BIOPHILIA IN THE NEIGHBOURHOOD: CHILDREN'S CONNECTION WITH THEIR NEARBY NATURE

BY

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A thesis submitted in fulfilment of the requirement for the degree of Master of Science in Built Environment

Kulliyyah of Architecture and Environmental Design
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MARCH 2015

ABSTRACT

This research focuses on children's connection with their natural environment by the agency of outdoor activities. It emphasises on nearby nature as a setting that triggers the children's sense of unstructured play. Outdoor activities offer children the chances to interact with nature and to nurture their sense of *biophilia.* Biophilia can be described as the affection for living things or nature. Thus, a positive environment for the children's development needs to consist of *biophilic design* in order to encourage contact with nature on a daily basis. Hence, this study aims at establishing the preferences of children in their natural environment, accompanied by an understanding of the sense of biophilia in their urban neighbourhood settings. Three objectives are formulated: (i) to examine the types of nearby nature that middle childhood children are connected with within their neighbourhood settings, (ii) to identify the children's perception of nature (preference or otherwise) and their sense of biophilia, and (iii) to determine the physical characteristics of nearby nature that connect the children to Biophilia. The scope of this study highlights on middle childhood children in an urban neighbourhood with various socio-demographic backgrounds in Taman Melati, Kuala Lumpur. Accordingly, in order to reveal the children's behaviour and thought, a mixed-method research design was conducted through questionnaire survey, semi-structured interview and observation. A review of literature was also carried out in the study. Data obtained from the data collection stage were analysed by descriptive statistics and content analysis. The finding shows that most of the children are familiar with places that are dominated by natural elements, while mixed elements of man-made and nature prevails in the preferred places. Due to children's limited independence mobility, both of the places are close-proximity to home. The familiar places afford children with unstructured activities, while the preferred places govern balanced types of children's activities. Children value the preferred places because the places make them happiest, afford a sense of privacy and rich in natural affordances. In general, children prefer mixed elements, with more inclination to the natural elements of the settings. Besides, parental restriction, availability of social interactions, structured lifestyles, accessibility and maintenance are the influential factors that influence children's opportunity to be outdoors. It is important to eliminate existing physical problems in children's environment since they usually lead to other social problems. Furthermore, the majority of them have positive views about nature. Notably, regular direct connection with nature developed children's sense of biophilia. Environmental knowledge supported by the sense of biophilia is a strong indicator for their willingness to protect the environment. In brief, the findings are valuable and useful in for designing children's environment that nurtures their sense of biophilia.

