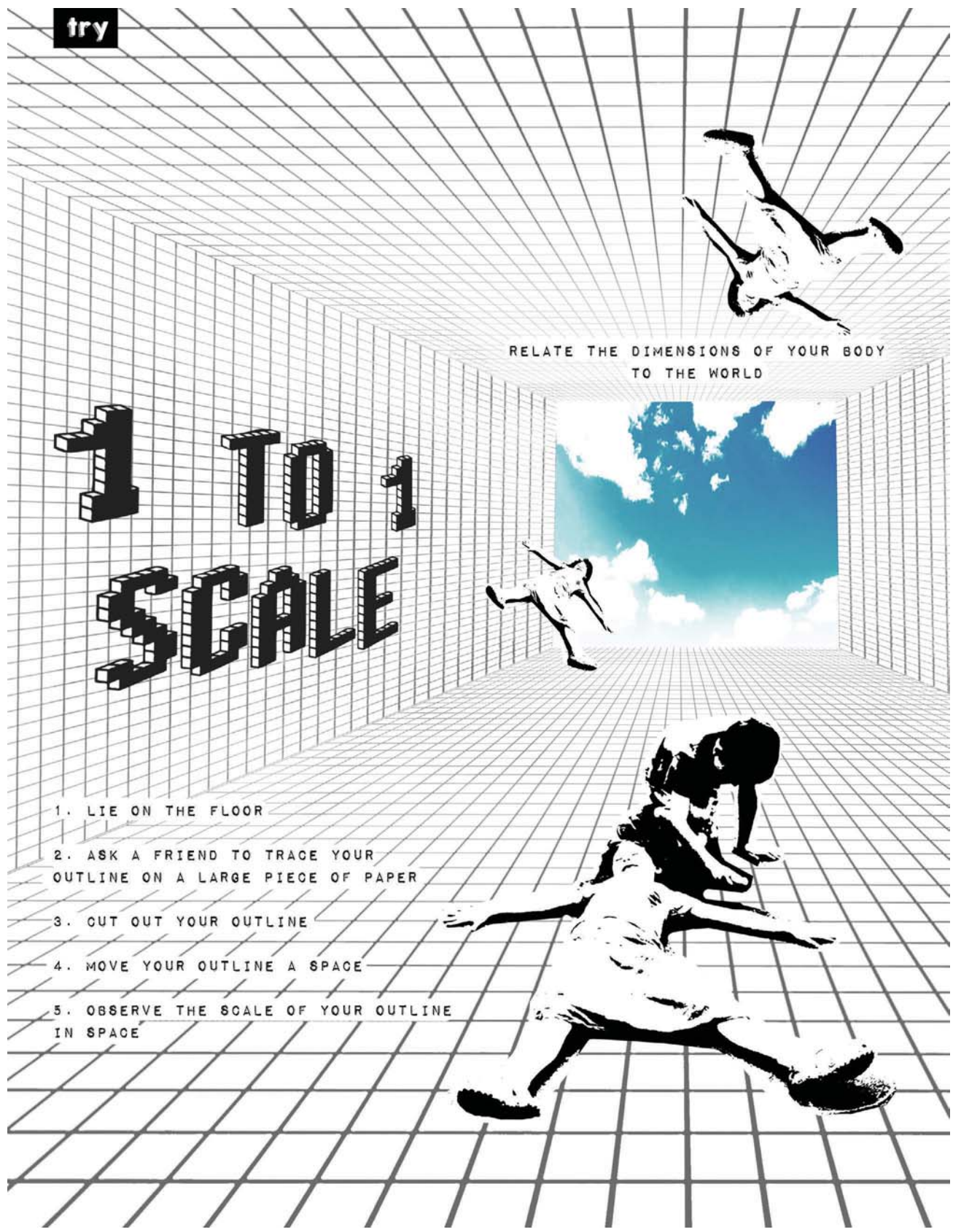SPACE 1 AND SPACE 2 /

cylinder

radius

ARCHITECTURAL
VOCABULARY

face

rectangle

line of symmetry

50cm

TAPE
MARKERS

area = 250cm²

2m 10ft
1m

DIMENSION
LABELS

50cm

width = 1.77 meters

MATERIALS

MEASURING TAPE

THE EXAMPLE:
DOCUMENTING A
WASHROOM

1 TO 1 SCALE

RELATE THE DIMENSIONS OF YOUR BODY
TO THE WORLD

1. LIE ON THE FLOOR

2. ASK A FRIEND TO TRACE YOUR
OUTLINE ON A LARGE PIECE OF PAPER

3. CUT OUT YOUR OUTLINE

4. MOVE YOUR OUTLINE A SPACE

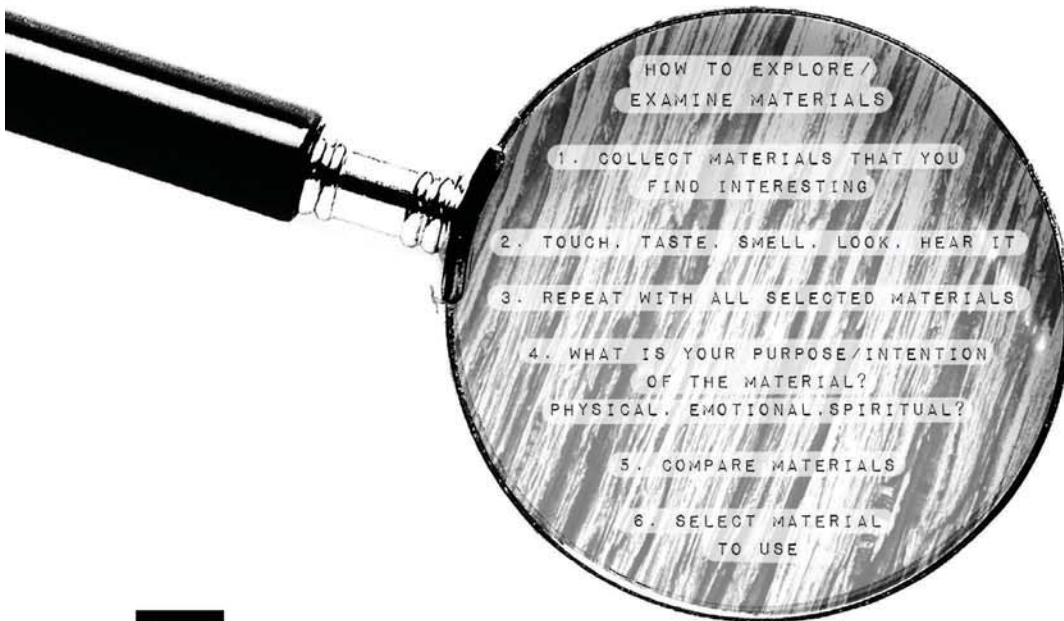5. OBSERVE THE SCALE OF YOUR OUTLINE
IN SPACE

Materials matters

HOW TO USE MATERIALS

1. COLLECT MATERIALS THAT YOU WILL BUILD WITH

2. TEST/PLAY/BUILD

3. EVALUATE THE RESULTS

4. REPEAT

HOW TO EXPLORE/ EXAMINE MATERIALS

1. COLLECT MATERIALS THAT YOU FIND INTERESTING

2. TOUCH, TASTE, SMELL, LOOK, HEAR IT

3. REPEAT WITH ALL SELECTED MATERIALS

4. WHAT IS YOUR PURPOSE/INTENTION OF THE MATERIAL? PHYSICAL, EMOTIONAL, SPIRITUAL?

5. COMPARE MATERIALS

6. SELECT MATERIAL TO USE

try

130

CONTEXT CAN BE A STARTING
POINT FOR SPATIAL
PRODUCTION

SPATIAL BOUNDARIES
OF THE CONTEXT
PROVIDE
STRUCTURAL
AND
CONCEPTUAL
FRAMEWORKS
FOR A
PROJECT.

