

# Abstracts

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ASLI (Annual Serial Landmark International) Conferences on QoL2017

## A *QoL2017Kuching*

3<sup>rd</sup> ABRA *International* Conference on Quality of Life  
Riverside Majestic Hotel, Kuching, Malaysia, 14-16 October 2017

<http://www.amerabra.org>; <https://fspu.uitm.edu.my/cebs>; <http://www.e-iph.co.uk>

*“Quality of Life 3”*

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*“Quality of Life 3”*





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*Abstracts, AQoL2017Kuching, 14-16 Oct 2017.  
Riverside Majestic Hotel, Kuching, Malaysia*

## **Foreword**

The 3<sup>rd</sup> AQoL2017Kuching with "Quality of Life 3" as the main theme managed to attract an overall total of 64 numbers of approved abstracts, from five countries.

Majority of the abstracts (40 numbers or 63%) were contributed by Malaysia. This was followed by Indonesia (9), Thailand (8), Taiwan (4) and UK (3). The abstracts approved were simply grouped generally under 17 sub-categories, although quite a number could have been easily placed under more than one category. The top four categories in order of popularity involved the following environments:- Health / Healing Environment, Learning Environment and Urban Environment / Urban Psychology (8 numbers each or 13%), Community Environment / Social Psychology (7), and Residential Environment (6).

The Association of Malaysian Environment-Behaviour Researchers (AMER), the main organiser of AQoL2017, together with the co-organisers, ABRA and cE-Bs, FAPS, UiTM congratulate all abstract contributors.

**Prof. Dr. Mohamed Yusoff Abbas**

Chair, AQoL2017Kuching

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14<sup>th</sup> October 2017

## **About the Conference**

### **Background**

Asia is the world's largest and most populous continent with a population of about 4.3 billion people in 2013. Hosting about 60% of the world population, and coupled with a high growth rate, it is imperative that Asia establishes an international research organisation which specifically focus on the well-being of the Asian communities, living in both the Asian and non-Asian countries.

Hence, the establishment of ABRA (Association of Behavioural Researchers on Asians), officially formalised on 20th October 2014, with its headquarters in Shah Alam, Malaysia. AMER (ABRA*malaysia*) shall be the permanent secretariat for ABRA*worldwide*, currently represented by Egypt, Iran, India, Indonesia, Malaysia, Taiwan and Turkey.

To mark the establishment of ABRA*worldwide*, the maiden international conference AQoL2014 (ABRA International Conference on Quality of Life) was held in Istanbul, Turkey, from 26-28 December 2014. The 1st ABRA*worldwide* Board Meeting was also held in conjunction with the conference. To enhance the QoL conferences further, the AQoL to be held in non-ASEAN countries (except Malaysia) shall be the sister conference to the more established annual AicQoL, held in ASEAN countries. Both back-to-back QoL conferences shall form the ASLI (Annual



Serial Landmark International) Conferences on QoL. After the maiden, the second AQoL was held in Izmir, Turkey from 09-14 December 2015.

### **3<sup>rd</sup> AQoL2017Kuching Theme: Quality of Life 3**

The Quality of Life (QoL) has been a central issue for decades, not only for disciplines involved in the creation of the built environment and the management of the natural environment but more importantly of the impact upon the global communities, due to the growing pressures of development. QoL shall forever not only remain central, as "quality" is subjected to continuous improvement but also subjective because the interpretation differs between communities in the more developed regions as compared to those in developing regions. The QoL concept is also linked to Sustainable Development, such that unless we engage with more sustainable practices, the QoL in both the built and natural environments would soon be deteriorated.

AQoL2017Kuching, contributes to the debate and solutions on the QoL concept as a key element of responsive environmental design impacting various communities. In particular, which affects the currently 4.3 billion Asian communities worldwide - about 60% of the world population. Special focus shall be upon the wellbeing of those Asian communities, with a high growth rate, living in both the Asian and non-Asian countries., which involves the following environments (though not exhaustive):-

Children's Environment; Commercial/Retail/Services Environment; Communication Environment; Community Environment / Social Psychology; Construction Environment; Disabled / Inclusive Environment; Educational / Learning Environment; Elderly Environment; General Psychology; Healing / Healthcare Environment; Hospitality / Tourism Environment; Landscaping Environment; Legal Matters; Leisure / Recreational / Sports Environment; Local Cultural / Heritage Environment (Food included); Natural Environment; Residential Environment; Rural Environment / Rural Psychology; Technology-related Environment; Transportation / Travelling Environment; Urban Environment / Urban Psychology; Workplace Environment; etc.

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# **Construction Environment**

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**A.01**  
CoE 001

**Mitigating Contractor's Claim on Loss and Expense  
due to the Extension of Time in Public Projects:  
PWD's Level Of Knowledge & Understanding in Loss  
& Expense Claims**

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Sound contract management has proven to be the key success factors in delivering good and quality delivery of property in private and public development. Good and efficient delivery usually leads to satisfied property owners. This will in the end indirectly improve their quality of life especially when they will end up with the good quality end product which meets the value for money regarding cost, quality and time. Construction claims on Loss and Expense in construction projects are common yet can be mitigated in several ways. This paper aims to explore on the level of knowledge and understanding in Loss & Expense Claims concerning the Public Works Department (PWD) projects in Malaysia with a highlight on some of the critical issues and challenges faced by the clients in mitigating the contractor's loss and expense claims. Data were collected through a questionnaire survey that was distributed among selected multi-discipline professionals. The objectives of this questionnaire survey

are to identify the level of knowledge and understanding of PWD professionals in dealing with claims for loss and expense in PWD projects and also to identify the key factors to mitigate claims for Loss & Expense in PWD projects. The findings showed that 70% of the respondents had no idea on the topic and understood partially of the research topic about the minimization of loss and expense claims. Therefore, from the findings shows that this research is viable and significance to the department due to this lower statistics. Besides, comments from selected experienced professionals also been include in this paper regarding this minimization of claims for loss & expense due to Extension of Time (EOT). The key factors that contribute to the delays that will directly impact on Loss & Expense claims also been highlighted. This paper will attempt to address these contractual issues given delivering better value products at the end that will lead to better quality of life for future occupants.

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# **Community Environment**

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**A.02**  
ComE 001

**Aspects of Well Being and Quality of Life of  
Indigenous People: Orang Asli Kampung Sejagong,  
Yong Peng Johor**

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In this paper, we highlight the development of indigenous people, i.e., the Orang Asli in the case study area through selected aspects of "well-being" or quality of life. We use an adaptation of the United Nations' Human Development Index (HDI) that assess "human development," defined as the provision of more choices through education and literacy, a standard of living, and healthy, long life. The concept of human development was described by the UNDP include three general and inter-related perspectives: an income sufficient to reach a minimal standard of living; knowledge, and health, which is a fundamental prerequisite to well-being. Life expectancy measures Health, educational level measures knowledge and adult literacy rates, and income measures the material standard of living. These three indicators with equal weighting, give an overall HDI score. <https://bmcinthealthhumrights.biomedcentral.com>. In Peninsular Malaysia, Orang Asli faces two types of development which are planned development and standard development (July 2003). Planned

development includes the provision of infrastructure, education, and economic activities. Traditional development refers to development programs that are conducted for a regional area and fully implemented regardless of community groups. In Malaysia, the development of Orang Asli focuses on two main thrusts of economic and social development. This study will record observations of the physical facilities provided, at Kg.Sejagong, conduct interviews with the Town Planners in the Local Authority, officials from the Department of Orang Asli Development (JAKOA), and elders of the Orang Asli. A survey using questionnaires will assist to obtain information about household size, physical and socio-economic programs and the satisfaction levels of the resident Orang Asli. Preliminary findings are that the Orang Asli face issues of quality of housing, inefficient basic amenities, lack of economic and entrepreneurial opportunities, low education level and sustainability of cultural identity.

*Keywords:* Quality of Life, Indigenous people, Development

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**A.03**  
ComE 002

**Co-living for the Asian Net Generation:  
Inventing the 9 floor model in Taipei Taiwan**

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Asian urbanism brings opportunities for business and developments as well as dwelling stresses for the urban youth. We elaborate and examine the recent trend of co-living lifestyles within the glocal urban young people in Asia cities by focusing on the 9Floor case of Taipei, Taiwan. The founding members of the 9 Floor had been depressed by the high-cost rental with lousy quality of lives. These group of the twenty-some decide to take action and innovate their ideal urban lifestyles for entry-level urban young people. Their belief is: rooms for rent, lives not; sharing lives with vibes.

In our paper, we focus on the mechanism of "Open House" that the 9Floor invented. "Open house" is an event popular in the United States. Individuals as well as institutions, when they welcome others to visit their private home places or institutional spaces, they set up a day and time for visitors to come. More importantly, real estates agents apply this cultural customs for home sales that allow home hunters to check up the properties that they potentially to put down payments and invest their lives forward.

We apply action research methods as well as qualitative interviews in our paper. We claim that co-living phenomenon should be considered as glocal communities, which share the following characteristics: borderless,

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diversity and flowing. From this point of view, the main purpose of this article is to illustrate how to make, or, rebuilt strong social connections and good conditions of dwelling through co-living space spaces.

**Keywords:**Co-living; Glocal community, Asian urbanism, Net-generation Lifestyles

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**A.04**  
ComE 003

**From Large to Small Scale Development:  
Framing Social Challenges and Rural-Urban  
Development in Indonesia**

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The global phenomenon has shown that urban environment has become more competitive and prone to dispute, including Indonesia. In the end of 1990s, the country faced a great socio-political challenges which escalated into violent communal conflict. Studies have emerged as an attempt to understand the situation, but they come to a different conclusion as to how conflicts arise; mostly the current research on violent conflicts in Indonesia views the issue from socio-political perspectives. In the context of 'urban' planning, both development practice and current research find some difficulties to define practical movement to mitigate the potential of future conflicts. The discussion on violent conflicts in Indonesia has not yet clearly recognised the linkage with urban planning practices.

This paper aims to explore the connection between social conflict and built environment and urban-rural development in Indonesia. It discusses potential responses to social conflict from urban planning point of view. The discussion links the tendency of planning and development practices in three places (Solo, Poso, and Sambas) with the characteristics of planning practices in

Indonesia.

The finding argues that the current planning and development does not really take the issue of conflicts into account. In the context of Indonesia, conflicts has happened not only in urban area but also rural area; the rural-urban is facing rapid transformation in response to the conflicts. This environment can be considered as 'grey area', in the context of economics, socio-culture, social construction, and infrastructure development. In order to handle a conflict prone environment, planning and development practice needs to focus on three levels: city levels, community, and personal. A detail attention on rural-urban area plays important role in mitigating the potential of conflict between community member. The findings will be beneficial for the planning practitioners and government in order to plan the development and either mitigate the potential of future conflict or respond to the recent violent conflict.

**Keywords:** Communal conflict, rural-urban development, urban planning, Indonesia

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**A.05**  
ComE 004

**How the sense of place changed from local-based  
education? A case study of the educational programs  
in a historic town**

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Dasi is a famous historical town of north Taiwan, because of the preservation of the historic buildings of streets. It began to build the home identity of the locals from the 1990s. By the community participation shown the ancient culture of the town successfully, it became an attractive place for the tourism in Taiwan during the recent ten years. While the industry and lifestyle in the town are changing, it has a bearing on the power of the community groups. The store changed to sell expensive food and the street filled with people during the weekend. The life in the town is not convenient and low quality. Young people were left to work outside the community, and the social relation is to harden into stone.

By the time goes on, the sense of place is changing to reconstruct the "Local." While the industry changed, the culture is much different from the traditional, and the young people have a different dream of their home community. We found some alienated feeling in young people of the town from the workshop discussion of the "Dasi-field school".

However, in recent three years, the eco-museum project by participating with the local people, and it stimulated some learning programs in the community. In these two years, some young people would like to stay in

the community and have some creative businesses. What makes sense of place change? And what are the dreams of town from the youth?

In this action research, firstly, we had data analysis about the community learning-landscape of the community. And does it change to involve the “new” in the process of community participation? Finally, we want to discuss how learning programs make sense of the neighborhood change and flow.

**Keywords:** local knowledge, sense of place, environmental education

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**A.06**

ComE 005

**Improving the Community Behaviour towards  
Sustainable Mobility for Liveable Neighbourhoods**

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The community behaviour involved in various activities is a major factor affecting the environment and nature protection. The community ability to control and reduce the problems of continuity together, from time to time by diversifying the forms of activity and the potential for economic and social development. Major challenges of these issues are identifying the community and predicting the behaviour of each community in neighbourhood. Investigating the behaviour that influence the community can indirectly lead to an improvement of efficiency of sustainable improvement in sustainable mobility measures. Many local authorities are eager to overcome these issues and simultaneously improve their sustainability and productivity. The engagement of the private sector or stakeholders, therefore, is crucial for their continuation. The cycle of decline illustrates how poor quality housing, badly maintained local environments, problems with antisocial behaviour, crime and disorder including drug and alcohol misuse can cause instability in residential neighbourhoods. The research focuses on the behaviour of community in Shah Alam, Selangor. The study is conducted through face to face survey in selected residential area. One hundred and thirty five samples were retrieved from the low cost, medium and high cost housing. Fifteen

community behaviour items were tested. The main factors that contribute in successful relationship between the community behaviour factors towards sustainable mobility are neighbourhood safety of crime, neighbourhood safety of traffic and neighbourhood street connectivity. Intention involved in this study conducted through a survey using a questionnaire. The reliability of three constructs were acceptable, done using Cronbach's Alpha. Cronbach's Alpha coefficient level showed all the factors exceeding 0.80. These results explain all items construct have good internal consistency, indicating that all dimensions have a good reliability value. A contributing factor of community behaviour has been discovered to reduce the negative effects of congestion, antisocial behaviour, crime, and vandalism. By improving the community behaviour, liveable community in neighbourhood residential can be achieved. It is hoped that local authority should incorporate these factors, when examining the factors that influence sustainable mobility. Most people feel reluctant to leave home using public transportation.

