



Fig 6.1: Design development sketches. [Author, 2016]

“THE Lord God planted a garden
In the first white days of the world,
And He set there an angel warden
In a garment of light unfurled.”

Dorothy Frances Gurney
(Willis, 2006: 11)

6.1 Introduction

The design process of the scheme was marked by exploration and multiple iterations. It comprised of many exercises to try and establish a concept that would be a uniting element between theory, site and program, as well as a strong decision-making mechanism in producing architecture.

In an attempt to clearly communicate how the process unfolded, it is divided into 3 sections. These are represented by conceptual drawings that aim to resolve the overall strategy for the site, in terms of programmatic function, the route that links all learning elements together and the garden spaces.

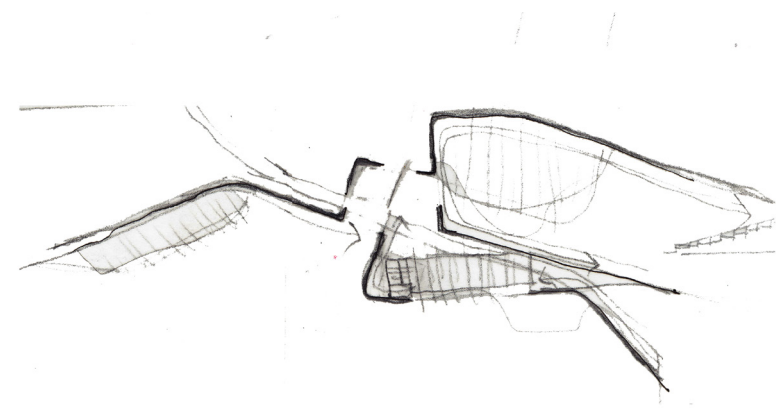


Fig 6.2 Initial design translation of conceptual resolution. (Author, 2016)

6.2 Summary of issues, informants and intents

The diagram on Page 119 (Fig 6.2) describes a summary of the issues identified on site, together with the informants and the intentions. The intentions are related to biophilic principles that are appropriate to all contextual factors and elements. These were seen as resolutions to the issues, using the informants as medium as well as starting points to the development of the concept and design.

In relation to the theories of biophilic design and the informants of site, the three primary elements were translated accordingly:

Water: sculptor and unifier of all aspects of landscape and building.

Natural Systems: the trees and the ground form the “teachers”. Biomimetics will be the approach at which building will be designed. This includes not only the preconceived idea of “what nature looks like” but also the systematic approach emphasising “what nature does”. The architectural significance of these will be expanded on in the Concept chapter.

The Child: Integration of cognitive development through the facilitation of experiential play taking place, immersed in natural surroundings. This will be expanded upon in the Programme chapter and the Concept chapter.

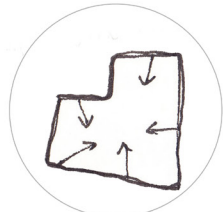
Fig 6.3 (opposite) Diagram summarising development of concept. (Author, 2016)