HOW DO
YOU
CHOOSE
A SITE
TO BUILD
UPON/
ALTER?

ASK
YOURSELF.

WHAT QUALITIES
DO I WANT IN
MY SITE?
ATMOSPHERE. SITE
LINES. VIEWS?

WHAT IS AROUND AND ON
THE SITE?
PEOPLE. PLACES. THINGS?
WHAT IS BEHIND. INFRONT.
ABOVE. BELOW. INSIDE. OR
OUTSIDE?

WHAT'S THE DIRECTION OF
THE SUN OR THE LIGHT SOURCE?

HOW DOES WIND OR AIR FLOW AFFECT
MY SITE?

CAN I USE ELEMENTS OF THE CONTEXT
TO SUPPORT/BE THE STRUCTURE?

DO YOU KNOW ANY SITES THAT CAPTURE
YOUR SPATIAL INTENTIONS?
IF YES. GO CLAIM IT.
IF NO. EXPLORE. THEN CLAIM IT.

WHAT DO YOU DO WHEN
YOU DON'T HAVE YOUR
VERY OWN SPACE?
CLAIM IT!

CUT OUT

FOLLOW THESE
STEPS

FIND A SITE
THAT INSPIRES
YOU

CUT OUT
LOCATION
TAG

MARK YOUR
SITE WITH
A PERSON
(PEOPLE).
SIGN(S).
OBJECT(S)

BUILD.
ALTER. USE.
AND DEFEND
YOUR SITE

HOW CAN YOU GET
TO KNOW/UNDERSTAND
YOUR SURROUNDINGS?

START AT POINT A.
A FAMILIAR LOCATION SUCH
AS YOUR HOUSE. OFFICE.
SCHOOL. GYM. RESTAURANT

DETERMINE POINT B.
A PLACE/SPACE/AREA YOU WANT TO
UNDERSTAND BETTER.

WALK/SKIP/RUN/DRIVE/JUMP/BIKE
FROM POINT A TO POINT B.

DOCUMENT THE DETAILS OF YOUR
JOURNEY. USING WORDS. PHOTOGRAPHS.
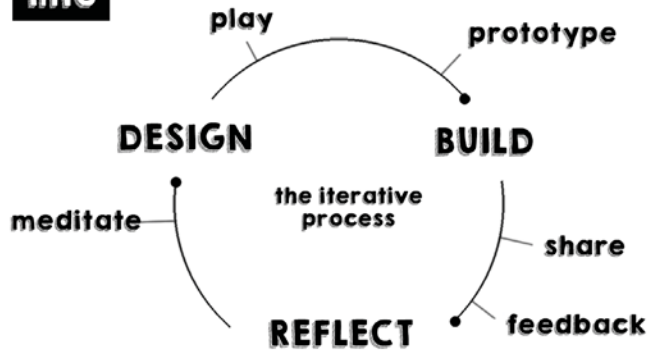VIDEOS.AUDIO RECORDINGS. MOMENTOS.

REFLECT ON THE DOCUMENTATION TO CREATE
A SPATIAL NARRATIVE OF YOUR JOURNEY

LOCATION. LOCATION. LOCATION

try

play

prototype

DESIGN　　　　**BUILD**

meditate　　the iterative process

share

REFLECT　　feedback

Try, Try, Try Again

DESIGN IS STRENGTHENED THROUGH THE ITERATIVE PROCESS. EACH ATTEMPT, WHEN REFLECTED UPON, PROVIDES LEARNING. A GREATER UNDERSTANDING OF THE LIMITS AND OPPORTUNITIES OF THE MATERIAL, CONTEXT, CONSTRUCTION METHODS, AND DESIGN CAN EMERGE. ONLY THROUGH THE ITERATIVE PROCESS CAN A SPATIAL PROBLEM BE ADEQUATELY SOLVED.

ITERATION 1

THE FIRST ITERATION MARKS THE INITIAL EXPLORATION OF MATERIALS AND THE CONTEXT. QUESTIONS, CONCERNS, NEGATIONS, AND AFFIRMATIONS OF PRECONCEIVED SPATIAL OUTCOMES ARE EVIDENT DURING THE FIRST BUILD. THROUGH MINDFUL REFLECTION AND CRITIQUE, AN APPROACH IS DEVELOPED FOR THE SECOND ITERATION.

ITERATION 2

FEAR NOT OF FAILURE.

ITERATION 3

THE SECOND ITERATION PROVIDES THE CHANCE TO RE-EVALUATE THE DESIGN INTENTION. THERE IS A OPTION OF CHANGING THE SITE, MATERIALS, AND OTHER DESIGN VARIABLES IN THIS STAGE. THE CONSTRUCTION METHODS ARE REFINED AND THE DESIGN VARIABLES ARE FURTHER REVEALED.

ITERATION 4

SUCCEEDING ITERATIONS FURTHER REFINE THE SPATIAL SOLUTION. ONGOING FEEDBACK FROM RELEVANT STAKEHOLDERS CAN DETERMINE THE SOCIO-ECONOMIC AND SPATIAL IMPLICATIONS OF THE DESIGN PROPOSAL. A DESIGN METHODOLOGY CAN BE CONSOLIDATED TO INFORM FUTURE SPATIAL SOLUTIONS. THROUGH ITERATIONS, AUTHENTIC UNDERSTANDING OF THE MATERIALS, CONTEXT, AND CONSTRUCTION WILL PREVAIL!

SCAFFOLDING LEARNING
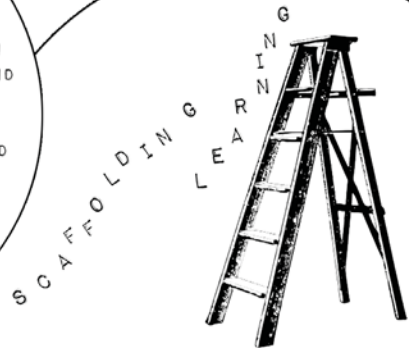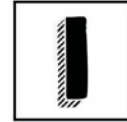
CHANGES:
THAT'S JUST THE WAY IT IS.
THINGS WILL NEVER BE THE SAME

but things changed

FIND/
DISCOVER/
OWN
A PUBLIC/
PRIVATE/
KNOWN/
UNKNOWN
SITE

1

THAT PROVOKES/
PLACATES/ YOU

TAKE A PICTURE

USING
NEW/
FOUND/
RECLAIMED
MATERIALS/
PEOPLE/
OBJECTS

CHANGE THE SITE

IN SOME WAY

2

TAKE A PICTURE

3

WITH
FRIENDS/
ENEMIES/
STRANGERS

SHARE

REPEAT...