**Keywords:** Community behaviour; sustainable mobility; neighbourhood

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**A.07**  
**ComE 006**

**Narrative of Body-Space on the Roads**

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A neighborhood as a dynamic system provides open spaces such as green open space, open sports field and also roads beside settlements for the community. The road as a dynamic component is also a circulation system that connects the components in the neighborhood. This fact makes neighborhood's roads as an interesting case to study how the presence of peoples in community interacts with the spatial morphology in the formation of a neighborhood. The neighborhood's roads also became the main setting environment and their interaction under changing relations over time for this research.

This research is looking at the phenomena that occur in a neighborhood with the aim of looking for something unique which tends to be ignored in everyday life. An annual activity can transform a dynamic component of the neighborhood into an active space for society. Idul Fitri, an annual lunar based celebration after one-month fasting, is a unique event need to be conducted in the large field. The absence of such fields in the neighborhood is anticipated by turning the roads into the large space for all the people, so roads have a unique characterize as social presence and this will be explored through narratives. This paper investigates the relationship between the road as a setting environment and Idul Fitri as an annual celebration event and explores the change of roads space into a place. It investigates the physical and temporal relationship between the existing arrangement of the human presence, the building, and the

environment, by exposing this process as the narrative was constructed by body movement, body relationship, and sensory experience within the events embedded.

This research argues that the relevant narrative about roads-event not only helps us discover their enchanting spatiality but also the establishment of alternative points of view of the structure roads and neighborhood interactions that can also contribute to defining perspectives for the neighborhood qualities also the further development of research practices and research by design.

Keywords: body-space, roads, narrative, morphology

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**A.08**  
ComE 007

**Socio-Demographic Influencing Behaviour against  
Solid Waste Minimisation**

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The growth of the world's population, increasing urbanisation, inadequate infrastructure and expertise rising standards of living and rapid developments in technology are factors influence directly the municipal solid waste generation in Malaysia. Malaysia, the total quantity of municipal solid waste generated will increase from 19,100 tons of waste per day in 2005 to 30,000 tons per day by 2020, if the annual rate population growth of 2.5 per cent. Municipal solid waste management is one of the most challenging problems and present a serious challenge to local authorities and planners in developing countries caused by the generated of large waste quantities. Therefore, solid waste minimisation is one major way of achieving a sustainable solid waste management. Solid waste minimisation as an approach to solid waste management helps in the separation of wastes from the

source. Influence households socio-demographic on behaviour factors in solid waste minimisation are believed to achieving sustainable solid waste management. This study investigates the influence of household attributes on waste minimisation behaviour in Shah Alam City, Malaysia. Through a household survey, 300 respondents were randomly chosen from the three housing types (terrace, semi-detached, bungalow) in the study area. Thus, the study adopted a one way ANOVA to determine statistically the significant differences between household socio-demographic and behaviour factors towards solid waste minimisation. Findings from the study revealed that behaviour on solid waste minimisation has statistically significant associations with 4 socio-demographic characteristics, namely gender [ $F(298) = 7.33, p = 0.00$ ]; race [ $F(2, 297) = 3.22, p = 0.04$ ]; marital status [ $F(2, 297) = 3.51, p = 0.03$ ]; and home ownership [ $F(2, 295) = 7.57, p = 0.00$ ]. It is surprising in this study that education was found not be a significant factor considering that it is expected that not having a good education decreases of knowledge to participate and vice versa. It is anticipated that the results of this analysis will facilitate the design and implementation of policies (by government/local authority) for sustainable solid waste minimisation.

**Keywords:** Solid waste management, Solid waste minimisation, Socio-demographic, Community Behaviour.

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# **Commercial, Retail & Services Environment**

*Abstracts, AQoL2017Kuching, 14-16 Oct 2017.  
Riverside Majestic Hotel, Kuching, Malaysia*



**A.09**  
**CRSE 001**

**Comparing Consumer's Awareness, Attitudes, and  
Perceptions towards Genetically Modified Foods  
(GMFs)**

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The development of Genetically Modified Foods (GMFs) has been a matter considerable interest and worldwide public controversy. Genetically Modified Foods a considerable proportion of innovation in the marketplace due to the world's fastest growing recognition that addresses food safety issues and other uncertainties. This study conducted to identify the level of awareness towards consumers because they had little knowledge on genetically modified foods and they also cannot assess genetically modified foods by themselves. Furthermore, this study will provide the firm's top management to more concern about genetically modified and also provide knowledge for the further research. A 46 questions consumer survey has been prepared with a total 351 respondents from urban and 100 respondents from rural had been collected emphasizing on Awareness of the consumers about genetically modified foods, the acceptability of GMFs by consumers and legislations and information sources were assessed in the questionnaire. The results show that the level of genetically modified food in both urban and rural area is very low. Consumers failed to indicate or identify its appearance

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due to lack of labeling in packaging. The study showed that the consumers were not aware which products contain genetically modified.

**Keywords:** Consumer Attitudes, Consumer Perceptions, Genetically Modified Foods

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**A.10**  
**CRSE 002**

**Customer Journey:  
Tracking a usable shopping centre**

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This paper portrays the tracking of Malaysian shopping centre's usability through the journey of customer's experience. With the competitive landscape of our retails industry, the usability evaluation is critical in delivering the quality design through the usability key factors; effective, efficient and satisfaction. The evaluation of usability is done through the qualitative method known as 'voice out loud' walkthrough which extricated from the user's experience. The perceptions that attributed from those experiences evoke the thoughts, attitude and emotions. A focus group of eight respondents were recorded by voice recorder during their journey in one large shopping centre in Malaysia which is known as Mid Valley Megamall. Mid Valley Megamall is recognized as one of the largest shopping centres in the world, and thus it is the best place to extract the usability criteria due to its complexity. The focus group was asked to voice freely of their feelings along with their journey. Their journey then was mapped according to phase process perspective. This study revealed how the customer reacts to the shopping centre environment and design along the journey. The aim is to highlight the usability dimensions that critical in Malaysian shopping centre design and presented in accordance with the phase of customer's experience

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journey. The findings revealed that functionality, accessibility, visual design, memorability, learnability, comfortable, business mix and atmosphere are significant in creating the framework of Malaysian Usable Shopping Centre.

**Keywords:** Usability, Shopping Centre, Journey, Satisfaction

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**A.11**  
**CRSE 003**

**Tendency and Behaviour of Furniture Usage of  
Consumers in Thailand for Business Strategy  
Formation for Sustainable Environment**

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The furniture industry is an industrial cluster that mainly utilises natural resources in its manufacturing process. Furniture is one of the products whose manufacturing, and consumption volumes are continually rising due to urban expansion, population growth, and residential and office building market growth. Also, since furniture is a product that is involved in daily life, there are various types of demands based on the consumers' different purposes of usage. However, now the life cycle of furniture products is likely to be shortened and the rising number of product replacements before the end of its life cycle has caused an increase in the amount of waste, which is difficult to manage and leads to environmental impact due to the ineffective consumption of human beings and changing consumer behaviors through different disposal. The formation of the change process leading to sustainable consumption is related to consumer behaviours and consumption patterns as well as awareness of environmental aspects. The objectives of the research are to study tendency of furniture usage and analyse environmental awareness of consumers in Thailand to lead to the formation of business strategies and design methods of product-service systems (PSS) based

on an emphasis on environmental benefits and sustainable consumption patterns. The instruments used in the study include a survey questionnaire and an interview protocol. The data collection was conducted using a survey questionnaire which was sent to consumers who are the end-users of its products or services in Bangkok. The data analysis was conducted for frequency distribution, percentile means, and standard deviation and the data was subsequently presented in tables and discussed. The findings of the study reveal that the majority of consumers have a tendency and to using furniture, They are aware of the impact on the environment at a moderate level. The environmental awareness and attitudes of consumers toward the trends and needs of furniture in different aspects are summarized as follows: (1) Dematerialization (2) Effective usage furniture (3) Reducing the impact on the environment such as chemical pollution, increasing the amount of waste and The use of energy. (4) Services are supporting the product, Consumers have a high level of demand. The tendency of providing additional services from the furniture they buy in the future is most likely to be.

**Keywords:** Environmental Friendly Furniture; Design for Environment; Sustainable Consumption; Behaviour of Furniture Usage

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**A.12**  
**CRSE 004**

**The Determinant of Consumers' Socio-Economic  
Attributes on Their Choices of Environmental Friendly  
Furniture style**

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The relationship between supply and demand caused by market mechanisms. The consumers' demand can be used to determine the supply from the manufacturer. Because in a capitalist system, the consumer demand is an important factor to the manufacturers. If the consumers require then the manufacturers have to improve their environmental quality of the products and services. The manufacturer would have to focus on the production process. This process is costing up to 60%-80% of the total cost. The product design process is the most important process, to reduce the environmental impact. The purpose of this research is to analyses the determinant of consumers' socio – economic attributes on their choices of furniture style to the environmental friendly furniture design development. This research points to the differences in socioeconomic status of consumers as well as their attitudes, lifestyle, and behavior. And the physical characteristics of the residence. It determines the style of furniture requirements. (furniture style is traditional and modern furniture, eastern and western furniture style, natural and synthetic materials used in production, high technology, and cheap technology in production, warm colors and cool

tones of furniture and price). This is a test of the demand for different furniture style according to consumers' socio – economic attributes. This research is a quantitative research. The population and sample are consumers who buy furniture in the furniture showroom. This research is using the questionnaire as a tool for study. The questionnaire was distributed to the respondents. The questionnaire has a total of 100 samples, and are selected by random technique. The study found that overall furniture style requirements. Consumers demand modern style furniture, Western style, natural materials demand to produce, high technology in production, warm colors in the moderate. So environmental friendly furniture designers. The economic and social factors of each consumer group should be considered to meet the demands of the furniture style and as a guide to the development of environmentally friendly furniture design.

**Keywords:** Furniture style, Environmental Friendly Furniture, Consumers' Socio-Economic, Attributes

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# **Children & Youth Environment**

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**A.13**  
**CYE 001**

**“I have faith...”: An Exploration of Hopefulness in  
Providing Care for Children with Learning Disability**

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Background of the study: Many mothers are hoping for their children to be successful in life. Mothers' hopes may change since they may experience many dramatic changes in life circumstances, such as changes in lifestyle, social life, family plans, expectations, different work life and emotional well-being as a result of caring for a child with learning disability. Subsequently, negative hopes may affect mothers' life, while mothers who are living with positive hopes may have a good health, comfort and happiness experienced. However, there is a limited study that highlights regarding hopes which may influence well being experienced. This present study may reveal hopes among mothers who are providing care children with learning disability, which it is, still remain ambiguous.

Aims: The aim of the study is to explore the experiences of mothers' hopes towards their children with learning disability.

Methodology: A semi-structured interview was conducted with twelve mothers which were data saturation achieved. The interview was recorded and transferred the data into verbatim transcription. Transcribed data were analyzed by using six stages of the Interpretative Phenomenology Analysis. Findings: The finding revealed that two

superordinate themes emerged: "I have faith..." relating to subthemes expectation to have improvement and happiness life while "I'm expecting..." relating to subthemes feeling of despair towards their children with learning disability.

Implications: A positive hope facilitates positive influence among mothers in providing care children with learning disability. The mothers' hopes also give influences to the level of determination and children ability of the children with learning disability. Later, it provides a better quality of life amongst mother who raising children with learning disability. The finding of this study highlighted areas of concern as well as deeper understanding among health professionals especially occupational therapist in order to provide and enhance the quality of intervention for both mothers and children with dyslexia in the future.

**Keywords:** Mothers, Hopes, Learning disability

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**A.14**  
**CYE 002**

**Development of Post-Occupancy Evaluation for  
Autism Centre in Malaysia: Exploring the physical  
learning environment**

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Autism Spectrum Disorder (ASD) is a neurological disorder that affects a child's developmental disability causing social, communication and behavioral challenges. An individual with autism often affects a child's ability to communicate, understand language, play and relate to others. They also identified that the symptoms as such repetitive activities, stereotyped movements, struggle to adapt to the environment and the daily routine and unusual responses to sensory experiences. Learning environment has become significance because research has proven that the quality of educational facilities affects learning outcomes and the individuals within the building. Research also has proven that children with ASD improving whenever receive education and conducive learning environment capable of stimulating an autistic child to engage in the learning process and can influence the behavior of autistic as well as to assist in the development of their skills or cognitive perception. Unfortunately, in Malaysia, there is a lack of published work on the provision of the quality physical learning environment. The scope of study involves early childhood education at in Pusat Permata Kurnia, Kuala Lumpur that facilitated by the Malaysian government. However, how far the status quality of Autism Physical Learning Environment? This research objectives to identify special autistic needs for design

consideration, to explore the current Autism Center facilitated by the Malaysian Government. The paper aims to develop a Post-Occupancy Evaluation (POE) of Autism Physical Learning Environment. Perhaps, this could ultimately help designers during their design stage and help to gain better understand the variables of certain school design features and school facilities. It is hoped that this POE could contribute towards the creation of a quality environment for autistic children within the Malaysian context and as a lesson to be learned for designers to identify the quality of the physical learning environment that accommodate the needs of autistic children.

**Keywords:** Autism, Physical learning environment, Post –occupancy evaluation(POE)

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**A.15**  
**CYE 003**

**Incubation Base of Indigenous Baseball Dream: A  
Case Study of Fantasy Association in Luye, Taiwan**

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The objective of this essay is to examine the baseball incubation base is facilitated by governance failure of regional industrial policies as opposed to giving an opportunity to initiate an alternative way of living for indigenous in eastern Taiwan. Compare with eastern Taiwan, and the Taiwanese government has financed 90% of national budget into Western Taiwan, so called west corridor. It boosts the west corridor becoming the center of development region in Taiwan. This uneven development strategy accelerates migration from eastern area to west corridor for better jobs, lifes, and futures. Rest of the people, who decides to stay, suffers a serious depression in every city in eastern Taiwan.

