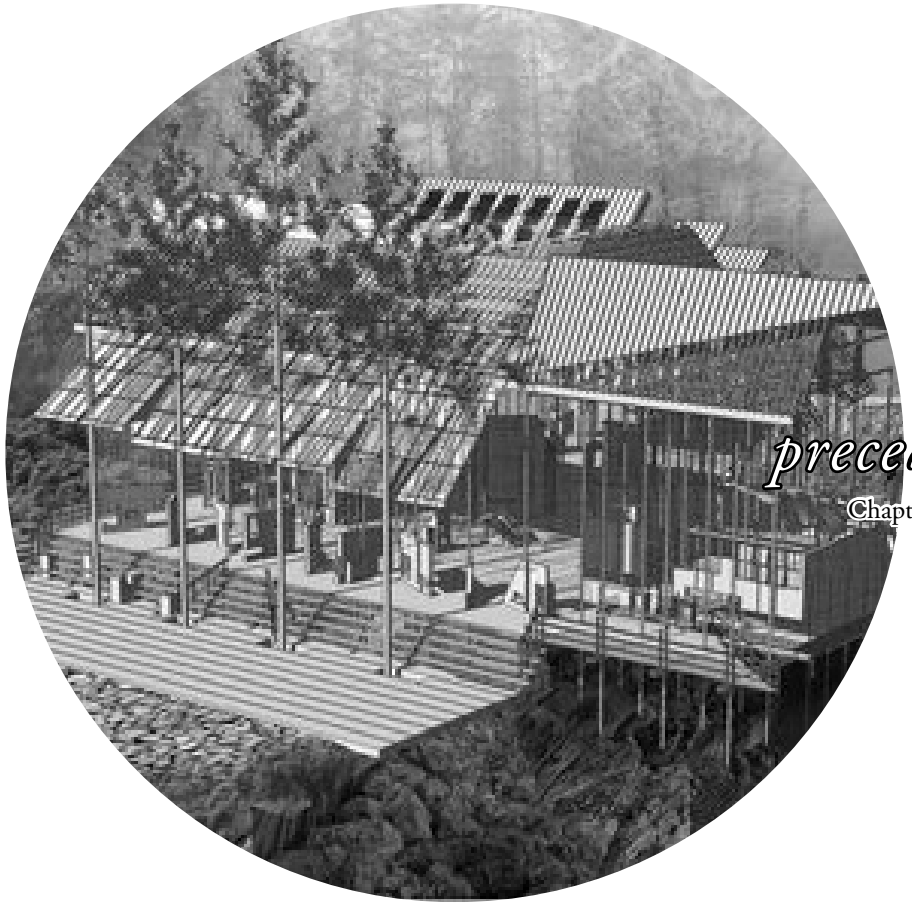

# *precedent*

Chapter 5

Fig 5.1: Design development sketches. [Author, 2016]

"It is through others that we develop into ourselves"
(Vygotsky, 1981: 161)

## 5.1 Introduction

The following precedents were selected based on programmatic, design and character of the site. For each precedent the relevance to the project is discussed as well as each of their biophilic potential.

Fig 5.1 Drawings showing how activities of the children give meaning to the ambiguity of the spaces (presidentsmedals.com, 2015)

# 5.2 Programmatic Precedent : SFU UniverCity Childcare

Architects: HCMA
Location: Burnaby, BC, Canada
GroupArea: 530.0 sqm
Project: Year 2012
Photographs: Martin Tessler

The UniverCity Childcare is located in Simon Fraser University's high-density, sustainable community of UniverCity. The facility accommodates 50 children aged 3-5 years of age. The building is divided into two centres that accommodates 25 children each. The building also has shared "community" space used for social interaction between the two groups of children. In addition to 50 children and the 9 staff of the SFU Childcare society, academic research is accommodated for a live-in lab to observe early childhood education, first-hand (Arch Daily, 2013).

The building integrates a next-level green building framework together with the renowned Reggio Emilia early childhood pedagogy. As mentioned in Chapter 4, the Reggio approach is an educational programming model that is based on a deep respect for children's curiosity, their potential and their right to communicate through their "hundred languages". In addition because the environment is the "third teacher, curiosity and enticement are infused into the surfaces, materials and light quality of the preschool centres. The facility becomes a laboratory in itself for child-directed learning. Unique opportunities are provided throughout the facility to explore natural elements such as water, light, air, gravity, vegetation and seasonal changes (Arch Daily, 2013).

The building was built with almost no impact on existing natural ecosystems. Rainwater is collected on site to be used within the building. Any additional runoff will be filtrated on site and diverted to the community's rainwater treatment garden. The landscape plants required no irrigation after the initial establishment period. The building is net-zero energy, net-zero water with locally sourced materials
(Arch Daily, 2013).