4

HELLO!
(SMILE/SHAKE HANDS)

HOW ARE YOU DOING?
(I AM ASKING BECAUSE I CARE)

WHAT DO YOU THINK ABOUT...?
(WHAT DO YOU THINK?)

DO YOU HAVE ANY THOUGHTS OR SUGGESTIONS?
(WHAT WOULD YOU DO? I WOULD LIKE TO KNOW YOUR PERSPECTIVE)

WHAT DO YOU WANT TO HAPPEN?
(WHAT ARE YOUR NEEDS/WANTS/DESIRES?)

WHY?
(TELL ME MORE. I TRULY WANT TO KNOW.)

THANK YOU FOR SHARING.
(I'M HAPPY THAT I FEEL LIKE I UNDERSTAND YOU MORE)

I FEEL/THINK...
(THIS IS HOW WE CAN RELATE TO ONE ANOTHER)

WHAT ARE THE SIMILARITIES AND DIFFERENCES BETWEEN OUR
IDEAS/NEEDS/DESIRES?
(THIS HOW WE UNDERSTAND EACH OTHER)

WHAT CAN WE DO TOGETHER?
(LET'S COMBINE OUR FORCES!)

I AM EXCITED!
(WE CAN DO ANYTHING TOGETHER! HOORAY!)

THANK YOU.
(THANK YOU FOR RESPECTING
MY THOUGHTS)

come together

NOT A HOUSE

THE SOUDAN PROJECT. ORGANIZED BY THE SOCIETY OF HOMOLUDENS DURING THE SUMMER OF 2012, ASKED A GROUP DESIGNERS TO EXPLORE MULTIPLE SPATIAL REALITIES OF A HOUSE. WORKING AT A ONE-TO-ONE SCALE, THE HOUSE WAS TRANSFORMED. THIS IS WHAT SPACE COULD BE.
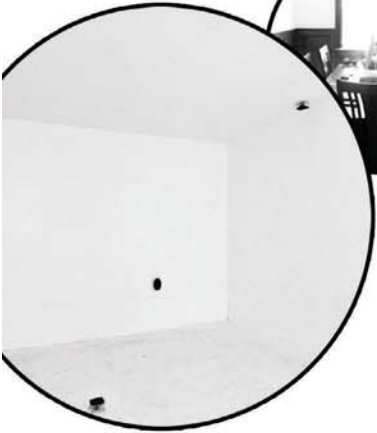
INTER
APRIL WONG

SOUDAN PROJECT
TALAYEH HAMIDYA

3 ROOMS HIGH
CO.LABS

ROOM OF WHISPERS
GELAREH SAADATPAJOUH
RAMIN YAMIN
SHAUN MOTSI

BEDROOM
SUE TANG

135

reflect

NOW

IMAGINE A SPACE WHERE YOU ARE WELCOMED. A SPACE THAT YOU CAN CHANGE AND THAT CAN CHANGE YOU.

DO YOU LIVE THERE? IF NO, WHY NOT?

DO YOU FEEL GOOD IN YOUR SURROUNDINGS? IF NO, WHY? IF YES, IS THERE ANYTHING YOU WOULD CHANGE?

IMAGINE

WHO, WHAT, WHERE, WHEN, HOW, AND WHY OF YOUR PAST, PRESENT, AND FUTURE SPACE!

CUT OUT

HOW-TO-MEDITATE

STEP 1: GET COMFORTABLE

STEP 2: HAVE SOMEONE READ A GUIDED MEDITATION/LISTEN TO THE AUDIO

STEP 3: RECORD THOUGHTS, FEELINGS, EMOTIONS

STEP 4: SHARE & REFLECT

FUTURE

IMAGINE THE SPACE OF YOUR DREAMS. A ROOM, A HOUSE, CITY, GALAXY.

WHAT IS HAPPENING THERE? HOW DOES LOOK? SOUND? TASTE? FEEL? SMELL?

WHY ARE YOU NOT LIVING IN THE SPACE OF YOUR DREAMS?

WHAT ACTIONABLE STEPS CAN YOU TAKE TO GET THERE?

WHAT DO YOU HAVE TO LOSE? YOU HAVE EVERYTHING TO GAIN.

SCRIPT:

TAKE A FEW MOMENTS TO BE STILL. BEGIN THIS SPATIAL AWARENESS PRACTICE BY FEELING INTO YOUR BODY AND MIND AND SIMPLY ALLOWING ANY WAVES OF THOUGHT, EMOTION, OR PHYSICAL SENSATION TO JUST BE. THERE IS NO NEED TO JUDGE, ANALYZE, OR FIGURE THINGS OUT. JUST ALLOW YOURSELF TO BE IN THE HERE AND NOW, AMIDST EVERYTHING THAT IS PRESENT IN THIS MOMENT. GENTLY CLOSE YOUR EYES. TAKE A MOMENT TO IMAGINE THE DISTANCE BETWEEN YOUR EARS? CAN YOU IMAGINE THE DISTANCE FROM YOUR RIGHT EAR TO YOUR NOSE? HOW ABOUT THE DISTANCE FROM YOUR LEFT EAR TO YOUR NOSE? WHAT IS THE DISTANCE FROM YOUR NOSE TO THE MIDDLE OF YOUR STOMACH? HOW MUCH GREATER IS THE DISTANCE BETWEEN YOUR EARS COMPARED TO THE DISTANCE FROM YOUR NOSE TO THE MIDDLE OF YOUR STOMACH? IS TWICE AS FAR? 3 OR 4 TIMES AS FAR? IMAGINE THE SPACE BETWEEN YOUR NOSTRILS AND TAKE A DEEP BREATH. CAN YOU IMAGINE ALL THE POINTS ON YOUR CHEST? NOTICE AND ACKNOWLEDGE ANY SENSATIONS AND INTERNAL EXPERIENCES AND BRING YOUR AWARENESS BACK TO THE POINTS OF YOUR CHEST. CAN YOU IMAGINE CONNECTING THE BOUNDARIES OF YOUR STOMACH AND CREATING A SURFACE? IMAGINE THE AREA OF THE SURFACE. IN YOUR MIND, DRAW THE BOUNDARY OF YOUR CHEST. IMAGINE THE FILLING UP THE BOUNDARY OF YOUR CHEST WITH ENERGY. NOW IMAGINE BOUNDARY OF YOUR SKIN. CAN YOU FILL UP THE BOUNDARY OF YOUR WHOLE BODY WITH ENERGY? FROM THE TOP OF YOUR HEAD TO THE TIP OF YOUR TOES. WHAT IS THE VOLUME OF ENERGY IN YOUR CHEST COMPARED TO THE VOLUME OF ENERGY IN YOUR BODY? IS THE VOLUME OF YOUR STOMACH 1/10TH AS MUCH AND THE VOLUME OF YOUR BODY? 1/8TH AS MUCH? TAKE A MOMENT TO REFLECT.