A historical accident, however, lets baseball become a successful substitution way for the remains, who desperately fight for survival, put their children in baseball incubation base, and hope the toddlers can be a baseball player to get the scholarship to waive their tuition. Even more, signing a big contract with professional baseball club to overturn their family's poverty. In retrospect, The indigenous have been regarded as natural born baseball player due to their physiological state that can always dominate baseball games since the 1920s. For instance, NOKA(能高) and KANO(嘉農) are well-known because of the outstanding performance. Later on, KMT (國民黨) government also followed the same approach. Furthermore, The KMT government established sports policies to advance capabilities of Taiwanese baseball, for example, encouraging schools recruit talented baseball players to win little league tournament title for obtaining sufficient public funding, and providing the public scholarship for those prospects who are willing to play for high school, even college. Most of the families still make

a try at their kids in spite of baseball is a highly competitive sport, and only a few of them can achieve their dream.

Fantasy Association is one of the baseball incubation bases for the children who are from disadvantaged family are between 7 and 15 years old. Nevertheless, their purpose is to solve economic externality of uneven development in eastern Taiwan, so they integrate baseball and moral education against the uneven development and demonstrate the baseball is not only winning the game. Based on their intention, they have established a local baseball and built up a tutor system to the children for improving their grade, reforming baseball training philosophy since 2013. Therefore, this paper will use qualitative research, including the participant observation, interview method, as the research methodology to map out the relation between indigenous baseball and regional policies in eastern Taiwan.

Keywords: baseball , indigenous , industrial policy , regional policy

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**A.16**  
**CYE 004**

**Mental and Physical Health Attributes of  
Preadolescent Primary School Children in Malaysia: A  
Conceptual Review**

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Schools are benefit yielding organizations with a crucial function for the development of the nation's future through education, but given the multiple negative factors lurking within their social environment, this could be jeopardized. Nowadays, the increasing number of children and adolescents participating in high risk behaviours such as substance abuse, premarital pregnancy, and problematic behaviours such as bullying and smoking are alarming. Worldwide, it has been proven that tobacco, alcohol, marijuana and psychoactive drugs are top 20 factors causing ill-health. The advents of recreational drugs with multiple substance abuses alongside rave lifestyle open the doorway for young people to be exposed and involved in the misuse and abuse of substances. The National Anti-Drugs Agency (AADK) has records of school children as young as 13 years of age to be involved in psychoactive drugs. Currently, most preventive and school health programmes are stand-alone and delivered separately, not to mention it were delivered not targeting the high risk group of children. Thus, the effectiveness of these programmes in improving physical and mental health, and preventing social problems is questionable and thereby

renders the findings inconclusive. Therefore, the purpose of this study is to identify mental and physical health attributes of preadolescent primary school children and to explore children and teacher concerns and issues related to mental health, behavior, social and physical health problems. The conceptual framework of this study is constructed based on the Biopsychosocial Model (Engel, 1977). The BPS model is an interdisciplinary model that assumes a complex interaction of biological, psychological and socio-cultural factors can leads health and wellness. The propose research design is a mixed method approach which is “concurrent triangulation strategy”. This study will be conducted among 385 primary school children aged 10 and 11 years old in primary school in Selangor, Malaysia. Sampling technique used for quantitative data was disproportionate stratified sampling. For data collection, self-administered questionnaire and focus group discussion will be carried out among school children, teachers and school counselors. Based on the findings of this study, a comprehensive model of mental, physical and psychosocial attributes of preadolescent primary school children in Malaysia will be proposed. In relation to the Malaysian healthcare system, the application of this model will ultimately improve the school environment, quality of interventions and programmes targeting school children as these interventions will be developed tailored to the children's needs.

*Keywords:* Mental health; Physical health; Preadolescent; School children.

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# **Elderly Environment**

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**A.17**  
EE 001

**Behavioral Program and Exercise Training for Older Persons: Effect on Cardiorespiratory Fitness**

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Background: Several studies have revealed that it is a strong and significant influence on physical activity and exercise participation in older persons, in term of age-related cardiorespiratory functions. In aging, a declining in voluntary physical functions may decrease in exercise tolerance, muscle strength, and fatigue ability. Regretfully, most of the older persons do not participate in any physical activity or exercise for a long term, instead, they behave sedentarily. Objectives: Therefore, this study determines the influences of a behavioral program and exercise training on cardiorespiratory fitness in community-dwelling older persons. Methodology: Sixty-three participants (age = 63.8±4.5 years) were enrolled in this controlled quasi-experimental study. They were divided into (1) EBG [6-week exercise intervention followed by a 5-week behavioral program], (2) EG [6-week exercise intervention as EBG], and (3) CG [control; routine activities]. Cardiorespiratory fitness was measured by using a performance-based outcome measure, six-minute walk test (6-MWT) at baseline, 6<sup>th</sup>, 12<sup>th</sup>, 18<sup>th</sup> and 24<sup>th</sup> weeks. Findings: This study highlighted significant differences due to time effect [ $F(2,10,125.83) = 22.14, p < 0.05, \eta^2 = 0.27$ ]; and significant effects were found in the group factor [ $F(2,60) = 17.29, p < 0.05, \eta^2 = 0.37$ ]. There were significant interaction effects between time and group [ $F(4,19,$

115.83) = 36.07,  $p < 0.05$ ,  $\eta^2 = 0.55$ ]. Those in the EBG presented with significantly higher mean changes for cardiorespiratory fitness in comparison to others (all  $p < 0.05$ ). Implications: Older persons who received a behavioral program presented with better involvement in exercise for a long term, that will help in improving their level of cardiorespiratory fitness. Thus, it would improve their overall quality of life among older persons.

**Keywords:** Behavioral, Cardiorespiratory fitness, Exercise, Older

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**A.18**  
EE 002

## **Objects, Spatial Elements and Elderly: Exploring dependency in domestic space**

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This paper tries to explain the relationship between the roles of objects, spatial elements, and the dependency of the elderly. As people continuously grow and get old through time, their physical and physiological conditions including their ability to move in space are affected. Elderly people have a considerably high dependency towards things in their surrounding environment when they move around. To simply walk, for example, in order to safely move from one point to another, an old person might need particular objects to help him. Other difficult tasks might even become a huge challenge for elderly. This dependency then triggered the overall idea of what it is actually to have a good quality of life, whether being dependence, even just to move, is considered as an inadequate life quality. Thus, the importance on how the objects and their conditions within any particular spatial settings relate to the safety of the elderly and affect their dependency becomes necessary to be discussed. Central to this importance, this paper focuses on this very idea of dependency of the elderly people towards their surrounding through a discussion which explores the domestic space as the contextual limitation of the study. Through a small scale examination, this qualitative study is divided into two parts: 1) Analysing how the elderly perform in particular domestic space. Through this stage of the

study, how the objects and spatial elements exist in the domestic space perform are revealed, exposing which ones take roles as the obstacles and which ones take role as the aids. 2) Examining the dependency of the elderly. This stage of the study results in the overall understanding of the dependency of the elderly towards their surroundings that is unrestricted yet examinable. Unrestricted means that objects and spatial elements are unlimited in potential to dependent with. Examinable means that the understanding of the dependency itself is potential for further discussion and exploration as it bears certain characteristics which would be useful to determine spatial requirement for space for elderly, including but not limited to domestic space design. Overall, the study reveals that being dependence does not necessarily mean that one is being inadequate with his life quality. Instead, being dependence in this study means being more explorative to the potential of objects and spatial elements.

**Keywords:** Elderly, Domestic space, Spatial elements, Dependency

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**A.19**  
**EE 004**

## **Promote Ageing-in-Place: Design of residential buildings for older people in China**

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People over the age of 65 are a rapidly growing proportion of the world's population. Nowadays, 8.5 percent of the world's population (617 million) are aged 65 and over. This percentage is projected to jump to nearly 17 percent by 2050 (1.6 billion). People are living longer, but we need to ensure that people are living healthier for longer and with independence and dignity. In China, the population has been ageing rapidly. When discussing the needs and preferences of an ageing population in the Chinese context, it is necessary to contextualise 'ageing-in-place'. It has been defined as remaining in the community, living with some level of independence, rather than in residential care. The majority of older people prefer to stay in their homes aiming to achieve a better quality of life for longer while maintaining and protecting independence, autonomy and dignity at home, and connecting to social support, including friends and family. Additionally, having people remain in their homes and communities for as long as possible could help in maintaining the social connection, social supports and services. In addition, ageing-in-place is the most common type of ageing in China, because of the traditional views of ageing and the lack of care facilities. Therefore, the design of age-friendly residential buildings and neighbourhoods become a very

important factor potentially leading to significant improvement in older people's health and quality of life. This paper aims to present the current situation of the ageing population in China by analysing existing design standards and literature and to understand older people's housing choices. A qualitative approach will be used for this study involving stakeholder interviews. i.e. architects and interior designers. The findings of this study could be important to fill the knowledge gap of the ageing models in China and to establish the physical design factors, challenges and potentials of residential building design for older people. Furthermore, the information produced by this study could potentially benefit a range of stakeholders, i.e. decision makers and local governments, and also could be applied to other age-friendly residential models in China and beyond to guide better design and to meet older people's needs and requirements in the future.

**Keywords:** ageing, age-friendly, residential building, spatial design

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# **Health / Healing Environment**

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**A.20**  
**HE 001**

## **Caregiver Burden Inventory – Malay Version: Cross Cultural Adaptation and Psychometric Properties among Caregivers of Individuals with Mental Illness**

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Transitioning patients with illness from hospital to home care is a stressful event for caregivers. In the context of mental illness, a great deal of research has been conducted to identify the burden experienced by caregivers of individuals with severe mental illness in the community. Studies on caregivers have shown that caring for individuals with severe mental illness often impacts all domains of the caregivers' life including physical and emotional health, significant relationships with other people, persistence of suffering as well as the direct and indirect cost undertaken by the caregivers. In relation to the instruments used, most scales intended to measure burden such as the Caregiver Burden Inventory (CBI) were developed in English-speaking countries. Taking into account that Malaysia is a multicultural society with caregivers coming from different ethnic backgrounds and speaking different languages, a valid and reliable version of this scale needs to be used to assess the caregiver burden for its population. Thus, the purpose of this study was to determine the psychometric properties of the Malay version of the CBI

by evaluating the validity, internal consistency reliability, and performing a factor analysis. Prior to data collection, the CBI was translated to Malay language using a guideline for a cross cultural adaptation and translation of a questionnaire. After back-to-back translation, five experts completed the content validity index with item agreement of 0.88 to 1.00. A quantitative, cross sectional design was used and samples were selected using non-probability, convenience sampling technique. Samples of 201 caregivers of individuals with mental illness were recruited from two psychiatric outpatient clinics. Internal consistency of the Malay version of the CBI was satisfactory, with overall Cronbach's alpha value was 0.95 and alpha value for each subscale ranging between 0.86 and 0.93. The reliability of the CBI also was assessed using the mean inter-item correlation and corrected item-total correlations. The corrected item-total correlation were also within the acceptable ranges ( $r = 0.47$  to  $0.79$ ). The five-factor structure of the Caregiver Burden Inventory was examined using a Confirmatory Factor Analysis (CFA). All items loaded significantly on to their respective factors and the standardised factor loadings were high, ranging from 0.58 to 0.92 with only one below 0.60. Results from this study suggest that the Malay version of the CBI can be used as a reliable and valid measure for examining caregiver burden among caregivers of individuals with mental disabilities.

Keywords: Caregiver Burden, Mental Illness, Malay version

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**A.21**  
HE 002

## **Psychological Influence towards Health Consumers Intention to use a Web-based Health Information Service**

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The main highlight of this paper is regarding the web-based health information service which has been created particularly to educate the health consumers regarding health issues. This study was conducted to investigate the role of Health Belief Model as psychological predictor for web-based health information service's usage intention particularly on a national web-based service that is MyHEALTH Portal. This study utilized an online survey among the identified users that accessed the portal hosted on the official MyHEALTH Portal website. A convenience sampling technique was applied in recruiting respondents involving 223 respondents. The analysis involved two stages of survey data analysis in which the first stage dealt with data preparation conducting a preliminary analysis while in the second stage, a confirmatory factor analysis was conducted to assess the measurement model followed with the structural model to confirm on the proposed hypotheses. With regards to the psychological predictor of health consumers' intention to use the portal,

results showed external cues did not significantly influence the relationship while outcome expectations and internal cues significantly influenced portal-intention to use. The findings would help Ministry of Health in identifying significant psychological factors that influence the portal usage. This would allow them to re-strategize the portal's marketing and promotional works therefore, it can be maximally used by the public to educate them on adopting healthy lifestyles.