issues

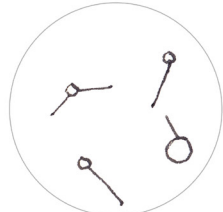
informants

intentions

biophilic resolutions



barriers



broken ecologies



river is barrier



school ignores site



unsafe environment



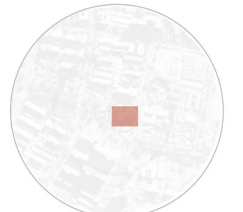
the trees



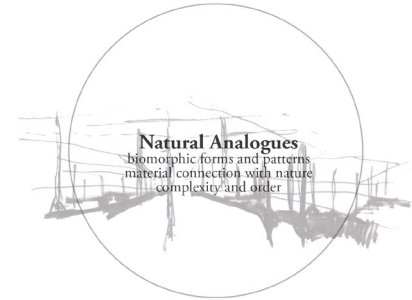
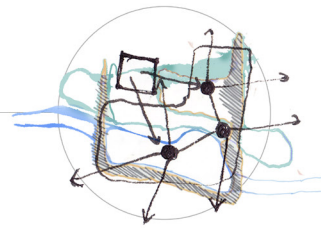
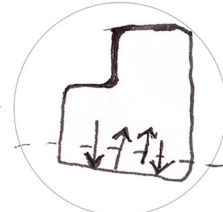
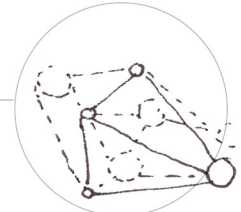
the Walkerspruit



the neighbouring schools



biophilic history



Natural Analogues
biomorphic forms and patterns
material connection with nature
complexity and order



Nature in the Space
visual connection to nature
presence of water
dynamic & diffuse light
connection with natural systems



Nature in the Space
visual connection to nature
presence of water
dynamic & diffuse light
connection with natural systems



Nature of the Space
prospect and refuge
mystery and peril
curiosity and excitement

6.3 Conceptual resolution 1

The first intention as shown in Figure 6.3, was to resolve the problem of barriers on site, by designing interesting spaces for children to learn about nature through observation and immersion. Diagrammatic solutions were explored to resolve these issues as well as to explore different possibilities of the type of architecture that was appropriate.

As Louis Kahn once said, “What does a brick want to be?”, the first approach was identifying what the *site* wanted to be, to identify a intuitive response to what the site needs in order to create spaces where children and adults will want to spend their time. In Fig 6.4 and Fig 6.5, these explorations are portrayed. The massive scale difference resulting in a lost space was the first identified issue and the trees on site and how they helped bring the site back to human scale was an approach. The biophilic principle of natural analogues was applied and resulted in diagrams that showed an architecture of canopies, columns and platforms that mimicked the nature of the tree and at the same time returned the site back to human scale.

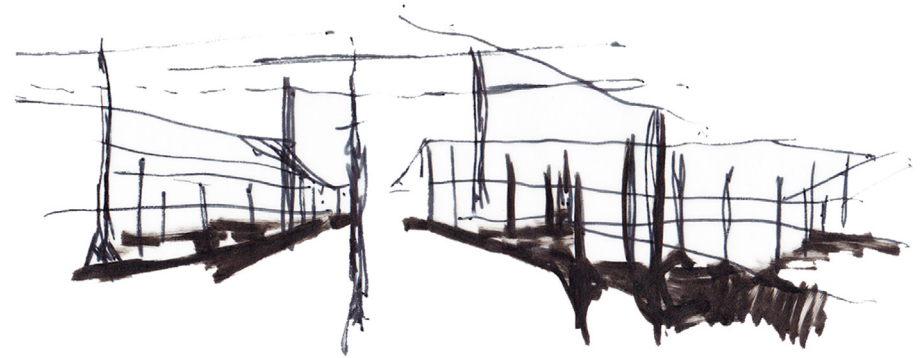


Fig 6.4 Diagram illustrating the analogue of the existing trees and how it returns the site back to human scale. (Author, March 2016)



Fig 6.5 What the site wants. Digital perspective on the nature of the site and what the architecture could do to change it. (Author, 2016)