GENTLY OPEN YOUR EYES. BECOME AWARE OF THE VISUAL SENSATION OF PHYSICAL SPACE. STARING STRAIGHT AHEAD, ALLOW YOUR EYES TO FOCUS ON A POINT THAT IS COMFORTABLE. WITHOUT MOVING YOUR EYES, BECOME AWARE OF WHAT IS IN YOUR PERIPHERY. ALLOW YOUR BACKGROUND VISION TO COME TO THE FRONT. BRING ATTENTION TO THE EXPANSE OF YOUR VISION. HOW FAR CAN YOU SENSE? HOW CLOSE CAN YOU SENSE? BECOME AWARE OF WHAT IS CLOSEST TO YOU. WHAT IS THE DISTANCE OF YOUR FEET TO THE GROUND? IS IT 1MM? 1MICRO MM? WHAT IS THE DISTANCE BETWEEN YOU AND ANOTHER PERSON OR OBJECT? FOCUS YOUR AWARENESS ON ANY SMELLS OR SENSATIONS OF HEAT YOU MAY EXPERIENCE. IMAGINE A CIRCLE OF ENERGY RADIATING 50CM AROUND YOU. BRING ATTENTION AND AWARENESS TO WHAT IS IN YOUR RADIUS. WHAT CAN YOU SEE, SMELL, TASTE, HEAR AND TOUCH? WHAT FEELINGS, THOUGHTS AND EMOTIONS WOULD ARISE IF YOU INVITED SOMEONE IN YOUR 50CM BOUNDARY? NOW IMAGINE A 1M CIRCLE BOUNDARY RADIATING AROUND YOU. WHAT IS PRESENT IN YOUR RADIUS? ONCE AGAIN, BRING AWARENESS TO YOUR SENSES. NOTICE AND ACKNOWLEDGE ANY SENSATIONS, THOUGHTS AND EMOTIONS AND LET THEM BE. CAN YOU IMAGINE EXPANDING YOUR CIRCLE BOUNDARY TO 5M? 10M? HOW ABOUT 20M? WHAT IS THE LARGEST BOUNDARY YOU CAN IMAGINE AROUND YOU? WHAT SENSES AND FEELINGS ARE YOU EXPERIENCING WITHIN YOUR BOUNDARY? HOW MUCH OR LITTLE CAN YOU SEE, SMELL, TASTE, FEEL, AND HEAR? OPEN YOUR SENSES. TAKE A FEW MOMENTS TO CONNECT WITH YOUR BREATH AND MINDFULLY REFLECT ON WHAT YOU JUST OBSERVED. COMPASSIONATELY ACKNOWLEDGE, VALIDATE, AND INTEGRATE EVERYTHING YOU LEARNED FROM THIS SPATIAL EXPLORATION. TAKE A MOMENT TO CONGRATULATE YOURSELF FOR TAKING THIS TIME TO EXPAND YOUR SPATIAL AWARENESS.
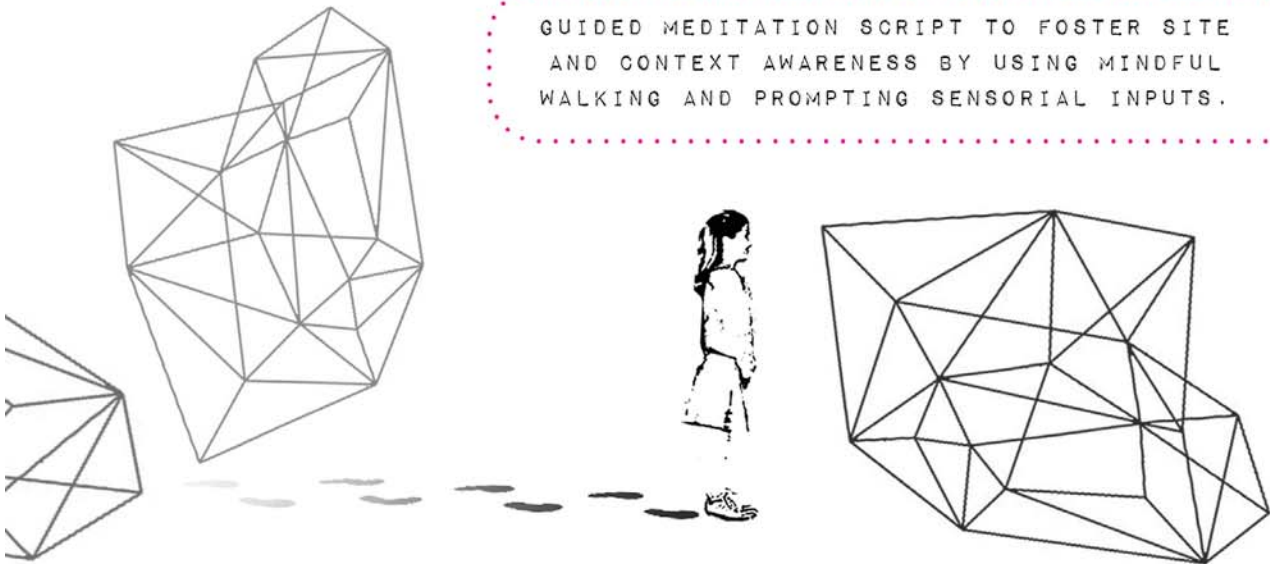
GUIDED MEDITATION: ONE

GUIDED MEDITATION: TWO

SCRIPT:

TAKE A FEW MOMENTS TO BE STILL. BEGIN THIS MINDFULNESS PRACTICE BY FEELING INTO YOUR BODY AND MIND AND SIMPLY ALLOWING ANY WAVES OF THOUGHT, EMOTION, OR PHYSICAL SENSATION TO JUST BE. JUST ALLOW YOURSELF TO BE IN THE HERE AND NOW, AMIDST EVERYTHING THAT IS PRESENT IN THIS MOMENT. BEGIN BY STANDING STILL. FEEL THE CONNECTION OF YOUR FEET TO THE GROUND. CAN YOU IMAGINE BECOMING ACUTELY AWARE OF YOU SURROUNDINGS? OPEN YOUR EYES. FOCUS ON THE CONTEXT AS IF YOU HAVE NEVER SEEN ANYTHING LIKE IT BEFORE. IMAGINE THAT YOU HAVE JUST LANDED IN ANOTHER WORLD. SCAN YOUR EYES TO WHAT IS IN FRONT OF YOU. NOTICE THE COLOUR, SHAPE, SIZE AND DISTANCE OF THE ELEMENTS AND OBJECTS THAT COMPOSE YOUR SURROUNDINGS. DRAW ATTENTION TO YOUR EARS. LISTEN ATTENTIVELY TO ANY SOUNDS. ARE THE SOUNDS NEAR OR FAR? ARE THE SOUNDS RISING OR FALLING? WHAT AND WHO ARE MAKING THE NOISES? SLOWLY OPEN YOUR MOUTH AND LOOSEN YOUR TONGUE. BECOME AWARE OF ANY TASTES YOU MAY EXPERIENCE. IS THE SPACE SALTY? SWEET? BITTER? NEUTRAL? SLOWLY CLOSE YOUR MOUTH, ABSORBING THE TASTE OF THE SPACE. TAKE A MOMENT TO INHALE DEEPLY THROUGH YOUR NOSE. SMELL THE FRAGRANCES AND ODOURS. ARE THE SMELLS SUBTLE OR STRONG? RETURN YOUR ATTENTION TO YOUR SIGHT. WHAT TEXTURES YOU SEE? WHAT IS THE WEIGHT OF THEM? IF POSSIBLE, GENTLY REACH OUT TO FEEL THE TEXTURES OF YOUR ENVIRONMENT. IS IT SOFT OR HARD? HEAVY OR LIGHT? BUMPY OR SMOOTH? TAKE A MOMENT TO REGISTER THE TACTILE SENSATIONS. NOW EXPLORE THE SPACE WITH ALL YOUR SENSE. CAN YOU CLEARLY PERCEIVE THEIR CHARACTERISTICS? BE ENTIRELY PRESENT IN WHAT YOU ARE DOING. NOTICE AND ACKNOWLEDGE ANY THOUGHTS AND EMOTIONS AND LET THEM BE. BRING YOUR AWARENESS BACK TO YOUR SURROUNDINGS.