ملخّص البحث

هذا البحث الذي قام به الوكالة الأنشطة الخارجية يركّز على اتصال الأطفال مع بيئتهم الطبيعية. ويشدّد على الطبيعة المجاورة كالإعـداد الذي يقوم بتشغيل إحساس الأطفال من اللعب غير المهيكلة. إنّ الأنشطة الخارجية الترفيهية تقدّم لـ ـلأط ـفال فرص التفاعل مع الطبيعة وتعزيز شعورهم بايوفيليا. ويمكن وصف بايوفيليا بشعور الإعجاب والحب للكائنات الحية أو الطبيعة. بالتالي فالبيئة الإيجابية لتنمية الأطفال يجب أن تتكون من التصميم الذي يشجّع الاتصال مع الطبيعة يوميا. ومن ثمّ تهدف هذه الدراسة إلى تحديد امايـ ـفضا ه الأطفال في بيئتهم الطبيعية، ويرفقها بالفهم عن شعور بايوفيليا في إعدادات المناطق الحضرية والمدن. وقـ ـد تمت صياغة ثلاثة أهداف لهذا البحث: (ا) فحص أنواع الطبيعة المجاورة التي ترتبط الأطفال في مرحلة الطفولة المتوسطة بإعداداتهم. (ب) تحديد تصور الاطفال عن الطبيعة (المفضلة و غير المفضلة لديهم) وشعور بايوفيليا لديهم (ج) تحديد الخصائص الفيزيائية للطبيعة المجاورة التي تربط الأطفال ببايوفيليا. ونطاق هذه الدراسة يبرز أن الأطفال في مرحلة الطفولة المتوسطة في حي من أحـ ـياء المناطق الحضرية لهـ ـم مختلف الخلفيات الاجتماعية والديموغرافية في تامان ملاتي، كوالا لمبور. وفقا لذلك، ومن أجل الكشف عن سلوك وفكرة الأطفال ، أجري تصميم البحث لـ ـطرائـ ـق مخـ ـتـ ـلـ ـفة من خلال أدوات الاستبيان، والمقابلة شبه هيكلية والملاحظات. وقد تمّ مراجعة الدراسات السابقة أيضا في الدراسةاكالـ ـية . واما تحليل البيانات التي تمّ الحصول عليها في مرحلة جمع البيانات حـ ـيث لـ ـتـ ـندم طـ ـرق الإحصاء الوصفي وتحليل المحتوى. ويظهر من هذا الاكتشاف أن معظم الأطفال يـ ـألـ ـفون الأماكن التي يسيطرعليها عناصرالطبيعية. بينما تـ ـسود العناصر المختلطة الـ ـتي صـ ـنعها الإنسان والطبيعة في الأماكن المفضّلة. والـ ـسـ ـبب هو أن التنقّل باستقلال هو أمر محدود للأطفال فكلاهما من الأماكن قريبان من المنزل. فـ ـالأماكن المألوفة تتيح الأطفال الفرصة للمشاركة في الأنشطة غير المهيكلة. وأما الاماكن المفضّلةفـ ـإنهـ ـا تمـ ـتـ ـلك انواع الأنشطة المتوازنة (بين المهيكلة وغير مهيكلة). يقدر الأطفال الأماكن المفضّلة لكونها تجعلهم أكثر سعادة، وتحمل الشعور بالخصوصية ولكونها غنية بـ ـا لإمكاياـ ـنات الـ ـتي تـ ـقـ ـفاعـ ـل مع الطبيعة. وبشكل عام، انّ الأطفال يفضّلون العناصر المختلطة، مع مزيد من الميل إلى العناصر الطبيعية من الإعدادات. إ لى جانـ ـب ذلك، تقييد الوالدين، وتوافر التفاعلات الاجتماعية، وأنماط الحياة المهيكلة، وسهولة الوصول والصيانة هي العوامل المؤثرة التي تمنح الاطفال الفرصة لـ ـلخروج في الهواء الطلق. ومن الأهـ ـية بمـ ـكافإزالة المشاكل المادية الموجودة من بيئة الأطفال لأنها عادة ما تؤدّي إلى مشاكل اجتماعية أخرى. وعلاوة على ذلك، فإن الغالبية منهم لديهم وجهة النظر الإيجابية عن الطبيعة. والجدير بالذكر، أن التّصال المباشر المستمر مع الطبيعة تطوّر إحساس بايوفيليا للأطفال. المعارف البيئية التي يدعمها الإحساس والشعور بايوفيليا هو مؤشر قوي على استعدادهم لحماية البيئة في المستقبل. وباختصار، فإن نتائج الدراسة قيمة ومفيدة لتصميم بيئة الأطفال التي تغذي وترعى شعورهم بايوفيليا.

APPROVAL PAGE

I certify that I have supervised and read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a thesis for the degree of Master of Science (Built Environment).

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Dean, Kulliyah of Architecture and
Environmental Design

DECLARATION

I hereby declare that this thesis is the result of my own investigation, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

`Izzah Adibah Binti Ismail

Signature……. Date ….....

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Affirmed by `Izzah Adibah Binti Ismail

……..……..…… ……..
Signature Date

I wholeheartedly dedicate this thesis to…

My beloved family

You are my greatest blessings

Thank you.

ACKNOWLEDGEMENTS

In the Name of Allah, the Most Gracious and the Most Merciful

Alhamdulillah, all praise to The Most Merciful Allah SWT for His countless blessings on me and those who are important in my life.

I would like to express my deepest gratitude to my supervisors, Asst. Prof. Dr. Mazlina Binti Mansor and Asst. Prof. Dr. Nurul Syala Bt. Abdul Latip for their knowledge, guidance, encouragement and concern throughout the journey of this study. Lessons shared and learnt from their previous experiences and perspectives of life are fully appreciated.

I would also like to convey my appreciation to all lecturers and staff of the Kulliyah of Architecture and Environmental Design, especially for their helpfulness and cooperative attitudes. I am also blessed to be accompanied by good friends and beautiful people during this journey.