**Keywords:** Health consumers, Intention to use, MyHEALTH portal, Web-based health information service

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**A.22**  
**HE 004**

**Success Factors of Outsourcing Facilities  
Management Services in Private Hospital of Malaysia**

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Many countries have embraced the use of outsourcing as a way of providing public services for the public good, particularly in the healthcare sector. Public health care institutions are turning to outsourcing in an effort to maintain high standards of care and reduce the cost of health provision while addressing economic realities. In this same vein, the extent of use of outsourcing in health care has been widely investigated. From the review of literature, it was identified that health care organisations outsource a variety of services ranging from specialist services, logistics services and facilities management (FM) services. It was also discussed that major benefits from outsourcing of these services are improved performance, cost saving, increased focus on core business and improved quality of service. Very little research has been carried out on success factors of outsourcing in the private sector particularly in the healthcare sector. This paper reviews available literature on success factors of outsourcing in a number of sectors and attempts to describe the success factors in outsourcing FM services for the private healthcare sector. There are various factors that lead to the success of an outsourcing. However, the review of the literature also revealed that outsourcing relationship is the main factors to outsourcing success. The success of outsourcing depends on the effective provision

of services by service providers. Although outsourcing is gaining popularity, and clients expect a satisfactory performance from service providers, the number of reported cases of failure is increasing. Organisations should thus take care when deciding upon outsourcing arrangements. To execute outsourcing process effectively, FM professionals of clients and service providers should be skilled in negotiation, finance and interpersonal communication. A pilot study was carried out by distributing questionnaire to twelve (12) respondents consist of the facility managers and the service providers in private hospital of Klang Valley area. A pilot study identified that most of FM services in private hospitals outsourced to the service provider. In addition, it was also discovered that the most factor affecting the outsourcing relationship is coordination.

**Keywords:** Facilities management services; Healthcare; Outsourcing; Outsourcing relationship

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**A.23**  
**HE 005**

**The Association of Awareness and Knowledge of  
Diabetic Retinopathy with Age and Residential Area In  
Selangor**

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As the prevalence of diabetes mellitus continues to arise, retinopathy remains to be the major ocular complication that may lead to vision loss. In some countries, the awareness of diabetic retinopathy among the local population ranged between low to moderate and only small percentage of them seeks for an eye examination. The awareness and knowledge of diabetic retinopathy were determined. The association of the awareness with age and residential area were also being investigated. A cross sectional study was conducted in selected urban and rural area in Selangor. Open-ended questions were used to interview 172 respondents (age range: 20 to 70-year-old). Out of 7 questions, 1 question addressed the awareness and 6 questions asked regarding their knowledge of diabetic retinopathy in term of general eye diseases they might know, the signs and symptoms, sources of information for diabetic retinopathy, preventive measures and risk group of diabetic retinopathy. It was found that 49.4% of the respondents were aware of

diabetic retinopathy. The highest awareness was among those in 50's. Diabetic retinopathy was in the 6th ranking of eye diseases known by the respondents. The majority reported blurry of vision as the symptom and most of them knew about diabetic retinopathy from the history of the family of having diabetic retinopathy. The awareness was associated significantly with the age among urban and rural residential population [Chi square test:  $X(4, N = 172) = 19.71, p = 0.001$ ]. No significant association of awareness with residential area was revealed [chi-square test:  $X(1, N = 172) = 1.88, p = 0.17$ ]. However, in every age group, the awareness was higher in those who reside in urban than in rural area. Only half of the selected population was aware of diabetic retinopathy. Health education programs and campaigns can be suggested to increase the awareness of diabetic retinopathy among the population. Therefore, early complications of the diabetic can be detected and prevention can be secured. This might decrease the prevalence of blindness and low vision that cause by diabetic retinopathy.

**Keywords:** awareness, knowledge, diabetic, diabetic retinopathy

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**A.24**  
**HE 006**

**The Effect of Different Locations of Stimulated Central  
Vision Scotoma on the Quality Of Reading**

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As a person read, the eyes move to extract information from the printed text. The quality of reading became disrupted when the field of view was obstructed by the scotoma, which the depressed area in the retinal region. The scotoma usually happened at the central retinal but it can also occur at any location depends on type and pathophysiology of the ocular diseases. The effect of reading speed and eye movements were compared between different locations of stimulated central vision scotoma i.e at the inferior, superior, temporal and nasal region. Eleven participants with normal vision (age range: 23 – 26 years) were stimulated using a goggle. The central scotoma stimulation was a circular disc subtended about 1.5° of visual angle. Based on the calculation, it was approximately 10mm in height at the 40cm reading distance. Normal vision condition without stimulation was included as control group. The Malay-language reading passages were used as reading stimuli in this study. The passage contained 1 paragraph, 4-5 lines, and 50 words. The size of print was N8 or equivalent to 0.4 LogMAR, which represent the newspaper print size. The passages were printed on the

matt surface white paper with high contrast. The time to read the Malay passage was recorded and any error made were noted. The reading speed was quantified as correct words per minute (cwpm). During reading, the eye movements were tracked using 3-D video-oculography (3D-VOG). The eye position during the torsional eye movement measurement was at range of  $\pm 20^\circ$  horizontally and  $\pm 20^\circ$  vertically. The eye movements were determined as a number of fixation and number of regression made while reading. The reading speed showed a significant difference ( $F(4,54)=3.17$ ,  $p=0.02$ ) between different locations of central scotoma stimulation. The reading speed with the inferior region stimulated scotoma gave the slowest reading speed ( $102\pm 16$  cwpm) compared to the others. However, no significant different was found in eye movement pattern during reading in term of a number of fixations ( $F(4,54)=0.61$ ,  $p=0.65$ ) and number of regression ( $F(4,54)=0.47$ ,  $p=0.47$ ). The presence of central scotoma and the location of defect affect the quality of reading. Scotoma at the inferior region might cause a person had difficulty to track next lines of the text. As the scotoma obstruct the central field of view, the eye tended to slow down the reading in order to allow better understanding of the passage.

**Keywords:** reading speed, stimulated scotoma, central scotoma, eye

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**A.25**  
**HE 007**

**The Quality of Life of Hospital Inpatients:  
Exploring Visual Sphere Based on Seeing Capacity**

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The quality of life of inpatients in the hospital is important because it could affect the healing process. The patient's area in immobile condition and their spatial experience is most dependent on visual experience. This paper explores an aspect of the quality of life of inward inpatient by exploring the visual sphere of the patient based on a coordinate system that relates to a superior and inferior area of seeing capacity. This paper intends to study the visual sphere, which is defined as visual information based on one advantage point of the immobile patient in seeing experience which established a visual surface into a visual sphere. Data of Visual Sphere was identified as a collected scene from a series of visual degrees of eye movements in the patients seeing capacity. In each of these series, a visual representation is mapped into a coordinate system of a visual sphere. This coordinate mapping could reveal the relationship of the area of superior and inferior of seeing capacity and the potential area of the visual sphere. Each scene was collected with the captured image through a point of view of a camera in a 3D simulation using Rhinoceros. The image analysis assesses each scene in a series of visual degrees uses the Matlab Calculate Region Properties Using Image Region Analyzer. The most effective of series of the scene in a coordinate system of the visual sphere are identified through the

maximum level of the area of superior and inferior of seeing capacity. The potential level of the relationship between the most effective of a series of scenes and the maximum level of the area of superior and inferior is influenced by the highest degree of the visual elements that are attached to the surfaces. These findings provide new evidence for relating the configuration and visuospatial behavior in the interior design of a hospital, by suggesting that the highest level of the capacity of seeing determined the potential visual surface of inward patients.

**Keywords:** Inpatients, Visual Environment, Visual Sphere, Visual Degrees.

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**A.26**  
**HE 008**

**The Role of Social Support Environment in Medication Adherence among Individuals with Type 2 Diabetes Mellitus**

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The National Health Morbidity Survey (NHMS) conducted by the Ministry of Health in Malaysia reported that the prevalence of Malaysian with diabetes mellitus (DM) is 11.6% and 14.6% for individuals age 18 and above and 30 and above respectively. Adherence to medications is an important aspect in patients' management as many studies reported that non-adherence to medication could lead to hospitalization and higher mortality rates among this population. However, study by Rosland (2009) suggested that strong support from families was associated with better glycemic control in individuals with DM. Thus, this study aimed to determine the prevalence of non-compliance of medication and to examine the association between medication adherences with social support among patients with Type 2 DM in Malaysia (n=173). A cross sectional study was conducted using a self-administered questionnaire which consists of three parts; socio-demographic data, the Morisky Scale to measure medication adherence and the Medical Outcome Study Modified Social Support Survey (MOS MSSS). Results showed that 2.4% of the total number of patients demonstrating a low level of compliance towards the medication. Based on the findings, the most common types of social support received by patients was affectionate support which has

been proved throughout previous studies to have effect on DM patients' quality of life. Surprisingly, the lowest type of social support reported by the patients was emotional support. There was a significant positive correlation between medication adherence and social support that has been analysed using Spearman's correlation coefficient ( $\rho=0.154$ ,  $p=0.043$ ). Finding of this study was in agreement with previous studies that social support was the main determinant of compliance to medication. Among all the sources of social support, doctors (physician) were selected by patient as the main source of support followed by spouse, children and nurses. Findings from the present research contribute to the growing evidence on the role of social support environment towards medication adherence among individuals with Type 2 DM. Thus, future research regarding the development of interventions on importance of social support and medication adherence is suggested among this population.

*Keywords:* Diabetes mellitus, medication adherence, social support, social environment.

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**A.27**  
**HE 009**

## **Understanding Wayfinding Experience of Hospital Visitor through Tours and Maps Analysis**

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This paper is a part of a doctoral research that studies visitors' wayfinding within a hospital environment. Wayfinding or how patients and visitors find their way to a destination is an important aspect of healthcare design to support patients'/visitors' efficiency, safety and well-being (Carpman and Grant, 1993). Assessing wayfinding from various approaches are needed to understand the process better to provide a supportive environment for wayfinding. This paper proposes a spatial narrative approach in understanding the spatial experience of hospital visitors while they find their way through a building environment. Narrative actions involved in wayfinding journeys are explored and analyzed using tours and maps reading (de Certeau, 1984) as analysis tools. The study aims at gaining an understanding of how spatial experience of visitors are organized while they are moving from place to place to reach a destination.

This study is based on an observation of visitor's wayfinding journeys in an outpatient area of a General Hospital in Malang, Indonesia, conducted by ten participants assumed as new visitors. The video and voice recordings of each journey were translated into textual narrations that describe every sequential actions and operations conducted during the

journey. Each narration then is analyzed to specify the 'tours' and 'maps' components that de Certeau suggested as elementary forms of a spatial story that organize spatial experience (de Certeau, 1984 p.116). The 'tours' component described a discursive series of operations that prescribe the action of movement, while the 'maps' component described what people see and think as the knowledge of the order of places.

This study reveals that wayfinding, as a spatial experience, consists of both itinerary and spatial knowledge. These two aspects cannot be seen separately because they always relate to and influence each other. Understanding hospital visitors' wayfinding spatial experience comprehensively can expand our knowledge for designing a supportive health care facility's environment.

**Keywords:** wayfinding, spatial experience, tours and maps, narrative

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# **Hospitality / Tourism Environment**

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**A.28**  
HTE 001

## **Evaluation of Customer's Satisfaction Towards The Dimension of Service Quality in Hutan Lipur Sungai Congkak**

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Recreation activity based on recreational forest has risen as one of the important industries in the Malaysia economy since the last several decades. This area has a great potential for future development predominantly in this modern trend where people are more concern about living a healthy and dynamic lifestyle and being close to nature. A better understanding of the quality of service is considered as a crucial factor to enhance tourism success and is likely to ensure satisfaction of visitors and possibility of getting return visits. In today's competitive environment, service quality is crucial as one of the factors for service satisfaction at a recreational forest since, different customers have a different expectation based on their knowledge or products and services (Reisig & Chandek, 2001). This can be implied that customers may estimate the service performance that ought to be. If the service performance meets or exceeds customers expectation, the customers will be satisfied. Increasing number of visitors towards the recreation activity in forest area had influenced the authority for the needs to improve the service quality provided by the recreational forest in

Malaysia. The evaluation of service qualities at the forest will be able to entice more people from a wider area to fulfil their recreational needs. However, the increasing rate of the visitors may also contribute a threat to the natural resource and the facilities at the recreational area. This study was conducted using SERVQUAL model which consisted of five major dimensions; Reliability, Responsiveness, Assurance, Empathy and Tangible. The instrument of this survey used is questionnaire method to determine customer's expectation and satisfaction of service quality at Hutan Lipur Sungai Congkak. It was chosen as the study area since it is a popular recreational forest in the Hulu Langat district of Selangor state. The respondents were selected through a simple random sampling among the visitors. The finding shows that service quality directly impacted tourist satisfaction in the five aspects of service quality. Hence, the results of this study provide important theoretical implications for nature-based tourism managers.

**Keywords:** Recreational Forest, Service Quality, Recreation, Visitors Satisfaction

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**A.29**  
HTE 002

**Marine Tourism Activities towards the Quality of Life  
Among Local Community at Pulau Pangkor, Perak**

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Marine tourism is a key global factor contributing to the growth of the tourism sector in Malaysia. The sector provides a primary source of income employment and wealth to the country and most importantly focus on the country's administration with the establishment of Ministry of Culture, Arts, and Tourism in 1987. It has been acclaimed that Malaysia offers aesthetic value, an outstandingly beautiful island in the world and rich biodiversity which provides beneficiary to the economic aspects of the local community development and the business industry. Pulau Pangkor was chosen as the study area since it is a major tourist attraction in Perak and is currently moving towards a world-class tourism centre. The growth of this industry brings impact towards the environment, specifically the environment attributes of islands. However, these marine coastal areas are among the most threatened habitat in the world. These are due to over-exploitation on marine tourism activities, excessive admittance of tourists, unmonitored activities which give possible damage and impacts to the economic, socio-cultural, and environmental. Marine tourism activities can also cause loss of biodiversity in many ways more specifically, adverse impacts on the local community development. This study was conducted using questionnaire survey to identify the types of local tour business involved in marine

tourism and its impacts towards local community development. The respondents were chosen through a simple random sampling among the local community. The questions in the survey are in the form of a closed-ended question which consists of four sections. The finding shows that marine tourism involving entrepreneurial activities has a high impact on the socio-economic development of the local population and moderate impact to the environment. Hence, the results of this study can serve as inputs to the Ministry of Tourism Malaysia and to the Perak State Government specifically in developing efficient and effective strategies to promote Pulau Pangkor with minimum effects.