WHEN YOU ARE READY, SLOWLY START TO WALK AROUND THE SITE WITH AWARENESS. WITH EACH STEP, MINDFULLY FOCUS ON HOW THE OBJECTS AND ELEMENTS CHANGE OR REMAIN THE SAME. ALLOW YOUR EYES, EARS, NOSE, MOUTH, AND BODY TO EXPLORE THE SPACE. CAN YOU IMAGINE ATTENDING TO THE DETAILS AND GESTURES OF YOUR SURROUNDINGS WITH AWARENESS? CONTINUE WALKING AROUND THE SPACE UNTIL YOU FEEL LIKE YOU HAVE EXPLORED IT TO YOUR DESIRE. TAKE A FEW MOMENTS TO CONNECT WITH YOUR BREATH AND MINDFULLY REFLECT ON WHAT YOU JUST OBSERVED. COMPASSIONATELY ACKNOWLEDGE, VALIDATE, AND INTEGRATE EVERYTHING YOU LEARNED FROM THIS EXPLORATION. WHEN YOU ARE READY, RETURN TO A SEATED POSITION. TAKE A MOMENT TO CONGRATULATE YOURSELF FOR TAKING THIS TIME TO EXPERIENCE YOUR SURROUNDINGS MINDFULLY.

GUIDED MEDITATION SCRIPT TO FOSTER SITE AND CONTEXT AWARENESS BY USING MINDFUL WALKING AND PROMPTING SENSORIAL INPUTS.
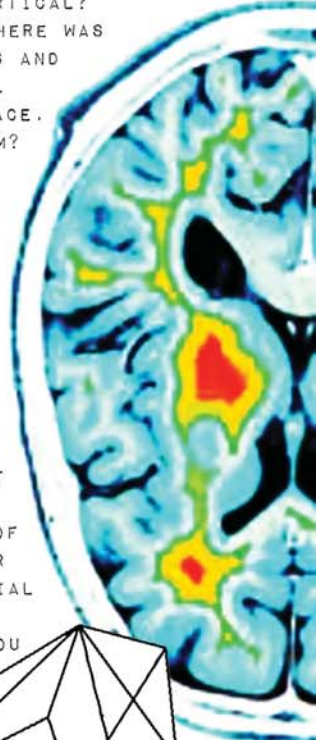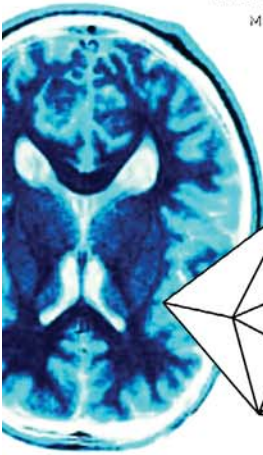
GUIDED MEDITATION: THREE

SCRIPT:

TAKE A FEW MOMENTS TO BE STILL. BEGIN THIS SPATIAL AWARENESS PRACTICE BY FEELING INTO YOUR BODY AND MIND. ALLOW ANY WAVES OF THOUGHT, EMOTION, OR PHYSICAL SENSATION TO JUST BE. THERE IS NO NEED TO JUDGE, ANALYZE, OR FIGURE THINGS OUT. YOU CAN BE YOURSELF IN THE HERE AND NOW AMIDST EVERYTHING THAT IS PRESENT IN THIS MOMENT.

CAN YOU REMEMBER A SPACE THAT YOU THAT YOU FELT TRULY MOVED BY? A SPACE THAT STIRS UP EMOTIONS, FEELINGS, THOUGHTS, AND MEMORIES? MAYBE YOU WERE IN A HOUSE, MUSEUM, POFFICE, OR PLAYGROUND? HOW WERE YOU MOVED? LET THE SENSATIONS OF THE MEMORY STEEP THROUGH YOU AND BRING AWARENESS TO YOUR FEELINGS IN YOUR SPACE. WHERE YOU HAPPY? SAD? OVERWHELMED? CALM? WHAT WERE YOU DOING IN YOUR SPACE? CAN YOU FEEL THE MEMORY OF YOUR SPACE IN YOUR BODY? HOW DID YOUR BODY MOVE? FAST? SLOW? VERTICAL? HORIZONTAL? MOVE AROUND THE MEMORY OF YOUR SPACE WITH INTENTION. WHERE WAS THE BOUNDARY? CAN YOU IMAGINE ITS DEPTH? BRING AWARENESS TO OBJECTS AND PEOPLE IN YOUR SPACE. WERE THERE MANY? A FEW? OR NONE? DOES IT FEEL CROWDED? OR EMPTY? IF THERE WERE THE PEOPLE AND OBJECTS IN YOUR SPACE, WERE THEY CLOSE TO YOU? OR FAR AWAY? HOW DID YOU INTERACT WITH THEM? DID YOU FEEL POSITIVE OR NEGATIVE WITH THE INTERACTIONS? TAKE A MOMENT TO NOTICE AND ACKNOWLEDGE ANY THOUGHTS AND EMOTIONS YOU MAY BE EXPERIENCING.

BRING AWARENESS TO THE MEMORY OF YOUR SENSES IN THE SPACE. WHAT DID THE SPACE LOOK, FEEL, SMELL, HEAR AND TASTE LIKE? WHAT WERE THE TEXTURES AND TACTILE QUALITIES OF THE SPACE? CAN YOU IMAGINE THE SOUNDS OF YOUR SPATIAL MEMORY? WERE THE SOUNDS LOUD OR WERE THEY WHISPERS? CONSIDER THE SMELLS OF THE SPACE. WERE THEY PUNGENT OR SUBTLE? BRING ATTENTION TO THE ATMOSPHERIC QUALITIES THAT COMPOSED THE SPACE. WAS THE SPACE IN YOUR MEMORY WARM OR COLD? BRIGHT OR DARK? MINIATURE OR IMMENSE? TAKE A FEW MOMENTS TO REVISIT THE FEELINGS AND EMOTIONS OF THE SPACE. CAN YOU IMAGINE CREATING A NEW SPACE THAT INCORPORATES SIMILAR THOUGHTS, FEELINGS AND SENSES OF THE SPACE THAT MOVED YOU? DO YOU WANT TO CREATE THIS SPACE? WHY? OR WHY NOT? WOULD YOU CHANGE YOUR SPATIAL MEMORY? YOU HAVE THE POTENTIAL FOR ACTION. YOU CAN CREATE THIS NEW SPACE. OR YOU CAN NOT. TAKE A MOMENT TO CONNECT WITH YOUR BREATH AND MINDFULLY REFLECT ON WHAT YOU JUST OBSERVED. COMPASSIONATELY ACKNOWLEDGE, AND VALIDATE EVERYTHING YOU LEARNED FROM EXPLORING A SPATIAL MEMORY. CONGRATULATE YOURSELF FOR TAKING THIS TIME TO EXPERIENCE YOUR MEMORY OF A MEANINGFUL SPACE MINDFULLY.