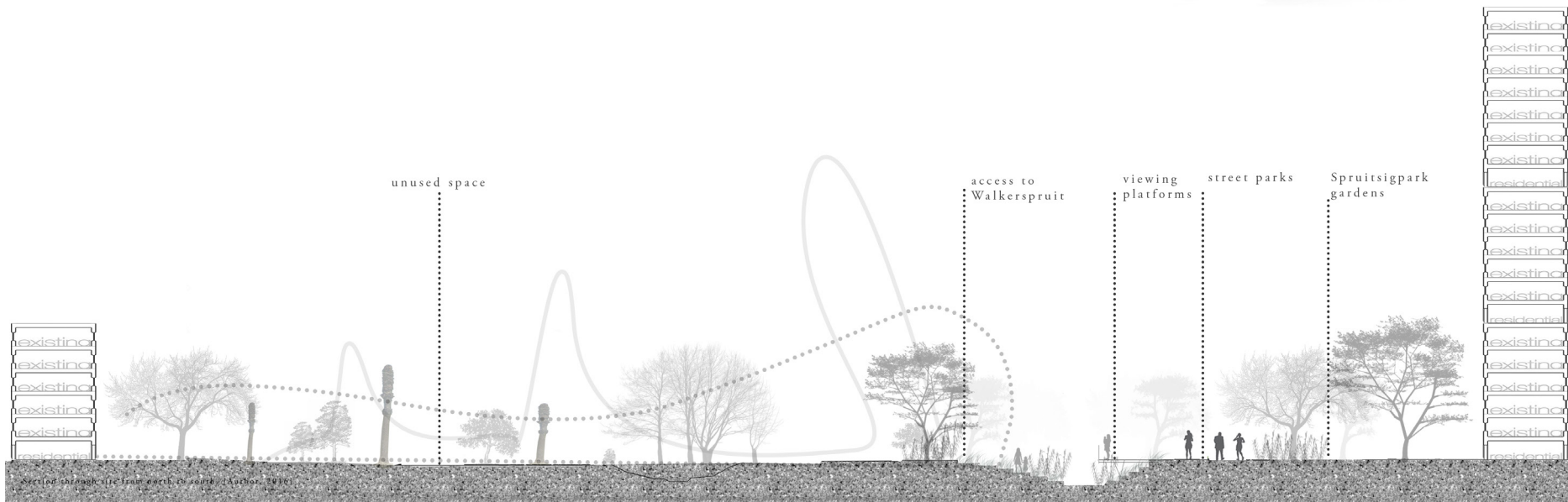


Fig 6.6 Section through site with conceptual diagram illustrating scale differentiations of the proposed design in order to create a sense of scale balance (Author, 2016)

6.4 Conceptual Resolution 2

The second intention as shown in Figure 6.2, was to rehabilitate the neglected ecologies and systems that exist on site as well as the river space that has become a barrier by, firstly recognizing the networks that do exist on site (as shown in Fig 6.7) and designing spaces that frame these existing ecologies. Diagrammatic explorations were carried out to show the water meandering through the site, and the architecture framing various spaces of importance. The findings of the nature of the architecture in resolution was 1 was carried forward to this development.

The approach investigated the various ecologies identified on site and where these networks met, spaces of learning could occur. In Figure 6.8, diagrams of these existing networks and how they converged and spread out, influenced the formation of the diagram in Fig 6.7. The diagram makes use of biophilic principles such as visual connections to nature, presence of water, and connections with natural systems.