**Keywords:** marine tourism, environmental sustainability, local tour business, local community

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**A.30**  
HTE 003

## **The Effect of Spiritual Intelligence in Mediating Food-hygiene Practices and Food Service Performance in Training Camps**

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Recent research has been focusing on intangible issues such as spiritual intelligence (SQ) in hospitality business contexts. Consistent with the SQ model proposed by Tischler et al. (2002), this study aims to examine the potential of SQ effects as a mediator between food-hygiene practices and foodservice performance. This study has an objective to identify the SQ level among the food handlers in Peninsular Malaysia. Geographically, the food handlers are divided according to four main regions, namely Northern, Central, Southern, and Eastern in Peninsular Malaysia. The data that obtained through the use of a questionnaire distributed to 816 food handlers. Specifically, the survey elicits information on the SQ, food-hygiene practices, and foodservice performance. The results are drawn from the base of empirical investigation in the training camps in which their activities are consistently monitored by the Ministry of Health Malaysia. Four SQ domains (holistic, challenge, self-conscious, and high-conscious) are

found individually mediated the relationship between food-hygiene practices and foodservice performance (food, service, and atmosphere). Specifically, path coefficient for mediation path between food-hygiene practices and foodservice performance reveals that there are mediation effects as empirical evidence supports. The food-hygiene practices have direct influence to perform with the SQ as mediator. The positive associations between these variables have shown that empirically the establishment of spirituality and practicality are interconnected to underlie and support the food handlers' thoughts of self-development and success at work. With the large and valid datasets, the positive results reveal that the model proposed in this study could be generalized to the routine practices-and-performances of other foodservice institutions. Producing and presenting quality food, services, and ambiance reflects a sense of obligation in helping others through correct practices while keeping account of one's good deeds for the benefit of one's journey towards the next life. While the current study argues on the effect of four main domains of SQ in mediating the practices in the hospitality business, the future study may consider other SQ criteria that listed in ISIS. The study, however, is limited to the government-controlled food services.

**Keywords:** Spiritual Intelligence, Food-hygiene Practices, Performance, Malaysia

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**A.31**  
HTE 004

**The Relationship between Service Experience Equity  
and Guests' Behavioral Intention at Eco-Resorts:  
A Study Using PLS-SEM**

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Guest experience studies and the consequences towards behavioral intention have gained attention by recent scholars since the experience of guest play a big role in the success of an organization especially in resort setting. This consequently leads to resort businesses focusing on their guests' needs, wishes and desires to make their service hospitable, thus creating a true experience that leads to loyal resorts' guests. It is noted that Malaysia has a remarkable significance of the natural attractions to the tourists. Hence, the government highly increased initiatives to continue developing sustainable ecotourism and balancing the environment and development of resorts. This action makes the resorts owners creating favorable infrastructures in order to provide a memorable experience through the design of their resorts. Subsequently, the importance of the service experience equity is strictly undeniable. However, this issue is minimal considered by scholars and practitioners especially in Malaysia. Therefore, this study attempts to investigate the relationship between service experience equity and behavioral intention at eco-resorts. This study also aims to discover the new experience and phenomenon of ecotourism particularly in eco-resort setting in Malaysia.

There is also an urgency to explain the new model pertaining to the antecedents of behavior intention among the tourists and guests staying at Malaysia's eco-resorts. This study is quantitative in nature and the selection of respondents is based on purposive sampling. With regards to the aim of this study, the result of the hypotheses is tested using partial least square of structural equation modeling (PLS-SEM) and several conclusions were achieved. Noticeably, the exogenous constructs (service experience equity) of this study showed significant influence on the endogenous variable (behavior intention) both individually and collectively. The finding of this study is recommended to enhance the guest experience equity in staying at eco-resorts and foster the remarkable image of eco-resorts among tourist to visit Malaysia.

**Keywords:** Service Experience Equity, Behavior Intention, Eco-resorts, Eco-tourism

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# **Landscaping Environment**

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**A.32**  
LaE 001

**Tree Species Selection:  
It's Relationship with Issues in Urban Areas**

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Trees in urban areas are an invaluable resource. Trees enhance the landscape and give significant environmental benefit thus tree planting become one of the important event on urban lands. To capture the most potential offered by a tree, careful consideration and attention should be given to tree species selection. "Right tree at the right place" is the key to get the benefits offered by the tree. Fail to consider the characteristics and requirement of tree species can cause hazard to properties, vehicles or people. Correct selection of tree can reduce issues related to maintenance cost and increase the urbanites satisfaction on tree planting. Recently, due to development such as expansion of the roads, countless complaints by the public were received addressing problems related to street trees. Some of the complaints were directed to trees such as *Khaya senegalensis*, *Tabebuia pentaphyla*, *Acacia auriculaeformis*, *Peltophorum pterocarpum* and *Pterocarpus indicus*. Thus this study will look into tree species planted along the roadsides and how these species selection contribute to the issues related to landscape planting. Two objectives have been formulated as follows (i) to investigate selection of tree species at selected local councils (ii) to analyse the issues related to the selection of the tree species looking at the public perspectives. A mixed method approach will be applied in the data collection. Three local councils will be selected and in depth

interview will be conducted to gain information on the landscape planting and tree species selection. The public participation in this research is through answering the questionnaire. Field observation is also conducted to determine the tree species. The expected outcomes of this research will be useful in determining issues related to the species selection. Future considerations of the tree species as street planting based on the findings can reduce problems thus increase the quality of urban life.

**Keywords:** Tree species selection, hazard tree, public complaint, local authority

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# **Educational / Learning Environment**

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**A.33**  
**LE 001**

**A Taste of Spatial Character: Quality outdoor space in  
campus landscape leisure setting**

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The landscape is a critical section in spatial development for campus outdoor space. It is mostly related to being a source of the institutional image and the purpose of leisure space to provide an excellent quality of life on campus. Planting composition is one of the elements in the landscape design which fundamentally shape and generate a character of the outdoor space. Previous studies revealed that the landscape could offer an enormous influence on visual quality, student performance and quality of life. As such, there is a need to shape the campus outdoor space with a quality landscape, specifically in planting composition so as to stimulate the engagement of students with the landscape. Optimistically, quality of life on campus could produce quality graduates. But, what are the favourable landscape and spatial characters that stimulate the student to utilise the outdoor campus space for their leisure activities? This paper investigated the preferences and usage of outdoor campus space provided by universities during students' leisure time. The

primary concern is to identify students' favourable space and secondly to analyse the spatial characters campus landscape setting. The data were collected through structured interviews. This study's survey of students at Research Universities (RUs) in Malaysia. There are five listed RUs, however only three RUs were selected. This limitation was due to different characters and background of RUs. 20 students from each of the three RUs were interviewed to record their preferences towards landscape setting in their campus outdoor spaces. The results revealed that most of the students' favourite space during their leisure time was influenced by the landscape with exercises facilities, borrowed landscape, the existence of water element and shaded trees. However, the respondents also lamented the lack of maintenance of campus outdoor space, coupled with the lack of attention on the landscape provided. Hence, the study recommended that the selection of plant and the composition is needed not only to reduce maintenance, but also on the safety issues. This study could become a point of reference in campus landscape development to increase holistic graduate through healthy and quality of life on campus.

**Keywords:** Spatial character, landscape setting, outdoor campus space, quality of life

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**A.34**  
**LE 002**

## **Design Thinking: Interior Architecture and Interior Design in Thailand**

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Interior design academic discipline aims to develop “design thinking”. This design thinking consists of accommodating thinking, diverging thinking, converging thinking and assimilating thinking. Two important design thinking of design students are accommodating thinking and diverging thinking. The accommodating thinking means that greatest in doing things, relying on intuition, enjoying seeking new experiences, tend to be risk-taking. The diverging thinking is defined as greatest in imaginative ability and many different perspectives to solve problems. In Thailand, however, the design thinking students who study Interior Architecture or Interior Design is still questionable. There are two different curriculums for Interior Architecture (five years) and Interior Design (four years). This research aims to explore the aspects of design thinking of students from two different curriculums to see how aspects of design thinking of students are different and how the curriculum can improve their design thinking. The research method is based on quantitative research approach and the research design is a survey. A questionnaire is developed from Perry scheme of intellectual development and Kolb's

Experiential Learning Theory (ELT) model in term of social psychology and learning experience to investigate students' design thinking. 200 interior design students will be randomly selected from King Mongkut's Institute of Technology Ladkrabang (KMITL) and Bangkok University (BU) that have two different curriculums. The participants will be selected from the sophomore students (50 students) and the senior students (50 students) of each curriculum. Factor analysis will be used to analyse their aspects of design thinking of each curriculum. Then, both aspects of design thinking from two curriculums will be compared to see what aspects of design thinking are different. The results will indicate the aspects of design thinking of students in Thailand. They will be used to develop teaching and learning skills for Interior architecture and design curriculums. In addition, the findings will be used to create a learning environment that fulfills the personal goal of students to enhance academic achievement and intellectual development.

**Keywords:** Interior Education, Design Thinking, Diverging Thinking, ELT model

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**A.35**  
**LE 003**

## **Learning Activity Design for Fostering Creativity by Using Social Media**

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Learning activity becomes essential in learner-centered approach. Hence, lecturer becomes a facilitator. The traditional learning such as a face-to-face learning within an enclosure environment hardly arises neither active learner nor collaborative work-flow. Especially, in art and design learning that creativity is one of the critical objectives for a learning outcome. Currently, there are several available learning tools that potentially handy for both of learner and lecturer. Social media is one stood out applicable for delivery divert learning content. The fast-paced development its technology is increasing the benefit for collaborative activity and communication beyond physical constraints both time and space.

Typically, Asian-young learners tend to be passive. The elder hierarchy traditional still exists in culture environment. The downside is that these students will not participate in their classroom, with the teacher talks in front, they will keep their voice down. This custom is not the effective way for fostering the creativity, which is the highest learning level according to Bloom's revised taxonomy (Andrew, 2007). By observation, since the booming of social media connectivity. Young learners find a channel for

their generation. These tools open the opportunity for everyone. The youngster used social media to communicate not just their peers but anyone else whose log in a digital realm by using handheld devices. This research aims to utilise social media as a tool for fostering creativity for art and design learner by constructed learning activity that suited to the 21st-century learner. The 21st Century Skills, Problem-based Learning and creativity all are combined to frame the learning activity. The pilot study done by using interview and a questionnaire survey with the target group and the focus groups have been done with experts in 3 groups as follow; 1) learning design management 2) social media communication and 3) creativity. The collected information was analysed and framed with learning methodologies, and later joined with the learning plan for the selected curriculum subject. The result will transform the way to use social media that can be fostered creativity in art and design learning. The design will examine by experts before final used with sample groups who registered the relevant class in art and design department, faculty of architecture, Naresuan University.

**Keywords:** learning activity, problem-based learning, 21st century skills, creativity, social media

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**A.36**  
**LE 004**

**Nutritional Quality of Life among Undergraduate  
Students in Universiti Teknologi MARA Selangor**

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Background: Rapid changes in physical growth and psychosocial tend to make university students to engage in unhealthy dieting habits and have poor nutritional quality of life. Objective: This study aimed to evaluate the Nutritional Quality of Life (NQoL) among undergraduate students enrolled in Universiti Teknologi MARA (UiTM) Selangor, Puncak Alam Campus. Methodology: A cross sectional study was conducted among students from three courses: Health Administration, Health Sciences and Pharmacy. Participants were recruited using convenience sampling in September 2016. Data was collected using self-administered questionnaire. Results: A total of 369 students were participated [female (89.4%); age below 22 years old (72.6%): Courses; Health Administration (26.5%), Health Sciences (41.5%) and Pharmacy (32.0%): college resident (68.8%)]. *Food Impact* was the highest scored domain [3.48(0.69)] and *Social Interpersonal* was the lowest scored by respondents [1.77(0.69)]. Of all factors studied, only course groups showed significant difference in score for all NQoL dimensions ( $P<0.001$ ). Score for *Physical Functioning* was only statistically differ by gender, with male scored higher than female ( $P=0.04$ ). There was

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significant in scores for *Food Impact* ( $P=0.018$ ), *Social Interpersonal* ( $P=0.028$ ) and *Self-Efficacy* ( $P=0.005$ ) between age groups with respondents aged 22 years old and more scored higher than below 21 years old respondents, except for *Food Impact* dimension. Implication: Findings indicated that course/program appeared to make a significant difference in the NQoL of undergraduate students in UiTM Selangor.

**Keywords:** Nutritional Quality of Life, Eating Habit

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**A.37**  
LE 005

## **Perceived Depression, Anxiety and Stress Among UiTM Dental Undergraduates in Clinical Years**

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**Introduction:** The multifaceted nature of clinical years in dental education is like a perfect fusion of healthcare, art and science skills that requires serious reflection. In clinical years, a dental undergraduate will face challenges in transferring theoretical knowledge and pre-simulation clinical skills to treat patients. The details oriented in physical and psychological demands within this educational journey, inevitably leads to psychologically distress and affects the quality of life. **Aim:** The aim of this study was to examine levels of depression, anxiety and stress and the stressors among the dental undergraduates. **Methodology:** 127 dental undergraduate students from clinical years, year 3 to year 5 at Faculty of Dentistry, Universiti Teknologi MARA (UiTM) Sungai Buloh, Malaysia participated in this cross-sectional study, with approval from the Research Ethics Committee, UiTM. Dental Environment Stress (DES) questionnaire was used to identify sources of environmental stress while perceived depression, anxiety and stress was measured using the Malay version of Depression Anxiety Stress Scale (DASS-21). All data were analysed using SPSS® version 18. Descriptive statistics were used to examine the stressors and the occurrence of depression, anxiety and stress. One Way ANOVA tests were used to compare the items scored

between different years of study. The Pearson correlation analysis was used to examine the correlation score between DASS and DES questionnaires. **Results:** Majority of the undergraduates have no depression (55.1%), anxiety (33.9%) and stress (55.9%). Some of the students experienced extremely severe depression (3.9%), extremely severe anxiety (16.5%) and extremely severe stress (1.6%). A significant difference in DES score across different years of study ( $p=0.048$ ). The overall mean score of DES was 90.82 with the highest stress score recorded from the respondents in year 5, followed by the respondents in year 3 and year 4. There was no significant difference in depression, anxiety and stress scores between all the clinical years. There was a significant positive fair correlation between DES and depression score ( $R=0.30$ ,  $p=0.001$ ). Whereas, there was no significant correlation present between DES and anxiety score ( $R=0.10$ ,  $p=0.229$ ); and neither between DES and stress score ( $R=0.14$ ,  $p=0.107$ ). **Conclusion:** This study highlights the educational environment are the main factors affecting the dental undergraduates' depression levels. Future research on any correlation between depression levels and clinical performance is highly recommended for better understanding on this topic, and to provide better educational environment at dental institutes in Malaysia.