BRAIN ACTIVITY AFTER MEDITATION

BRAIN ACTIVITY BEFORE MEDITATION
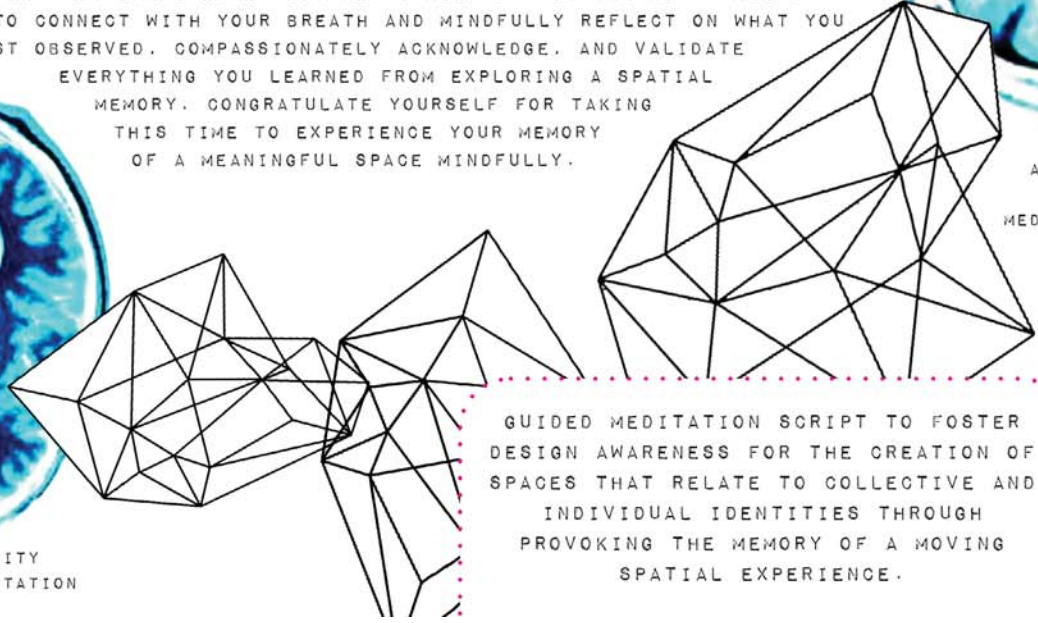
GUIDED MEDITATION SCRIPT TO FOSTER DESIGN AWARENESS FOR THE CREATION OF SPACES THAT RELATE TO COLLECTIVE AND INDIVIDUAL IDENTITIES THROUGH PROVOKING THE MEMORY OF A MOVING SPATIAL EXPERIENCE.

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workshop two

OVER THE COURSE OF 2 DAYS, 11 INDIVIDUALS WORKED TOGETHER TO BUILD AND TEST SPATIAL INTERVENTIONS IN A LOCAL PARK. MINIMAL GUIDANCE WAS GIVEN ALONG WITH AN ASSORTMENT OF MATERIALS TO TAKE OVER THE SITE. THROUGH EXPERIMENTING WITH TEXTILES, TREES, ROPE, AND FOUND OBJECTS, INTERESTING AND DIVERSE WORK EMERGED. BUILDING SESSIONS TOOK PLACE INBETWEEN EATING, TALKING, AND STRETCHING ACTIVITES. THE INDIVIDUALS BUILT SEVERAL ITERATIONS WHICH REFINED THE SPATIAL VISIONS AND NARRATIVES. THROUGH ACTION, THEY CLAIMED AND CREATED SPACE!
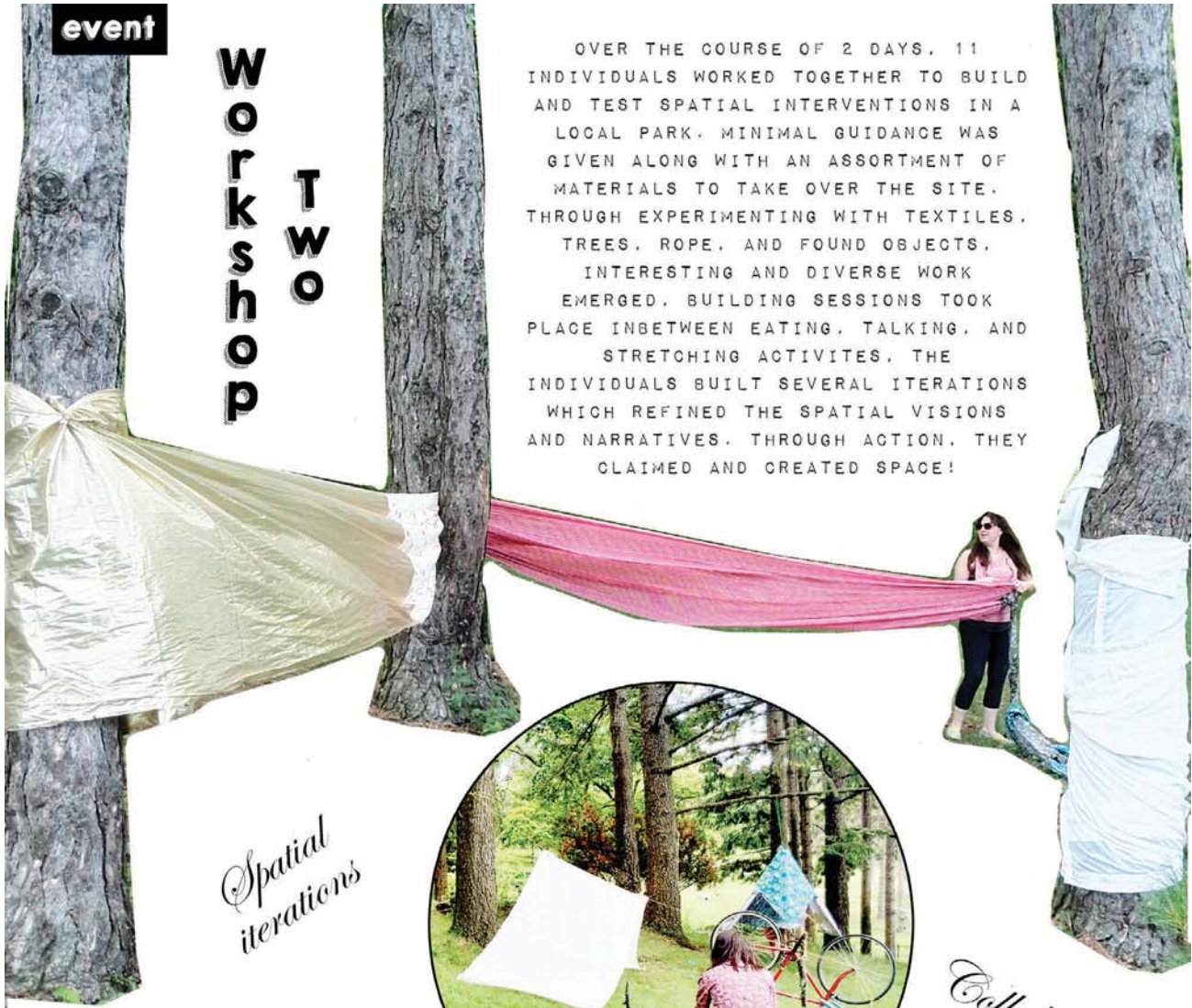
Spatial iterations

Collaboration!