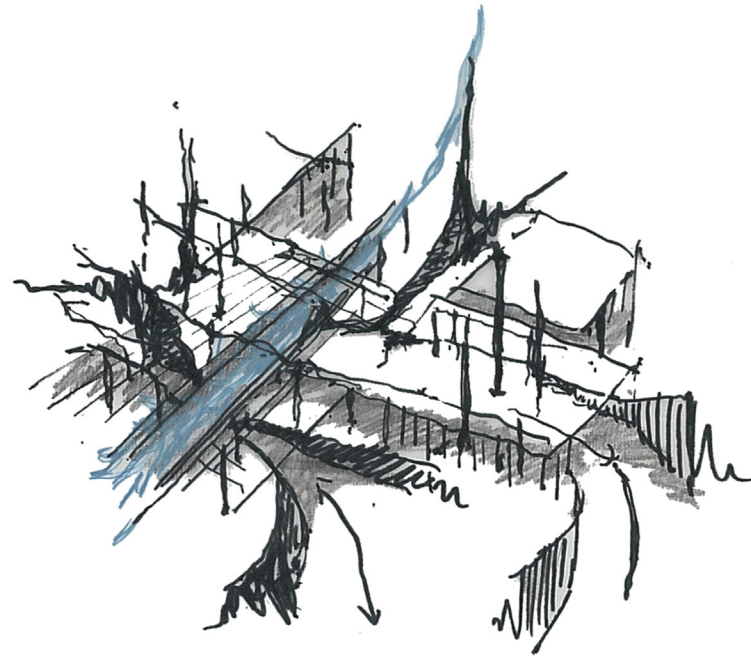


Fig 6.7 Diagram illustrating spaces of ecological potential being framed by the architecture (Author, March 2016)

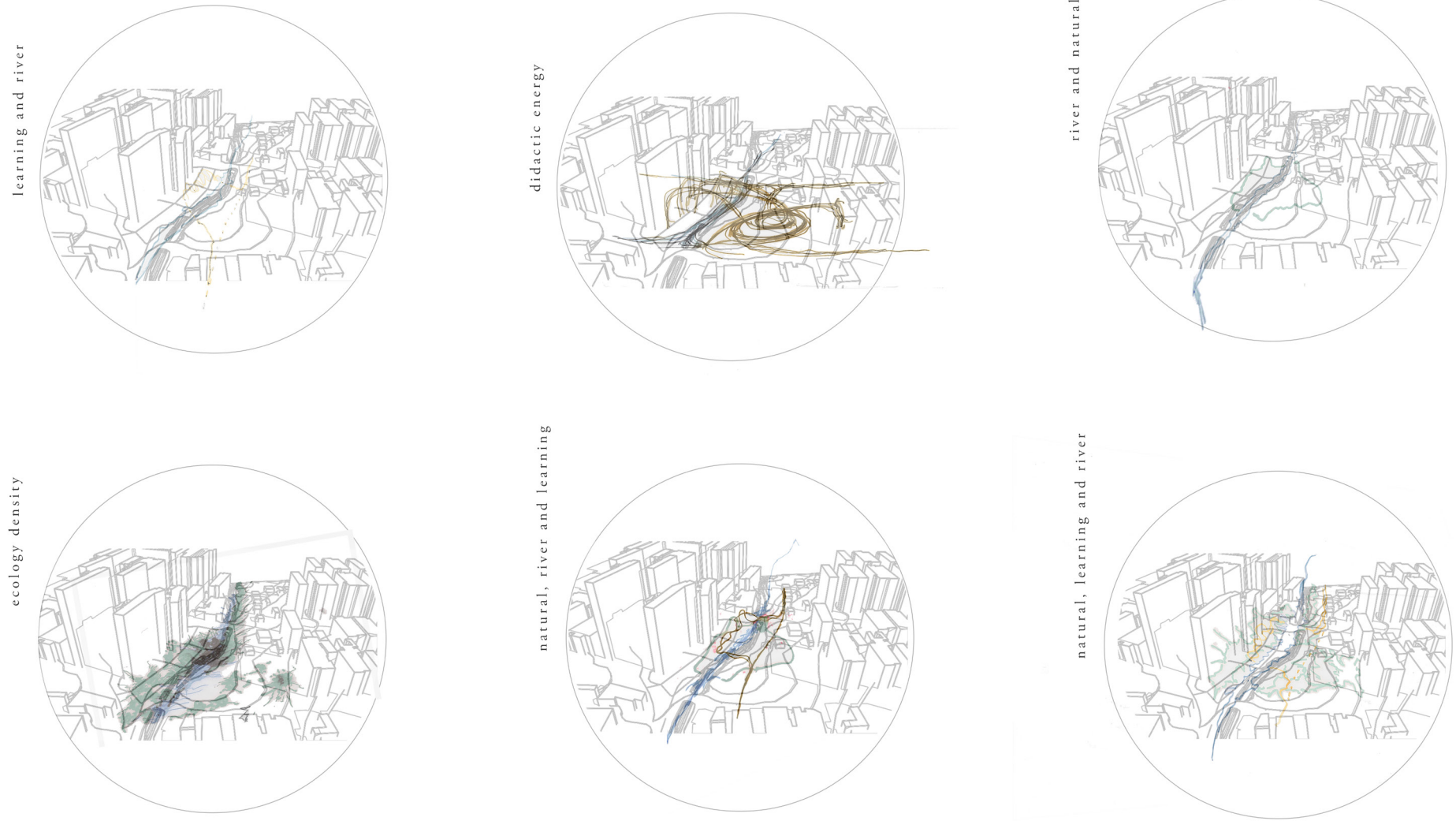
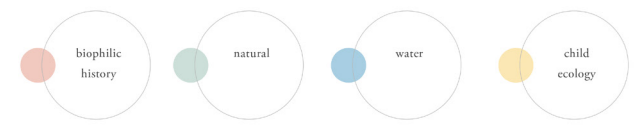