**Keywords:** Dental Undergraduates, Clinical Years, Stressors, Stress,

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**A.38**  
**LE 006**

## **Performance Comparison of the Basic Idea Sketch in Product Development between Manual Sketching and Computer Aided Design**

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Industrial products design is a creative and innovative process of design that concerned with outer appearance of the products by focusing on the Function, Value and Appearance of products including its format and size in order to develop the products that will maximise the benefits for the users and the manufactures. Product designs that incorporate the mentioned principles into the creating process are appreciated among the consumers. These principle concepts are the fundamental element and the important factor in creating the innovative, new style, and unique designs. In addition, the design that has systematic designing process can create an effective design with the hierarchical and systematic pattern. The research is based on the previous research about the Comparison of Concept Transferring Procedures of Basic Idea between manual sketching and Computer Modeling. The research found that the manual sketching design is an idea transferring process that helps to increase the imagination in idea sketch. Also, the manual sketching can draw more sketches and more variety of product designs than sketching via the computer modeling based on the Quantitative measurement. This research aims to study the quantitative results of the number of sketch

designs under these two idea transferring processes. This research selects the sample groups from random samples, which are the non-probability sampling, who are the undergraduate students from the 4th year's industrial product design program from Rajamangala University of Technology Phra Nakhon. The sample group of 56 students will be divided base on their academic standing and their aptitude in sketch design process. One of the students will be chosen to make the sketch design using both manual sketching and computer modeling process within the same time frame. The number of sketches/ time will be recorded, in each experiment, the time will be increased by 30minutes, the experiment will be repeated until the time reach 120 minutes. After that, the professor will evaluate the quality of the designs that can be used in the development of the industrial products. The research found that not only the manual sketching process is the basic idea transferring process that helps to increase the creativity in drawing the basic idea sketch which yields more number and more variety of sketches; it also creates more efficiency design than the computer aided design. The result is to be used to improve or lead to the process of ideas transferring and to present the products' sketches in the idea transferring processes. Also, the result is to be used to show the advantages of the responding to the designer's mindset and be used as a guideline for teaching and learning the industrial products design which is suitable for students with different characteristics and increase their academic performance.

**Keywords:** Performance, Idea Sketch, Manual Sketching, Computer Aided Design.

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**A.39**  
**LE 007**

## **The Factors Affecting to Student's Life in Higher-Education: Wheelchair-Bound Student in a Private University**

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From the situation reported on the disabled in Thailand found that all disabled does not have a mental disability and learning, which means they still can be able to study as usual, but however, there are only few disabled people to get their studies in the universities compared with the quantity in primary and high schools due to the convenient facilities and environment in the universities are unable to support them. Although through the years passed by under the Thailand's Act : Education for persons with Disabilities stated that Disabilities have the right to get education and convention on the right of the disabled stated for the right of education as well, but so far in many universities still have not provided for physical surroundings and convenience facilities under the standard of Universal Design for the disabled, whichever, if can do as in the Act and the Convention stated, it could reduce mental impact and living, increase the self-care opportunities of the disabled, not burden to social. The purpose of this research is to study experience, obstacles from activities and behavior caused by education and other activities in a private university, to present the factors that effect to the student's way of living, using wheelchair-bound student in a private university and expect that the research results will affect to get the support policy to well environment for the disabled students in the university consecutively.

The researcher conducted survey through observers as participants together with interviewed the disabled students, lecturers and supported officers, noted, took photos, analysis qualitative and quantitative results, experimented discussion with disabled students and physical spatial barriers on campus by measuring the behaviors and needs in quasi-experiments. The research results found that although there are benchmarks to guide for Universal Design, there should also focus on enhancing technical knowledge to the building's officers for maintenance and development to the facilities and environment. The qualitative surroundings will grant the opportunities to the disabled for better-studied skills and education as well as to access to join to all social areas with other student groups.

**Keywords:** Education for Persons with Disabilities, Universal design, Wheelchair-Bound Student, spatial

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**A.40**  
**LE 008**

## **The Spatial and Social Impact of University Campus towards Sustainable R-Urban Development**

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Universitas Islam Indonesia (UII) main campus is situated in the urban fringe of Yogyakarta which mainly rural-urban in nature. Since its establishment in 1990 within 36 hectares area, UII main campus has been considered as one of the urban generators in the northern part of Yogyakarta. However, master plan or guidelines on how university campuses should be planned and developed is still gain little attention from the local government. This study aims to assess the spatial and social impact of University Campus towards sustainable R-urban development agenda, especially in the case of Universitas Islam Indonesia. Visual observation techniques will be utilized to gain physical data, including maps, photos, and video. Google-earth image series from the year of 2003 to the present (2016) will be used to analyse the spatial transformation both in Kimpulan sub-village and Kaliurang Street segment. Interviews to the local communities and secondary data such as newspaper, planning report will be used to capture the social impact of the university campus to their life experiences. It is expected that the findings from this study will reveal the impact especially spatial and social of the existence of University Campus, in this case Universitas Islam Indonesia in Yogyakarta and help the local authority and other stakeholders to recognise the transformation of the rural-urban area especially to the existence of university campuses. It is also expected

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that the findings may anticipate the changes in order to better plan their future built environment. The implications of the result and future research directions may presented in the later stage of this study.

**Keywords:** university campus, R-urban development, spatial and social impact, sustainable development

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# **Local Heritage Environment**

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**A.41**  
LHE 001

## **Assessment of Heritage Property Values Using Multiple Regression Analysis and Rank Transformation Regression**

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The current practice of heritage property valuation is using sale comparison approach. However, there is a limitation in applying this approach for heritage property valuation because of unavailability of market evidence. Therefore, the aim of this paper was to evaluate the capability of Multiple Regression Analysis and Rank Transformation Regression in assessing the values of heritage property. The original dataset consists of 893 commercial properties transacted from 2004 to 2014 in Kota Bharu, Kelantan Malaysia. After filtration process, only 25 units of shophouse heritage property were available and valid to be used. The findings indicate that even we adopted statistical methods of analysis to overcome the issue of unavailability of market evidence this still could not solve the problem. Hence, the findings of this research

contribute to the need for an improved method for heritage property valuation by proposing an extended sale comparison using statistical analysis for future investigation.

**Keywords:** real estate valuation, heritage property, multiple regression analysis, rank transformation regression

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**A.42**  
LHE 002

**Fire Safety Management System for Heritage  
Buildings in Malaysia**

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Fire is one of the horrific events that could lead to death and total destruction of buildings. Many great buildings were lost in fire. Many towns and cities were rebuilt because of great fires. Heritage buildings are recognized as over 50 years of age and built with distinct architectural features of its time. Nonetheless, these buildings present a great risk as it is often not well prepared for current fire hazard. Ergo, a good fire management system is seen to be an effective solution. This research looks at types of fire management and systems used in heritage buildings in Malaysia. Bangunan Sultan Abdul Samad, Textile Museum, KTMB Headquarters, Royal Gallery and SMK Convent Klang are selected as case study to assess the level of fire preparedness. This paper will discuss the findings from the interview session, fire safety elements checklist and observation carried out during the field study. The result shows the important role of active fire safety system to prevent destruction cause by fire. The findings show the poor standard of fire safety management in the selected buildings. Discussion and recommendation to overcome the condition is elaborated further in the conclusion.

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**Keywords:** fire safety , heritage buildings, destruction by fire, fire management system

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**A.43**  
LHE 003

**Policy Evaluation for Adaptive Reuse Practice  
at the Old City of Sana'a Yemen**

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The Tower Houses of Yemen have a unique characteristic composed of the traditional craftsman techniques with the local traditional materials that divers according to the region. Currently, the practice of adaptive reuse shows a high intervention on the original materials and techniques by the private owners, especially on the building interior. In 2008, UNESCO inventory demonstrated the increased number of various types of intervention. The study aims to evaluate the current policy for the conservation and adaptive reuse practice at the Old City of Sana'a. A case study of adapted tower house into a hotel located in the Old City of Sana'a in the following quarters; Al Quzali, Talha, Daoud, and Al Abhar. The data collection was made with the following instruments: 1) Structured interview with the authorities involved with the adaptive reuse policy and guidelines; 2) On site observation of the building condition and the degree of intervention; 3) Data collection of the authority applications, guidelines, and previous projects. The study revealed a gap between the authorities in charge of the adaptive reuse decision making. The permission application lacks the following; 1) The on site inspection forms lack information on the building physical diagnoses and documentation; 2) Diagnoses don't follow any check list or standards of evaluation on site; 3) The inconsistency of the application's data from

each form to another; 4) irrelevant policy in comparison with of the principles of the international charter of conservation. Besides, Hotel permission of practice criteria is not suitable for the Tower Houses building capacity. Finally, the nonexistence of adaptive reuse licenses and interior intervention guidelines. The findings proposed an upgrade on the current application forms to control and organize the on site survey with a check list of the building defects, in reflection to the Tower House traditional building materials and techniques.

**Keywords:** Adaptive Reuse, Policy, Tower House, Yemen

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# **Legal Matters**

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**A.44**  
**LM 001**

**Land Registration of Titles at Stake:  
West and East Malaysia Compared**

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One of the main prongs of a land law is the system of title registration. Many individuals and business entities consider land as the most important and valuable asset. Registration of land title evidences the proof or ownership that is unchallengeable and indefeasible. However, many people have become victims of title registration fraud and lost their ownership to their land when the fraudsters transfer the land to the innocent third party (bona fide purchaser). In realisation of the increasing cases of title registration fraud in Malaysia and the inherent weaknesses of the land registration system in the country, this study aims to provide a workable solution to the problem. In doing so, the paper firstly compares and highlights the controversy surrounding the concept of indefeasibility of title in Peninsular Malaysia, Sabah and Sarawak, in reference to decided cases and scholarly commentaries of the judicial decisions. Secondly, the paper also examines the concept of federalism in the management of land administration system and the federal-state division of power, which leads to different land laws and land registration systems in place in Peninsular Malaysia, Sabah, and Sarawak. This study also highlights the electronic land registration systems in Peninsular Malaysia

i.e. eTanah and Secured Land Management System (SELAMAT) and compare them with the systems implemented in the Sabah Land Dealing Electronic Submission System (LaDess) and the Sarawak Land and Survey Information System (LASIS). This study also compares the measures taken to prevent fraud in these three jurisdictions. Unlike other foreign jurisdictions like Australia, Canada, and Singapore which has title assurance fund, in the absence of such fund in Malaysia, this study suggests that Malaysia needs to tighten her security measures to prevent both paper-based and electronic fraud. Control on access to the system is necessary. Besides, specific officers should be allowed to do specific tasks in the system and involvement of multiple officers is a good way to prevent insider's fraud. The system in West Malaysia needs to adopt strict registration requirements as applied in Sabah and Sarawak. Finally, this study recommends that the physical appearance of the registered proprietor should be made compulsory.

**Keywords:** fraud, land registration, electronic system, title assurance fund

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# **Other Environment**

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**A.45**  
OE 001

## **Distinction of Personality Characteristics Factors and Environmental Problems Perception : Thai adolescence**

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The environmental crisis is a widespread problem for humanity around the world. These effects may directly or indirectly affect the way of living. Each region in the world has different issues that affect the level of perception that is different. This study will influence the understanding of different personality factors. It is important to explain how environmental perceptions can affect environmental behaviour. The purpose of the research was to study the perception of environmental problems and the differences in the characteristics of the following aspects: 1. Gender 2. Hometown 3. Characteristics of accommodation 4. The responsibility for the cost of electricity and water in the accommodation to environmental issues in 16 issues, the issues in the study are 1. the level of perceived impact of the problem 2. levels of local perception of problems 3. levels of perceived problems at the national level and 4. Global perception of problems there is a hypothesis in the research. Personality factors will affect differences in perception of environmental issues. The research

instrument was a questionnaire. Measure the level of Perceiving using Likert scale 1-5. A group of 120 undergraduate students in Rajamangala University of Technology Phra Nakhon, aged 18-22, were randomly selected using random sampling. The statistics used were independent-t-test and one-way ANOVA. The research finding found the differences in the factors affecting the perceived impact of environmental problems at the local level, Nationally and at the global scale, statistically significant at a confidence level of 95%

**Keywords:** Perception ; Personality Characteristics Factor, Environmental Problems

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**A.46**  
**OE 002**

**Satisfaction Level Of Progressive Addition Lens  
(PALs) Wearers**

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The number of presbyopia is increasing worldwide with the estimation of 1.04 billion people and 517 million were reported to have inadequate correction. In term of near vision, presbyopia indeed affects the health-related quality of life especially to the daily activities such as reading, cooking, sewing and other near tasks. There were several choices prescription available for presbyopia and spectacle remain the most common and cost-effective presentation. Prescribing reading addition based on the patient's age was the most successful method to determine the correction addition required. Originally, patient satisfaction is an essential condition to reach the desirable clinical outcomes. The level of vision satisfaction between quality of vision and symptoms reported by progressive addition lens (PALs) were investigated. Sixty questionnaires were mailed to the respondents who were the progressive addition lens (PALs) wearers aged between 40 years and above from UiTM Vision Care. Overall, the quality of vision showed positive correlation with total satisfaction The strongest positive regression line of correlation was found between quality of vision at intermediate viewing with total satisfaction on seeing grocery shelves; mean= 7.07±2.05  $r=0.844$ ,  $p<0.000$  and computer screen mean=7.07±1.84,  $r=0.844$ ,  $p<0.001$ . The

weakest positive regression line of correlation was between quality of vision at distance viewing with lowest ranking of total satisfaction on driving mean=  $6.67 \pm 2.45$   $r=0.574$ ,  $p<0.001$ . Blurry of vision be the most reported symptom among all with mean=  $7.07 \pm 2.60$ ,  $r=0.701$ ,  $p<0.000$ . High level of satisfaction on quality of vision was found associated with PALs dispensed. Eyecare practitioners should aware of the wearers' priority, requirements tasks and the needs in order to select the appropriate lens design that match the tasks required as to improve the quality of service. Improvement in progressive addition lens (PALs) designs can potentially reduce the possibility symptoms, hence increasing satisfaction level among progressive addition lens (PALs) wearers in the future.