"Each person interprets space differently and brings different meanings and needs to their environments."
-comment from participant

IDEAS!

EVERYONE HAS IDEAS. AN EXERCISE CONDUCTED WITH PEER TEACHER CANDIDATES AT OISE REVEALS THE MANY INTERPRETATIONS OF AN IDEAL CLASSROOM. WHAT ARE YOUR SPATIAL IDEAS?

event

try

BLANK SPACE.

A SPACE TO WRITE/DRAW/SCRIBBLE/IMAGINE
YOUR SPATIAL THOUGHTS/FEELINGS/DREAMS

try

Conflict

V.1

TAKE SPACE THAT IS
NOT YOURS.

V.2

FIND A FRIEND
CHOOSE A SITE
ASK THEM WHAT THEY WOULD DO
DO THE OPPOSITE
REFLECT

REVEAL
SPATIAL
CONFLICTS.

CONFLICT IS
THE GENERATIVE
FORCE FOR
SPATIAL
INQUIRY.

V.3

USE A SPACE IN A WAY
THAT IS WAS NOT
INTENDED.

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WOULDN'T IT BE NICE IF YOU COULD
SHARE YOUR SPATIAL KNOWLEDGE AND
SKILLS WHILE HAVING LOTS OF FUN?
WELL, NOW YOU CAN!

WHAT WE RUN? THE WORLD-SHOPS!

HERE ARE THE STEPS TO RUNNING
YOUR VERY OWN SPATIAL DECISION
MAKING WORKSHOPS!

ARCHITECTURAL
LANGUAGE,
MATERIAL INQUIRY,
CONSTRUCTION
TECHNIQUE,
PLAY?

BEFORE THE WORKSHOP

1. DETERMINE WHAT SPATIAL SKILL/KNOWLEDGE
YOU WANT TO SHARE

2. FIND SITE

3. COLLECT BUILDING MATERIALS

4. LOOK AT PRECEDENT

5. CREATE 'LESSON' PLAN

6. PRINT/HAND OUT INVITE

7. PREP SITE AND MATERIALS

PARK/
ALLEY/
SIDEWALK
ROOM/
BUILDING

SAMPLE SITE

DURING THE WORKSHOP

8. HOST WORKSHOP WITH LESSON PLAN

9. HAVE FUN!

TEXTILES,
LUMBER,
PLASTIC,
PIPES, ROPE

SAMPLE MATERIALS

AFTER THE WORKSHOP

10. SHARE WORK

INTRODUCTION
COMMUNITY BUILDING
ACTIVITY
BUILD
EAT
BUILD
STRETCH
BUILD
DISCUSS
END

SAMPLE LESSON PLAN

TWEET, INSTAGRAM, FACEBOOK,
EMAIL, PHONE, WRITE, TEXT

SAMPLE INVITATION →
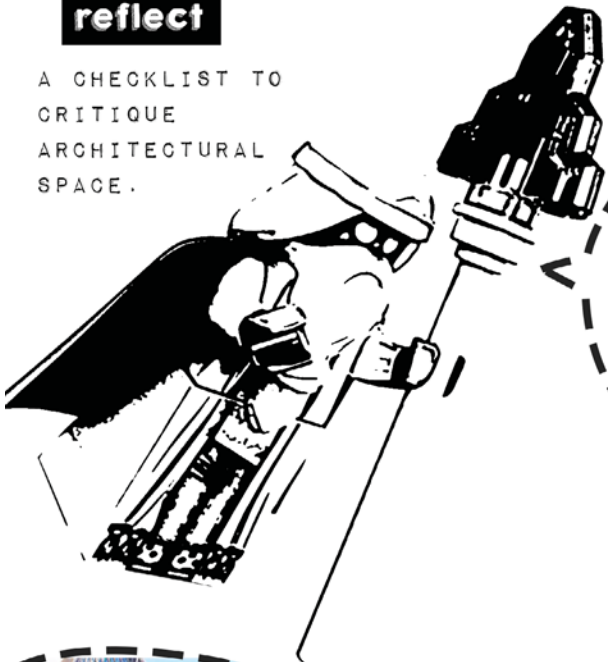
ADD DATE, TIME, LOCATION &
CONTACT INFORMATION

Build
Play
Explore

1 to 1

Spatial Decision
Making Workshops
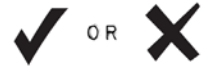
reflect

A CHECKLIST TO
CRITIQUE
ARCHITECTURAL
SPACE.

VITRUIS SAYS:

FIRMATIS
UTILITAS
VENUSTATIS

GOOD SPACES MUST BE
ROBUST, FUNCTIONAL, AND
DELIGHTFUL!

CIRCLE ONE

✔ OR ✗

YAY! OR NAY.

DOES IT MEET YOUR NEEDS?

DO YOU LIKE IT?

IS IT ENGAGING OR INSPIRING?

DOES IT MAKE YOU HAPPY?

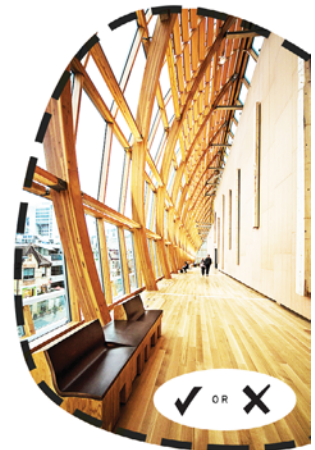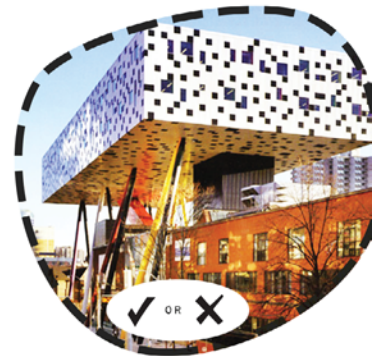IS IT SAFE?

IS IT LOW IN COST?

IS IT SUSTAINABLE?

DO YOU HAVE ACCESS TO IT?