Finally, my utmost appreciation goes to my cherished family for their everlasting love. They have been a great source of my strength. My special acknowledgement also goes to those who have contributed to this journey, may Allah S.W.T reward you for your kindness. Thank you.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATION

CIM	: Children's Independence Mobility
DBKL	: Dewan Bandaraya Kuala Lumpur
EHA	: Established Housing
LRT	: Light Railway Transit
KLCP	: Kuala Lumpur City Plan
KLSP	: Kuala Lumpur Structutre Plan
JPBD	: Jabatan Perancangan Bandar dan Desa
MRR2	: Middle Ring Road 2
R3	: Residential 3
RQ	: Research Question
PH	: Public Housing
WHO	: World Health Organization
SPSS	: Statistical Package for Social Sciences

CHAPTER ONE
INTRODUCTION

1.1 INTRODUCTION

This chapter is an overview of study on the children's connection with their natural environment or what this research calls as *nearby nature*. In doing so, the study investigates the ways in which children connect with nearby nature and the physical characteristics that determine this connection to the natural environment. The first section discusses on the background of research, which provides an overview of the major topics that include middle childhood children's need of play, nearby nature and the Biophilia theory. Section 1.3 addresses the problem statements of the research. Issues concerning the children's relationship with nature are discussed in general and then further examined in the Malaysian context. The next section reveals the research questions, aim and objectives of the study. Section 1.5 of this chapter elaborates the significance of the study further and explains the scopes of study and structure of the research in detail.

1.2 RESEARCH BACKGROUND

This research focuses on middle childhood children as the unit of analysis of the study. According to Jean Piaget, a child psychologist, middle childhood children who are in the ages of 6 or 7 to 12 years old, are reaching the stage of concrete operational thought (Saul McLeod, 2008). Thus, the selection of children from this stage is mainly due to their ability to interpret their experiences and feelings to others (Nor Fadzila and Ismail, 2012).

This study focuses on the children's connection with the natural environment through play. Natural environment within the children's range varies from domestic gardens, school compounds, streets, vacant lot, and parks to playgrounds within their vicinity. Furthermore, this study also emphasises on any omnipresence of nature elements within walking distance from a child's home, or widely known as *nearby nature*. The nearby nature amplifies the children's play and it exists in many forms. They can be a small grassy mound area to play tag and chase; an isolated secret place for group's gathering in an abandoned mining site; a place where children can pick fruits and flowers; and a place where they might get lucky to come across cats, squirrels or other animals. Regardless the form, the nearby nature is able to trigger the children's sense of play.

The novelty that the outdoor environment offers is qualitatively different from indoor environments. The outdoor environment allows children to express themselves, either through structured play or unstructured play. This study, on the other hand, urges to focus on unstructured play in outdoor environment. Unstructured play grants children the chance to play comfortably without consistent interruption from adults (Tovey, 2007). At the same time, it also allows children to create their own challenges and imaginations accordingly to afffordances of nature.

Moreover, outdoor play activities encourage the children's innate interaction to nature. This closeness to nature emerges when children learn to value the natural environment. Biologist, Edward O. Wilson (1984), dubbed '*biophilia'* as "the connection that human beings subconsciously seek with the rest of life". He stressed that human beings have an innate and an evolutionary-based affinity for nature. Additionally,the biophilic design is believed to add value to energy-centric concepts of sustainable or green design (Kellert et al., 2008). In general, the biophilic design

purpose does not only focus on conserving energy, but also concentrates on producing human energy. Designing by means of permitting sufficient natural light, air ventilation and inducing some natural elements are some examples of the biophilic design.

In addition, biophilia in built environment represents an opportunity for us to reconnect with nature, not just to appreciate it visually, but most importantly, by making direct connection with nature on regular basis. The biophilic design matters the most for two primary reasons; (i) human performance metrics, and (ii) appreciation of nature. For instance, the advantages of biophilic design for in human health, particular in hospitals settings, include faster healing recovery, expense on using strong painkiller, reducing anxiety and relieving pain (Kellert et al., 2008). Moreover, the biophilic design also enhances human intelligence (Louv, 2008). 'Nature smart' is the eigth intelligence from all eight types of intelligence proposed by Howard Gardner (1983). Children who possessed this kind of intelligence have keen sensory skills, good in recognising and categorising species or object found in natural elements, prefer to be outdoors, interest in nature related themes, and good at observing their surrounding patterns (Louv, 2008). Besides, the time spent with nature during childhood positively influences their creativity as adults (Louv, 2008). Another advantage of the biophilic design is the outstanding appreciation for nature. This desire to value nature without harming the nature, in turn will motivate people to protect nature elsewhere and have better chances in having direct connection with nature. In Japan, the "Ring Around a Tree" by Yui and Takaharu Tezuka, is a great example of kindergarten that was built around a big tree. Aside from showing great appreciation to nature by maintaining the existing tree, it also gives emphasis on

appreciating the surrounding view of nature from the inside. Interestingly, the design also responds to the children's ergonomic, in terms of its size and shape.