**Keywords:** Level of satisfaction, quality of vision, multifocal lenses, progressive addition lens.

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**A.47**  
**OE 003**

**The Impact of Flood Disaster on Daily Activities and  
Quality of Life amongst Women Flood Disaster  
Survivors**

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Background; Flood disaster had caused many disruptions in the performance of activities of daily life especially amongst women who life in a sandwich generation as they may hold many roles and responsibilities in life. This may lead to occupational imbalance; in which they have to focus on certain responsibilities and forgoes some important tasks in life after the flood, which subsequently affects their quality of life. However, to date, the information about the types of daily activities affected and the effect of the flood disaster on the quality of life amongst women flood survivors in Malaysia are scares and inconclusive. Hence, the aim of the study is to identify the most affected daily activities as a result of flood disaster and its relationship with quality of life. A total of 131 participants who met the inclusion criteria participated in this cross-sectional descriptive study. To identify the types of activity affected and level of difficulty in engaging in occupations, a questionnaire was developed based on the area of occupations as described in the Occupational Therapy Practice Framework (OTPF, 3rd ed) and a semi-structured interview was conducted with selected respondents. A pilot

study was carried out to establish the content validity of the questionnaire, before carrying out this study. Findings; Results showed that the most occupations affected among women in sandwich generation (n = 34) are rest and sleep. Another factor that was found to be of significant difference that exacerbates the difficulty in engaging in rest and sleep is having illnesses, had many people living together, has a low educational background, unemployed, and had experienced few numbers of floods before. Implications: Occupational balance is important to promote health, wellbeing, and quality of life. Flood disaster victims had suffered enough loss (physical and psychological), affecting their resiliency, which may aggravate their ability to rebuild their life after the flood disaster. With this knowledge, governmental bodies and NGOs can aid in helping to reduce the impact of flood disaster by giving the necessary help to the affected daily activities, especially towards women in the sandwich generation, who holds many roles and responsibilities in life.

**Keywords:** flood disaster, occupational imbalance, activity of daily living, quality of life

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# **Residential Environment**

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**A.48**  
**RE 001**

## **A sustainable low-income housing provision framework for low-income groups in Abuja, Nigeria**

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While housing is recognised worldwide as one of the basic necessities of life, housing the urban poor in suitable condition is an uphill battle in all countries of the world. This however is much more severe in developing countries, with the main driver behind this challenge being population growth and uncontrolled rural/urban migration. Nigeria is one of these countries, with a population of over 180 million. Nigeria has an official housing deficit of about 17 million housing units, which is still growing annually. With the acute shortages in Nigerian urban centres of affordable housing, the rapid deterioration of existing housing stock is resulting in monumental urban deficiency both in terms of quantity and quality. The capital city of Abuja is amongst the most hit with authorities estimating a housing deficit of 1.7 million. While Nigeria's housing policy situates government as enabler, confusion still reign on the housing provision generally and particularly for the low-income groups achieving it still seem far from reality without government's direct involvement. The research, part of a PhD study aims to develop a sustainable housing provision framework for low-income groups. Through a pilot study, the research adopts a semi-structured interview of 12 respondents of various stakeholders to explore the current situation of low-income housing as well as strategies for its provision in Abuja. Initial participants were

recruited through literature and conference proceedings as well as through the researcher's local network gained during years of practice as an architect; additional participants were recruited through a "snowball" sampling approach. The framework is useful to government agencies, private developers, civil societies, housing cooperatives and inhabitants in addressing the housing need of low-income groups in Abuja.

**Keywords:** urban housing; low-income; housing policy; housing provision.

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**A.49**  
**RE 002**

## **Conceptual Framework of Physical Built Environment and Social Factors on Cycling Behaviour among Residential Neighbourhoods**

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Changing the behaviour of a population has been described as the challenge of the urban environment. It's compliance with increasing and developing the issue of urban environments such as pollution, congestion environmental damage, and serious health problem. Increasing of people lead to increase the overuse of the automobile in the urban and residential area. Cycling as one of a mode of transport in the urban and residential areas has been determined as a solution for the urban issue. It is an active and environment - friendly mode of travel. However, the relationship between physical built environment and social behaviour among residential are less associated with increasing the bikeability of residents physical activity. The purpose of this study is to determine the influence of the level of bikeability activity of residential neighbourhood. Content analysis was used to identify the bikeability contributing factors that influence residential behaviour. Two main factors have been identified as major contributing for bikeability behaviour. (1) Physical built environment factors such as land use, accessibility, street connectivity and design. This factors becoming act as barriers to physical activities among residents. (2) Social factors such as socioeconomic status, race, social cohesion also have been determining by category of

cyclist and non-cyclists. The main aspect to determine the interaction between all the factors will be based on the behaviour of individuals and their personal characteristics. From the analysis, all the physical and social factors have been listed to contribute within cycling activity levels among the residential neighbourhood. Finding from content analysis support the limited of bicycle infrastructure related with cycling behaviour. This study also has been considered in facilitating the design, proper planning of residential neighbourhood by improving actual and perceived environmental conditions. Physical cycling barriers were found among the elements that influence the bikeability behaviour for a livable community. The new conceptual framework of bikeability behaviour was discovered in assisting building designers, planners, and professional designers in producing a better and active lifestyle within neighbourhoods.

**Keywords:** Physical built environment, cycling behaviour, social factors,

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**A.50**  
**RE 003**

## **Home Buyers' and Vendors' Behaviours: Analysis from judicial decisions**

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House is undoubtedly the most important durable goods in the household and requires high involvement as well as complex decision-making. In the absence of comprehensive study on the behaviour of purchasers in buying a sub-sale property, the study aims to examine the behaviour of vendors and purchasers indirectly through the judicial decisions in Malaysia, Australia, and the United States pertaining land and property disputes between vendors and purchasers. The decided cases illustrate that buyers are still indolent in their duty to conduct a pre-purchase inspection, especially involving sub-sale of residential properties. There is still a lack of understanding among purchasers of the importance of conducting the pre-purchase inspection and getting professional opinions before completing the purchase of the house. The hiring of home inspectors (building surveyors) to make a detailed inspection of the structural and mechanical systems of the houses is normally not the norm. Decided cases also illustrate the attitude of purchasers who engage valuers for the requirement set by the financial institution rather than to get the professional report on the value and condition of their property. In jurisdictions like in Malaysia where the "caveat emptor" doctrine and "as is where is" clause is applied, the weakness of this

maxim and rule has been manipulated by vendors of sub-sale residential properties to defraud naïve home buyers. Even in some foreign jurisdictions where vendor disclosure laws oblige vendors to disclose the nature of property for sale, some vendors actively concealed defects in the property, misrepresented the buyers as to the conditions of the properties and did not rectify the defects before the sale. This study suggests that consumer education on the pre-purchase inspection is vital so that home buyers can be more vigilant and take greater precaution in the purchase of a sub-sale property. As for vendors' irresponsible behaviours in misrepresenting buyers, since a typical court litigation is costly and time-consuming, this study suggests the jurisdiction of either the Tribunal for Home Buyers Claims or the Tribunal for Consumer Claims to be expanded to include matters regarding the dispute between vendors and purchasers as to the condition of the property. This approach would enhance the home buyers' (consumer's) empowerment and promote the attitude of a more responsible and ethical vendor in a sub-sale property.

**Keywords:** home buyers' behaviour, vendors' behaviour, fraud, inspection

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**A.51**  
**RE 004**

## **In Search of Home Sweet Home: Between theory and reality**

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Everyone dreams of getting a quality house. However, residential homes bought through sub-sale contract are of varying degree of quality, rectification, repair, and workmanship and may affect the purchasers' search for a home Sweet home. The "caveat emptor" doctrine compels the buyer to make a thorough investigation, with the ideal theory that the law aids the vigilant and not the indolent and to blame himself for his carelessness. Meanwhile, the "as is, where is" clause in the sale and purchase agreement posits that the house is sold based on its conditions, that the purchaser is ready to buy it "with all faults", whether immediately apparent to the customer's eyes. However, the question is, to what extent, can a purchaser make proper investigation and inspection of the sub-sale house using the current existing mechanisms, hence making an informed decision in buying the sub-sale property? This paper aims to answer this question in the absence of comprehensive study on this issue in Malaysia. The prospective buyers can obtain information about the land and property from sources such as title search, valuation report and building surveyor's report. However, this study views that the information gathered via these mechanisms are either insufficient or expensive, or lack standardisation hence led to variation issues, where

the current measure is weak in protecting purchasers against irresponsible sellers. Given the weaknesses of the existing avenues to get information about the sub-sale house, the paper explores the practice of implementing vendor disclosure laws in selected jurisdictions—the United States and Australia. Those jurisdictions have passed vendor disclosure laws compel sellers to serve the prospective purchasers with statements concerning the conditions of the properties. Upon violation of the vendors' duty, the purchasers are entitled to damages and the right to rescind the contracts, and in some circumstances; the vendor could even be fined. Though such practices appear to be ideal in theory in assisting purchasers in selecting their dream home, however, there are weaknesses and may not appear to be the best approach. Hence, this study suggests that the real estate agent or lawyer should present a pre-purchase checklist and this practice should be made a norm before the completion of the sale and purchase agreement process in the sub-sale of residential properties in Malaysia. The incorporation of the checklist would facilitate the purchasers' search for a home sweet home.

**Keywords:** sub-sale of houses, caveat emptor, "as is" clause, vendor disclosure law

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**A.52**  
**RE 005**

## **Location Housing Affordability as an Indicator for Quality of Life in Malaysia**

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The ability to own a house is one of the dimensions to have a quality of life. In Malaysia, housing is one of the components of the quality of life. However, the focus has been on the provision of affordable housing and infrastructure rather than housing affordability. On the one hand, households have to balance their housing costs but on the other hand their non-housing expenditures, given a limited income. With the rising price of housing, the ability to own affects the quality of life in many parts including household well-being and economic security. Housing affordability is to ensure that houses are affordable for everyone, especially for the low-income group. The 11th Malaysia Plan has referenced this group as B40, a mean monthly household income of less than RM2,537. The measurement of housing affordability uses household income and housing cost (price-income ratio) but then disregard transportation cost which holds a substantial amount of household expenditure. Transportation cost will measure the geography and transport factor of housing affordability. Housing prices in the outlying urban area are lower but compensate with high vehicle dependency, long distance commute which often linked with high costs

of petrol and vehicle maintenance. Location of housing will ultimately influence transportation cost. The study sets to determine the location housing affordability for the low-income group (B40) in urban areas. Using quantitative approach, it examines two urban areas in Selangor, namely, Subang Bestari and Putra Height based on the availability of public transit within those areas. Combining both housing and transportation affordability had created an integrated Location Housing Affordability Index indicating that the location influences housing affordability. 148 respondents interviewed within these two areas. The findings suggested that the location of the urban area for the low-income group (B40) is seriously unaffordable. The term "location" should, therefore, be part of the definition of affordable housing because it affects housing affordability thus concerning the quality of life.

**Keywords:** Quality of life, Location housing affordability, Transportation cost, B40.

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**A.53**  
**RE 006**

## **The Role of Cohousing in Building Sustainable Communities: Case studies from the UK**

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A sustainable community is defined as an economically, environmentally, socially positive, mutually beneficial and resilient community. The concept of a 'sustainable community' was proposed by the UK government in 2003. This concept will encourage the government to build communities that will stand the test of time and in which people 'want to live and work, now and in the future' by promoting various housing provision models such as cohousing. Cohousing is a creative way to achieve the sustainable community concept and to contribute to affordable living. It is a new collaborative housing model in the UK, and it is designed to foster meaningful relationships, social interaction and sustainable living, therefore, building a sustainable community. Cohousing has the potential to deliver concept housing environment that leads to a low carbon lifestyle and sustainable living. This paper will present work conducted as part of a PhD study which aims to examine the advantages and limitations of cohousing and the extent to which it can lead to building sustainable communities, by exploring residents' requirements and preferences, daily activities and space usages in two case study cohousing communities in the UK. By examining people's motivation for cohousing building, this research will develop methods to encourage a greater commitment to cohousing and sustainable living

environments. This paper will review two cases which are located in Sheffield, Yorkshire. A qualitative approach will be used for this study involving Post-Occupancy Evaluation (POE) and cohousing residents interviews. It will explore how cohousing can be used as an evaluation tool for environmental sustainability to guide behavioural change and foster closer, inclusive, sustainable communities. Additionally, it is anticipated that the information produced by this study could potentially benefit a range of cohousing groups and also could be applied to different settings and environments in the UK and beyond, accelerating the implementation of sustainable homes and communities.