Fig 6.8 Diagrammatic exploration of the networks the four informants on site (Author, 2016)



6.5 Conceptual Resolution 3

The third intention as shown in figure 6.9 and 6.10 was to create a landscape that connects the learning institutions by a central route that meanders movement through the site and creating opportunity for spaces along the way that facilitate learning about the natural systems that exist on site. This was in order to resolve the issues such as the schools ignoring the latent potential of the empty site as well as the fact that the site had become a dead space because of the nature of the high-rise apartments. Diagrammatic explorations were carried out to show how space could be funnelled through from the east to the west, following the movement and flow of the river.

The diagrammatic exploration made use of biophilic principles such as prospect and refuge, curiosity and enticement and mystery and peril. These principles are juxtapositions between the nature of spaces. For example prospect and refuge relate to open spaces with views looking out to the horizons and prospect refers to protective spaces to shelter from the elements. The diagrams explore different possibilities between circulation routes of prospect and refuge spaces for classrooms and learning.

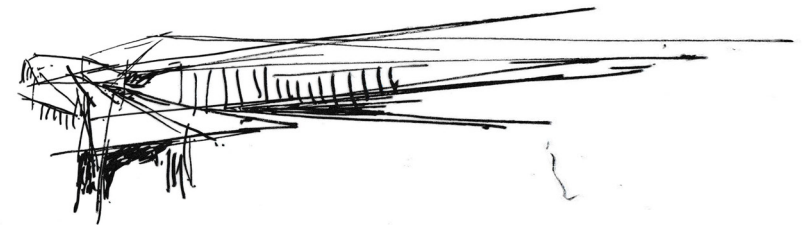
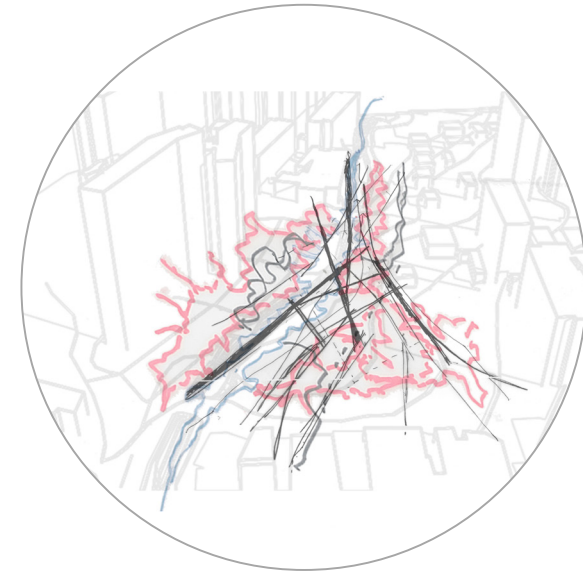
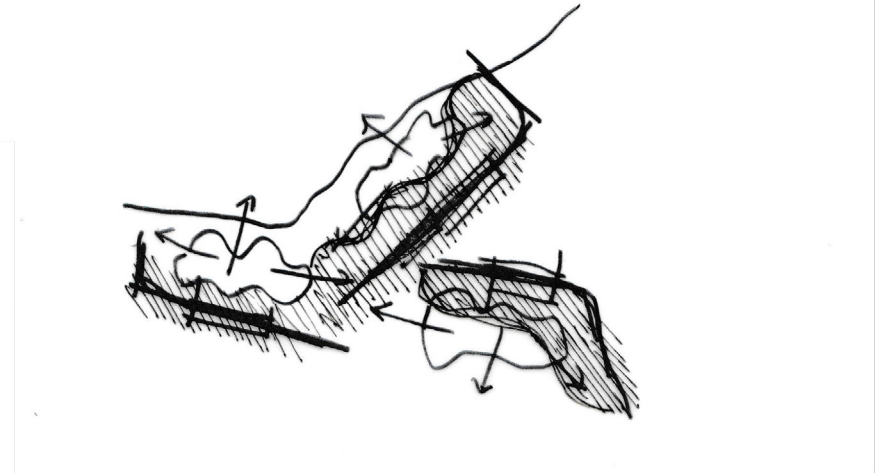