Additionally, research on children's outdoor environment has evolved through time. Studies of children and their outdoor environment demonstrate that trend on types of children's outdoor environment, and research concerning them have changed over time. According to Nor Fadzila and Ismail (2012), before the year of 1990, studies were mainly focused on specific environments, such as playground, street and school ground. The research concerns during that time were primarily on the design and safety aspects of the children's play space. In the 1970s and 1980s, examples of early studies on this topic, provide information on the children's range of behaviour, which were found to be influenced by the children's maturity level rather than obstacles from the built environment and parents (Kellert et al., 2008). Moreover, the evolution of studies on children's outdoor environment can be seen during the early 1990s, where studies were focused on the wider environment, such as within the neighbourhood area, public places and also, the playground areas. These studies investigated on factors that determine the children's use of outdoor spaces, children's experiences being outdoors and its impact on children's development.

Besides, during the years between 2000 and 2010, studies on children's outdoor were still commonly carried out for residential areas with an extension on school grounds and also projected more interest on the natural environment. Recently, research on the relationship between natural attributes and children's development becomes more significant than before. The research from this period proves that the limitation on children's use of outdoor environment brings negative consequences to their development and play experience (Nor Fadzila and Ismail, 2012). In addition, more researches during these years are concerned about the roles of design to

encourage children's activities, by integrating natural elements into the children's play space. Hence, this study embarked on exploring and understanding the phenomenon of children's connection with the natural environment.

1.3 PROBLEM STATEMENTS

People from all walks of life are experiencing the impacts of children's limited opportunity to connect with the natural environment (Kellert et al., 2008). One of the broadly known negative effects to children is *'nature deficit disorder'*, which was popularized by Richard Louv (2008). This term suggests the human costs of alienation from nature, by higher rates of emotional and physical illness, decline in children's use of senses and attention difficulties.

Apart from the children's declined in physical and mental health, there are also negative effects of 'nature deficit disorder' which from a broader perspective will worsen the connection between children and nature. For instance, this issue has also contributed to fear of nature itself or known as *biophobia*. Biophobia has significant negative effects on the children's life. Biophobia, which is a dislike feeling towards nature, can be seen when a person becomes extremely attached to be indoors and becomes uncomfortable being outdoors (White and Stoecklin, 1998). In relation to this, according to White (2008), middle childhood children are in the stage where they undergo 'bonding with the earth stage'. This means that a feeling of dislike to nature or biophobia may develop, if the children's affiliation towards nature 'biophilia' are being curbed and disturbed during their middle childhood years from thriving.

In addition, unlike the previous generation, today's generation has lesser appreciation for the environment (Clements, 2004). Insufficient experience in nature during younger years in one's life will influence their attitudes towards environmental

issues, whereby they are more inclined to form negative perspectives towards nature (Ainul and Suhardi, 2012).

At the same time, the lack of affinity to nature can be seen when people do not regard the existence of nature as part of their life. This perspective puts more gaps between people and nature and encourages disconnection from the natural environment. This is supported by Vining et al., (2008) where they suggested that dissonance may arise, eventhough people generally perceived themselves as part of nature. This is because most people perceive natural places as independent from human contact or interferences. Such conflict begins when people assume that the human built environment can exist independently without the natural environment. At the same time, this misunderstanding will support environmental abuse and worsen people's weak inclination towards nature (Kellert, 2005). These negative effects are formed because of the children's disconnection from nature.

Within the past few decades, studies suggested a worldwide emerging pattern of declining numbers of children's activities in the natural environment. This phenomenon is prominent in urban areas. However, this phenomenon is also not an exception in rural areas, although the places are synonymous with abundance of natural elements (Min and Lee, 2006). In spite of that, nowadays, it is also difficult to find children wandering in the neighbourhood, and the culture of walking and cycling to school seems to have been diminished too. Furthermore, Tovey (2007) reported that children in rural and urban areas are experiencing a decline of freedom to play outdoors. This is in regards to their independence mobility, which has shrunk drastically from the way it was in 1970s. Thus, it is found that children seen unsupervised playing outdoors, particularly in unstructured play using natural elements have increasingly decreased.