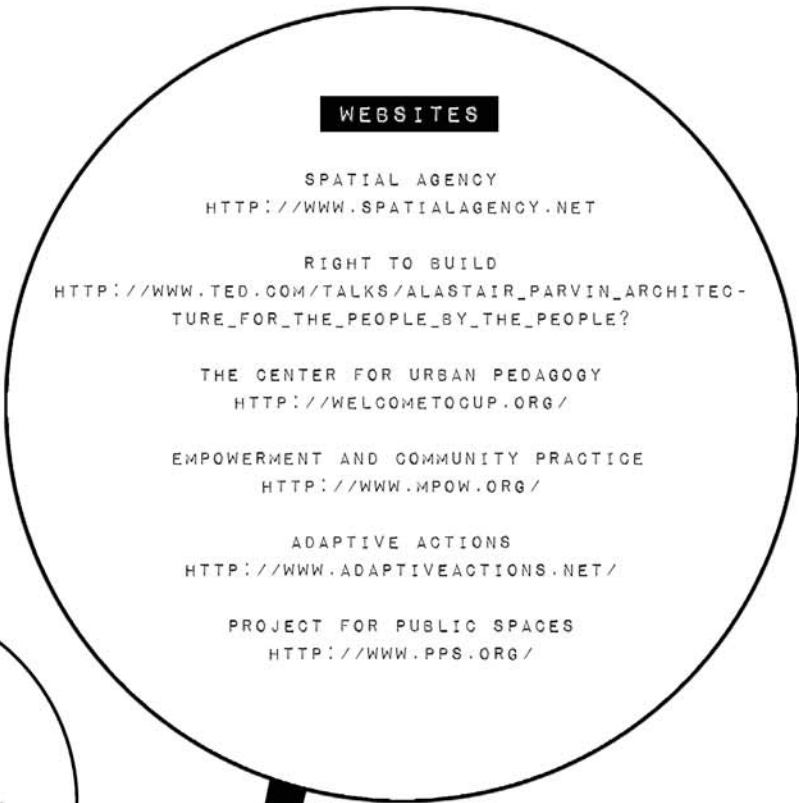CAN YOU DO MANY THINGS IN IT?

IS IT DURABLE?

DOES IT REFLECT YOUR VALUES?

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NOT THE END

COLLECTION OF REFERENCES AND RESOURCES.

WEBSITES

SPATIAL AGENCY
HTTP://WWW.SPATIALAGENCY.NET

RIGHT TO BUILD
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PEOPLE

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INFLATOCOOKBOOK
HIDDEN CURRICULUM
A GUIDE TO SQUATTING
MOMA: SMALL SCALE.
BIG CHANGE
THE HEIDELBERG
PROJECT

CONTACT YOUR LOCAL MUNICIPALITY TO SEE WHAT YOU CAN DO!

info

END.

BID YOU GOOD LUCK AND HIGH HOPES ON YOUR
SPATIAL EMPOWERMENT JOURNEY.

BE THE CHANGE YOU WANT
TO SEE IN THE WORLD.

Reflections on the Guidebook:

Creating the guidebook became an aesthetic exercise to effectively communicate architectural knowledge, skills, and the empowerment process. The each page was conceived as a nugget of spatial empowerment instruction. A page could be read on its own or as a larger narrative. Spatial meditation scripts, activities to promote spatial interventions, and how to host workshops are examples that directly relate to the tactics outlined in the spatial empowerment strategy, figure 3.12. Other sections indirectly connect to the spatial empowerment approach. The News, which is based on Toronto economic and property data, raises the question of affordability of property ownership. By increasing awareness to local spatial issues, critical thinking about the stakeholders of spatial production emerges.

The aesthetics and language used in the guide is playful and tongue-in-cheek. Collage was utilized as a visual tactic as it enables a multitude of references in one image to embed additional meaning. For example, the cover page to the guidebook utilizes the iconic feminist empowerment image along with a figure augmenting a planar surface, reminiscent of Superstudio's outer worldly utopian graphics. Text and titles were also selected to layer implied messages. The guidebook title, 1-to-1, refers to a one to one building scale, lateral power relationships, and the unambiguity of the injective function. Several of the page headings and graphics are derived from pop culture such as song titles, public figures, and common phrases, to connect and relate to the reader.

By reflecting and communicating my own spatial empowering experiences, such as the Soudan Project, documenting the space in my bathroom, and OISE literacy classroom ideas, I participated in personal empowerment. Although the effectiveness of the guidebook has yet to be determined on a larger scale, it is a starting point to captures the tactics outlined in the spatial empowerment strategy.

6.0   Conclusion

I learned how changing existing space can completely alter the feeling and atmosphere of a space. I am excited to take this new spatial understanding back to my living space. I'm also interested in how I can use and change existing architecture to co-opt and "take back" space.

- Written comments from Workshop 2 participants on the post-workshop questionnaire

Discussion

Through research, workshops and writings presented in this thesis, the initial intent of the work was achieved. Spatial empowerment was defined and the application of its strategy was tested in a series of workshops. A guidebook, *1 to 1: A Guide to Spatial Empowerment* was created to reflect the empowerment strategy. Spatial empowerment is defined as the capacity to create and alter one's micro-environment. The individual psychological process of becoming spatially empowered can be assessed along a spectrum. The proposed spatial empowerment approach was formulated by analyzing related precedents, literature, and the outcome of the hosted workshops. The analysis was completed by using an assessment rubric adapted from participatory, educational, and empowerment literature. The workshops validated and informed the proposed spatial empowerment approach. The workshops were evaluated through documentation, such as written questionnaires, photographs, and student illustrations. The data was assessed against the spatial empowerment rubric.

The research concludes that spatial empowerment is a complex multi-dimensional process that resides in architectural and educational disciplines. Spatial empowerment of an individual can be achieved in three operational domains: **capacity building**, **inclusive practice**, and **spatial action**. Capacity building enables conscious and informed spatial decisions to occur. Inquiry-based experiential learning, one-to-one iterative multi-sensory building activities, and emancipatory pedagogy, are several methods that

develop spatial skills and knowledge. Critical thinking is fostered through provocation, reflection, critique, meditation and tapping into creativity. Inclusive practice can be nurtured through participation, discourse and community building activities. Opportunities to implement spatial interventions in the micro-environment and access to resources permits spatial actions to occur.

In the spatial empowerment process, architects act as facilitators and non-architects bring their own interests, knowledge, and spatial meaning into the discourse. Learning and teaching together, as intellectual equals, we can dissolve the hierarchy of spatial production and liberate our own spatial destiny.

Directions for future research

The natural step for future research is to persistently implement, monitor, and assess the proposed spatial empowerment strategy. *1-to-1: A Spatial Empowerment Guidebook* or a similar tool can be distributed to validate or disprove the approach. A network of implementation and initiatives should be coordinated at various organizational levels to ensure sustained change. The definition of spatial empowerment should be expanded to encompass economic and political legitimacy and within communities and organizations. Integrating Alaistair Parvin's approach of self-provided housing could confront the economics of acquiring one's own home by lowering the economic threshold for participation.[94]

94. Parvin, *A Right to Build,* 120.

Moving forward, it is important to reinforce and maintain an interest in spatial empowerment. Capacity building tactics and tools could be integrated into school curriculum, teaching programs, technology and social media. Community events could host spatial interventions and create forums for discourse. Additionaly, investigating open source design movements could create new opportunities to assist the spatial empowerment process. For example, Wikihouse, an open source design and fabrication tool for housing, can allow individuals to become involved in vernacular spatial production. The research and findings presented in the thesis is a starting point for future spatial empowerment discourse.

Fig. 6.1 Students, with building blocks in hand, are creating their own spatial reality in Workshop 1. Plastic pipe 'window' with drapes is shown.

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