Fig 6.9 Diagram illustrating culminating environments, meandering movement through the site as well as creating spaces of refuge. (Author, 2016)

Fig 6.10 Progression of the exploration of how the program connects to the schools in the area (Author, 2016)



6.6 Conceptual Resolution 4

The fourth and final resolution was a combination of all three resolutions taking aspects from each of the preceding resolutions. The natural analogues of the tree, the framing and connection to natural systems of water and tree clusters and lastly the channelling of movement through the site as well as the linking of the different learning institutions through a movement pathway that breaks barriers and links existing childcare institutions.

What resulted was a meandering landscape, deeply connected to its context, a n architecture that sits within nature in various ways, framing ecologies that served as potential learning opportunities, and at the same time connecting the existing schools through a movement pathway. A plan of the resultant diagram is indicated in Figure 6.11 and a perspective thereof is depicted in Figure 6.12.



Fig 6.11 Plan view of final conceptual exploration. (Author, 2016)

Fig 6.12 Perspective of the final conceptual exploration. (Author, 2016)

6.7 Final Conceptual Resolution

Through the various investigations of where issues on site were resolved through the biophilic application of the informants (tree, water, child), the translation into a guiding concept formed. The final resolution was the use of the existing natural elements on site to become the “third teacher”. The tree, ground and sky became the teachers, and the child learnt about these elements through an architecture that mimicked the character of each through their physical attributes but also the way they work (natural analogues and biomimicry). This gave rise to the concept of a didactic garden or landscape where the children will learn about the various attributes of the environment around them, building a relationship of love and respect of natural systems (refer to figure 6.13).



Fig 6.13 Diagram of what elements of landscape the child can learn from , relating to site and theoretical investigation (Refer to Chapter 2) (Author, 2016)

6.8 Final Conceptual Resolution [Continued]

Translating these three aspects of concept into architecture, according to biophilic principles, are as follows:

Water: sculptor and unifier of all aspects of landscape and building. The water will form a sculpting, unifying path through the site, together with a linking walkway.

Natural Systems: the trees and the ground form the third teacher and will be framed, rehabilitated and protected through an architecture of biomimicry, ecological connection to place, landscape features that define building form, prospect and refuge and exploration and discovery which are all elements of biophilic design which relate to the two intended biophilic dimensions which are place-based relationships and human nature evolved relationships (Refer to Chapter 2)

The Child: Integration of cognitive development through the facilitation of learning taking place, immersed in natural surroundings. The learning will take place through the awareness and sensory stimulation that the landscape elements, as well as the architecture, will facilitate.



water as sculptor of



ecosystems and their processes



natural habitats that trees provide



therapeutic effects of plants and trees



the child biophilic beings

Fig 6.14 Water, the tree and the child design translations. (Author, 2016)