Biophilic Potential

The potential of the project to connect the children to nature through their biophilic affections is prominent in the manner in which various biophilic principles have been applied. Curiosity and enticement which is applied through the use of materials and surfaces is a attribute of biophilic design that forms part of the element of evolved human-nature relationships. Place-based relationships are applied here due to the ecological connection to place through the use of natural elements to become "Third Teachers". Light and Space is an element of biophilic design which is applied throughout the classroom spaces. This is made up of attributes such as diffused light and inside-outside spaces which the school's design incorporates.

Relevance

It is hard to argue how this project is not relevant to the dissertation as it incorporates a similar programmatic resolution, where natural elements are used as "third teachers" to the children's reggio-inspired early childhood pedagogy. It also placed ecological design as a priority at design stage, where multiple sustainable design applications are integrated within the building, perhaps forming additional "third teachers" in their function. Although biophilic theories weren't purposefully applied, many attributes are present throughout the building as a result of the Reggio-approach together with sustainable design. The site is much smaller than the chosen site of the dissertation, however, the principles remains the same of a community-based environment which the dissertation aims to achieve through appropriate programmatic solutions.

Fig 5.2 view of classroom spaces (Arch Daily, 2013)

Fig 5.3 view of pedagogic outdoor spaces (Arch Daily, 2013)

Fig 5.4 Rope nests forming tree-like structures (Arch Daily, 2013)


Fig 5.5 Mezzanine level floor plan (Arch Daily, 2013)

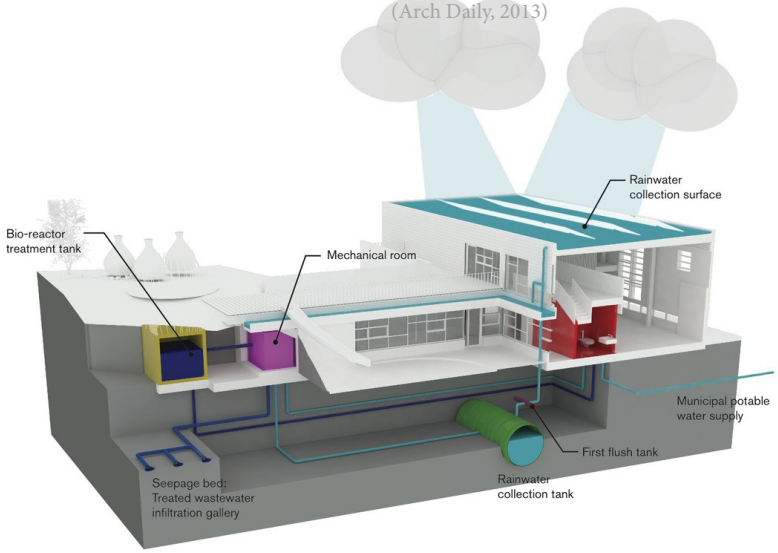


Fig 5.6 The sustainable energy and water system in the building (Arch Daily, 2013)

# 5.3 Design Precedent: Space As The Third Teacher

Student: Boon Yik Chung
School: The Bartlett School Of Architecture (UCL) London UK
Tutor:s Mr Rhys Cannon, Colin Herperger
Year: 2015

This project took a philosophical and theoretical approach to learning, in search of an alternative classroom typology for a Montessori school in Florida. Montessori is a similar approach to Reggio emilia whereby children learn through the environment, through auto-didactic toys and individual discovery. (The Presidents Medals, 2015)

Due to the independence children have in their learning process, the toys used in Montessori schools are minimalist and abstracted objects on which the child will place identity encouraging open-ended play. The research on the toys gave rise to the problems of contemporary classroom typologies which create sharp and unhelpful barriers between spaces, play and learning. According to the founder of the Montessori approach, 'Play is the work of a child' (The Presidents Medals, 2015)

This proposal permeates the architecture with the same notion of ambivalence and vagueness found in the toys. The classroom becomes a loosely defined space created by a collection of 'architectural suggestions' surrounding a core in which a learning group is based. Spaces are to be interpreted and negotiated; they are incomplete without the presence of the users. (The Presidents Medals, 2015)

' Children develop through interactions, first with lives - parents and teachers, then with their peers and ultimately with the environment,' (The Presidents Medals, 2015)

'Space is the third teacher.'
-Loris Malaguzzi

Biophilic Potential

In the same way the SFU Childcare Centre sparked curiosity and enticement through the nature of the spaces themselves, so are these classroom designed in this project, sparks curiosity and enticement through designed ambiguous spaces, designed to be interpreted and given meaning only once the child is present. The design of the building is culturally and ecologically rooted to place which forms part of the biophilic design element of human-nature evolved relationships. Analysing the classroom design , one can see light and space has become a prominent biophilic design feature with inside-outside spaces and spatial harmony becoming evident.

Relevance

This precedent is relevant to primarily the design of the project with regards to the classrooms where each classroom contains a "core" used for focused learning and where the rest of the classroom is given meaning by the activities that happen within them. Harsh barriers between space inhibiting children's freedom when it comes to learning from their environment have been limited and spatial freedom and freedom of Vermont are key factors in the dissertations classroom design approach. In terms of site, the classrooms are also placed alongside a body of water, creating opportunities for water to become a pedagogical element in the environment.

Fig 5.7 Aerial view of classrooms, also alongside a river (presidentsmedals.com, 2015)

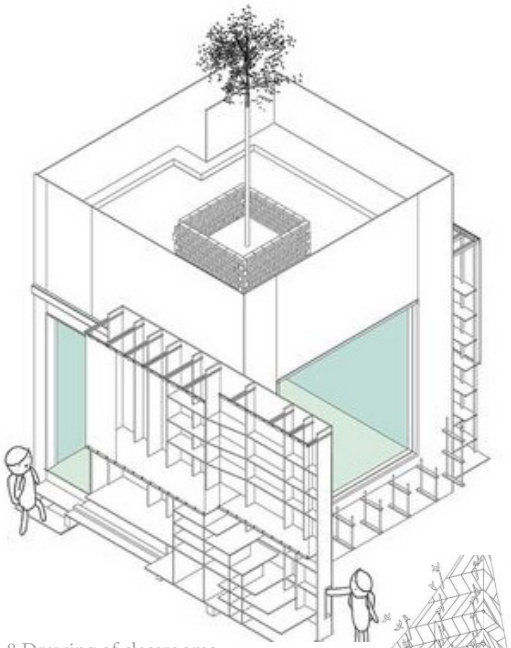

Fig 5.8 Drawing of classrooms cores, with usable shelving systems (presidentsmedals.com, 2015)

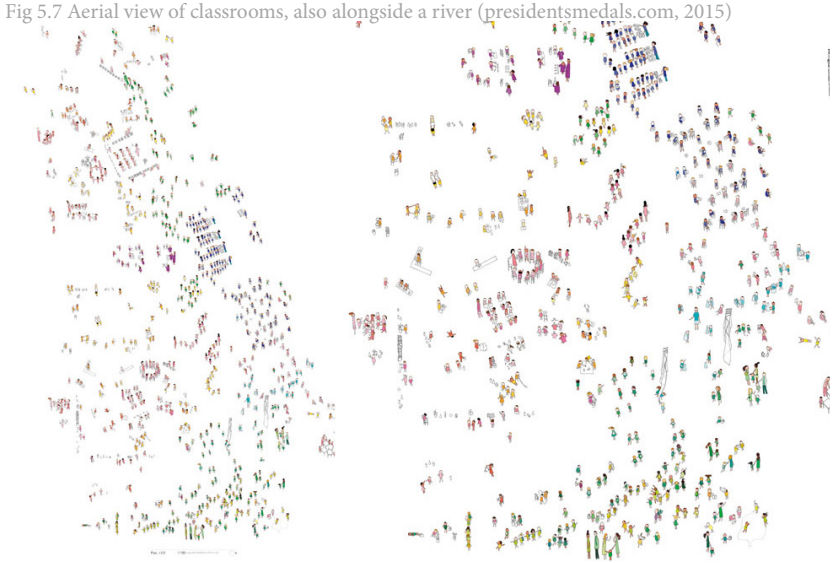

Fig 5.9 Drawings showing how activities of the children give meaning to the ambiguity of the spaces (presidentsmedals.com, 2015)

Fig 5.10 Classroom plan, showing cores, and the various child learning activities taking place (presidentsmedals.com, 2015)

# 5.4 Site and Technical Precedent: Meetse-a-Bophel Primary School

Project Name: Meetse-a-Bophel primary school
Architects: Humphries Jooste Architects
Year: 2011

For South African schools, the conception of 'school as home" is important especially in informal settlements. The architects, subscribing to Montessori's view, equipped each classroom as a unit and a house in itself. In the same way that the Geschwister Scholl in Lunen is designed as a neighbourhood of classrooms, built to create continuity between home and work environments, the Meetse-a-Bophel primary school at Mamelodi, Tswane, is a new example of this radical, but very practical, approach to an architecture of necessity and empowerment (Raman, 2011: 12-15).

The school is arranged around three courts of triangular plan form. They converge at the nutrition centre, with covered outdoor and indoor seating areas for meals and a tuck shop. The centre is seen as the hierarchical element, where the children are ensured at least one square meal a day. The triangular form of the courtyard enables a north orientation to as many classrooms as possible. With the simplest of variations in roof section, glare-free lighting and effective cross ventilation is also achieved. Tunnel facilities are introduced, where fresh vegetables can be grown for the children by some thirty trained ladies from local communities (Raman, 2011: 12-15).

The school is constructed out of IPE portal frames bolted to raft foundations, considered suitable for all ground conditions, thus rendering the system used here applicable to a wide variety of contexts. The steel roof sheeting is fixed to top-hat steel section purlins. Cladding rails and the framework of partitions are also of steel and so are the insulated external claddings and the windows, which are powder-coated. Steel is used for furnishings such as tables, shelves and seating, too. The need for the existing school to function during construction meant that the work had to be phased. It took 13 months to complete the entire project – half the time that would be needed to build a school of this size using conventional means (Raman, 2011: 12-15).

Biophilic Potential

This project revolves primarily around evolved human-nature relationships. The building connects to opportunities of natural lighting and making use of the land as a food source. The cultural connection to place is imminent in design a school that creates continuity between home and school environments. In terms of natural patterns and processes, an element of biophilic design, a central focus point is evident in the school's plan where the hierarchy of the school is focused on the nutrition centre, aimed at providing at least one meal a day to the children. Also evident is the arrangement of plan which is the relation of parts to wholes, another attribute. The school is made up of parts that make up a whole in its shape and form.

Relevance

In terms of relevance, the school aims to create a sense of community by providing spaces that can become the children's second homes. In terms of its context, Sunnyside is similar in character to the qualities of Mamelodi where children depend on their school to provide them not only education but basic needs. The dissertation aims to fulfil these needs through the provision of food at the Cafeteria as well as creating a sense of community through the provision of facilities that encourage sport and cultural participation of individuals in the area. In terms of technical resolution, the structure is made up of portal frames, enabling easy and quick assembly, relating to the South African context.


Fig 5.11 Northern entrance view (Raman, 2011: 12-15)

Fig 5.12 Plan of integrating parts to a whole, and central focus point (Raman, 2011: 12-15)


Fig 5.13 Assembly court and classroom blocks (Raman, 2011: 12-15)

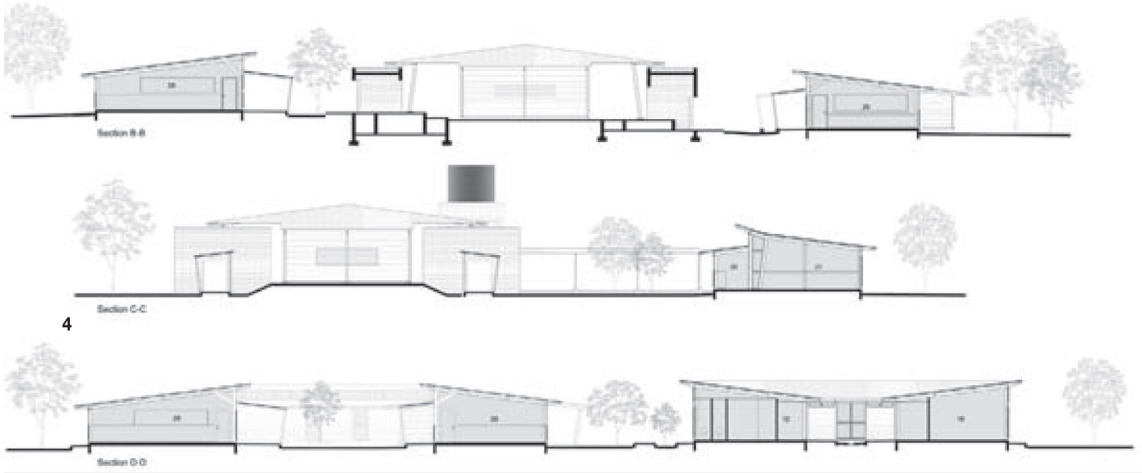


Fig 5.14 Sections showing variations in the roofs and portal frame structure (Raman, 2011: 12-15)

## 5.5 Summary

As the most relevant precedent, the SFU Childcare Centre in how to respond to designing a new landscape in which it becomes a teacher in itself, making children aware of their changing environments and the need to conserve it. The Space as the Third Teacher gives clues to how to design a classroom where meaning to the spaces is given through the activities which take place within it. The Meetse-a-Bophel primary school indicates possibilities in how to construct a school in a harsh environment where the school becomes the children's second home.