**Keywords:** sustainable communities, cohousing, environmental sustainability, social sustainability

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# **Travel / Transportation Environment**

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**A.54**  
TTE 001

**Effect of Motorcycling on Salivary Noise-Induced  
Cortisol among Young Motorcyclists**

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Motorcycle riders are exposed to noise levels from 90 dBA (48 km/h) to 116 dBA (193 km/h). Prolonged noise exposure leads to the release of cortisol from the adrenal cortex. Stress reaction differs based on subjective noise sensitivity where high noise sensitive individuals are more susceptible to adverse effects of noise due to less coping capability. Investigations of noise-induced cortisol response due to motorcycling among young motorcyclists have not been performed previously. This study aimed to determine the saliva cortisol responses between low and high noise-sensitive riders after the motorcycling exposure.

A total of three hundred and one undergraduate students (aged 19 - 25 years) participated in self-reported questionnaires for determining noise sensitivity (Weinstein Noise Sensitivity Scale, WNSS) and information regarding participants. WNSS scores categorized participants into low (L-NS) and high noise sensitive (H-NS) group. Later in a field experiment, 57 participants volunteered, (40 male and 17 females) comprising of L-NS (n = 30) and H-NS (n = 27) groups. The subjects rode motorcycles for 40 km from the trunk road to the main highway (speed subjective to speed limits) for 50 minutes. Saliva was collected through passive drool technique before and after the ride and measured in triplicate via enzyme immunoassay (EIA)

method by using the high sensitivity human salivary cortisol-ELISA (enzyme-linked immunosorbent assay) kit (Salimetrics, USA).

Wilcoxon signed rank test determined statistically significant difference in salivary cortisol concentrations in the H-NS group before ( $M = 0.119 \mu\text{g/dl}$ ,  $SD = 0.08$ ) and after ( $M = 0.163 \mu\text{g/dl}$ ,  $SD = 0.1$ ) the motorcycle ride ( $p < 0.05$ ); whereas no significant difference ( $p > 0.05$ ) was found in cortisol response in the L-NS group before ( $M = 0.17 \mu\text{g/dl}$ ,  $SD = 0.105$ ) and after ( $M = 0.15 \mu\text{g/dl}$ ,  $SD = 0.06$ ) ride. Gender differences were found to be significant ( $p < 0.05$ ) for salivary cortisol concentrations among the L-NS group, after the ride. Cross analysis of salivary cortisol concentration between groups, was significant ( $p < 0.05$ ) for before ride, where the L-NS group was significantly higher in cortisol concentration compared to the H-NS group. This study suggests that subjective noise sensitivity plays an important role in increasing salivary cortisol concentrations among high noise sensitive riders (H-NS). This study provides the baseline for future investigations regarding motorcyclist's physio-psychological health.

Keywords: Noise, Salivary cortisol, Noise sensitivity, motorcycle

**A.55**  
TTE 002

## **Elevated Highways and its Lost Spaces: A Review of Kuala Lumpur's Seldom Seen**

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The development of the urban highway in and around the city has allowed for the mass expansion of the urban area and at the same time created vast quantities of left over spaces that seldom integrated into formal planning and design. The interstitial spaces formed as a result from these concrete "rivers" particularly that of the elevated poses as the dark child of modern city planning. A stark contrast in comparison to the structure that is omnipresent overhead in terms of function. Vague on purpose - out of sight and out of mind; these spaces are widely referred to as anti-spaces, lost spaces drosscape, terrain-vague, dead zones or as the shadow are often neglected and overlooked in the process of formal city planning. The elevated highway presents itself as a necessary civic infrastructure. The question of why can't the idea of necessity continue into the spaces below it presents itself as a key notion behind this research. An opportunity to open up a little space for the citizens of the city, these spaces are often neglected, wasted and remains on the boundaries of formal planning and design. Regarded as lost opportunities, these spaces are often associated with urban issues ranging from the dumping of debris to homicide. This paper aims to shed some light with regards to the spatial typologies of these often-overlooked urban interstices and shall aid in its future plans for possible

usage. Data was gathered from field work which involved site observation and photographic recordings of a case study conducted in Kuala Lumpur. Thematic typologies and site characteristics were recorded which suggested that the spaces below these massive urban structures have the potential to be planned and designed to cater adjacent community needs and usage. Undeveloped left-over spaces below elevated highways have the potential to be transformed into major corridors, gathering areas or recreational spaces that integrate the elevated highway and their surrounding environment thus leading to a more sustainable usage of space.

**Keywords:** Elevated Highways, Interstitial Spaces, Lost Spaces, Spatial Typologies

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# **Urban Environment**

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**A.56**  
UE 001

## **A Structural Model for Developing Maintenance Culture in Malaysian Local Authorities**

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Infrastructure development is fundamental to the success of a country to achieve the status of the developed nation. However, the development made is deemed to be unsuccessful without a high culture of maintenance to maintain the existing infrastructure. Nevertheless, the effort is unworthy since the performance level for the maintenance of an immovable asset in Malaysia, especially those that belong to Local Authorities are still at an inadequate level. Local Authorities hold a large number of facilities that place demands on resources. They have a responsibility to use and maintain a broad range of property assets including classified and heritage buildings, single purpose facilities and state of the multipurpose art facilities. Over the years, the local authorities in Malaysia currently have been soundly criticized by public caused poor maintenance culture. The assets primarily public buildings and infrastructures are not well maintained. This problem arises due to the poor maintenance culture that resulted in the immovable assets were not properly maintained. Thus, developing the maintenance culture is

essential to increase the awareness about maintenance activity on public facilities and assets in Malaysian Local Authorities. Regarding this scenario, the purpose of this research was carried to produce a structural model for developing of maintenance culture in Malaysian local authorities. The variable will be measured in this study were six key determinant factors with 26 indicators in this factors, which are leadership, communication, teamwork, training and education, policy, strategy and work planning and involvement and also be measured were the seven indicators of the positive maintenance culture. Data were analyzed using Partial least squares (PLS) technique: Smart PLS version 2.0. The PLS results confirmed that producing the structural model for key determinant factors of maintenance culture.

**Keywords:** Maintenance Culture, Measurement Model, Structural Model

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**A.57**  
**UE 002**

## **Live Beyond Buildings: Street as the everyday living space in Istanbul, Turkey**

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This paper attempts to reveal the importance of the street as the temporal outdoor living space in the pursuance of improving the quality of life in the city. The temporal living space is the unauthorized urban interior space which is produced by traditional activities and culture support. It usually emerges as reaction to the specific urban conditions where the space provided is no longer fulfill the needs of the inhabitant. This argument is based on the shifting idea of staying from permanent and stationary to become more temporal and nomadic. The contemporary society does not need pre-set habitat as they are made and remade their living space as they are moving through the city. It is change the attitude toward living space, which is before restricted to the private interiors to reach the urban and collective realm. The change of this attitude also highlights the importance of the public space, such as the streetscape, as the locus of the city's inhabitant. It is the space where people gather as equal and the sociopolitical aspect of the city is played. By looking through the spatial strategies employed by the city's inhabitant in the production of their temporal collective outdoor living space, this study attempts to unfold the potentials of such spaces as the agency to improve the wellbeing of its inhabitant. This study employed

behavior and spatial mapping in its relation with time, where it would reveal how spatial alteration affects the atmospheres, social activities and spatial programming of the street. The mapping would also reveal how the interaction of the urban actors with their living space has impacts on the urban spatial identity. This study take place on the neighborhood around the Faik Pasha Caddesi, in Istanbul, Turkey. The inhabitant of this neighborhood treats the pedestrian and the streetscape as the extension of their domestic interior. This extension become the collective living space that partially owned and experienced by everyone in the neighborhood. This informal alteration of urban space is a common spatial practice in Istanbul where it explicitly functional, civic minded and fulfill the sociocultural needs of the inhabitant. The findings of this study are translated into an urban interior architectural exercise, where it explores the possibility of creating an intervention that enhance the rich and authentic spatial experiences of the temporal outdoor living space that would improve the quality of life in the neighborhood.

**Keywords:** Urban Interior, Living Space, Temporal, Quality of Life

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**A.58**  
**UE 003**

## **People in City: Urban park and the quality of life**

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An urban park is a place where urbanites can escape from the stresses of everyday life. It is believed that park is a one of the best ways to achieve the sustainable development in the city as well as it will improving the quality of life of modern communities, strengthen the social relationship, and enjoyment. Here, the provision of the urban park does give a positive impact to the quality of life of urban people or not have frequently have been questioned. Central to this argument is the claim that the variables need to be considered in order to attract more people to park such as activities, satisfaction, experience, the design of the park, and time use. To date, there has been little research to measure the quality of the urban park and its relationship to the quality of urban people. In seeking to address this argument, this research was conducted to assess the quality of urban park by empirically evaluating its design, inclusiveness and pleasurability, and to discuss how these findings can be applied in improving the quality of the park. Using the key concept of Lawton's Quality of Life, this study provides an understanding of behavioural competencies and psychological well-being of Lawton's Model on how the urban park was contributing to the quality of life and how visitors might perceive such contributions based on the way they used the park. A quantitative research method was employed for the research with 138 respondents in Taman Lembah Bukit SUK, Shah Alam. The respondents were randomly selected among the visitors of the

park. Results confirm that the urban park provides the potential for active recreation, but they are often underutilised and attract only a subset of a user group. This is primarily explained by their own lack of interest in the existing park activities and the poor quality of park's element especially in the aspect of designing urban park spaces. Findings from this research may yield useful information for park professionals to make successful provision of urban parks for the use and enjoyment of residents and visitors alike.

**Keywords:** Quality of life, urban park, Design, Inclusiveness, Pleasurability

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**A.59**  
**UE 004**

## **Reading Urban Ingredients: What characterizes eating out spaces in urban spatial context**

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The development of activities related to food gives important implication to the complexity of urban space. This paper addresses the characteristic of eating out spaces by understanding how people use their space related to food in urban spatial context and exploring its urban ingredients. The case of this exploratory study is Pancoran, Petak Sembilan, Gloria and Kalimati Alleys, known as one of culinary destination in Jakarta. In this area, various aspects such as activities related to food and eating out space displayed how the Chinese and the local culture mix and influence each other. As the root of urban area and community can be read from the relation of food and people, we analyzed the urban ingredients in comparison to food processing stages. The first step is exploring how the ingredients mixed in relation with people in urban spatial context. The following step is analyzing how the combinations of ingredients emerge in space. To understand the patterns of spaces related to food, we tried to employ several tools of analyses, among others are tracing the history of its food culture, observing activities, interviewing the dwellers, the food sellers and the buyers and making the data maps. The study revealed that the changes in the production of space related to food and eating out activities have been

triggered by the changes of communities. The domination of certain group in society and informal sectors become the important factors in fostering these changes. Urban food legend, religion, people, main activities and traditional market are some urban ingredients which give character to space related to food and eating out activities in our case study. Understanding the pattern and urban ingredients are prerequisites, if we want to keep the root of their communities and to promote this area for place making related to food and eating out activities.

Keywords: urban ingredients, eating out, food related space

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**A.60**  
UE 005

## **The Role of Politics and Science in Sustaining the Quality of Life Upon Global Environmental Change**

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Global environmental change is identified as large-scale and global environmental hazards to the quality of life include climate change, stratospheric ozone depletion, changes in ecosystems due to loss of biodiversity, changes in hydrological systems and the supplies of freshwater, land degradation, urbanisation, and stresses on food-producing systems. Appreciation of this influence on human life requires a new perspective which focuses on ecosystems and on the recognition that the foundations of long-term good life is continued stability and functioning of the biosphere's life-supporting systems. People in coastal regions of Asia, particularly those living in cities, could face some of the worst effects of global warming, one of the most vulnerable on Earth to the impact of global warming. Environmental degradation is a major challenge in the Asian region. Asian cities are poised to contribute more than half the rise in global greenhouse gas emissions over the next 20 years if no action is taken. Cities like Bangkok, Dhaka, Guangzhou, Ho Chi Minh City, Shanghai, are coastal cities which are all highly vulnerable to rising sea levels, floods, and other impacts of environmental change. Institutional responsibilities for urban environmental management are often unclear and weak, especially over problems of cross-boundary pollution. Government policy needs to make sure existing, and future

infrastructure can cope with increasingly frequent disasters. The global warming or climate change or environmental change debate would not be so heated if it were simply a question of science. The science of climate change is clear. Scientists know that the Earth is warming and that humans are the reason. We also know that the Earth will continue to warm in the future; however, we can do something about it. Since one side blames humanity for the crisis, they demand immediate action to avoid imminent disaster. With so much at stake, it's no surprise that science gets drowned out by politics and policy makers. This paper presents a review of the state of environmental change policy in those five cities mentioned. It identifies critical challenges, knowledge gaps with a particular focus on urban planning interventions that will be relevant for future urban policy on a new perspective on environmental change in Asian cities. It will also conclude the common question – What role should Government take in dealing with environmental change and how science can be the tool to sustain a better quality of human life.

**Keywords:** environmental change; politics; environmental science; policy

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**A.61**  
**UE 006**

## **Theory of Flow in Urban Farming Engagement**

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Urban farming programs have been seen as an approach to overcome the problems of urban poverty, high living cost and food supply of urban dwellers in Malaysia. It is seen as a sustainable practice because it would benefit from the social, economic and urban environment such as reducing the ecological footprints of cities. Even though the term "Urban Farming" is new and increasingly popular for the past two years, but in term of policies and implementations, it can be traced back in 1974 when Rancangan Buku Hijau was introduced by the second Prime Minister and the introduction of Program Bumi Hijau in 2005. In consonant with this, urban farming also was supported by National Agro-Food Policy 2011-2020 and National Landscape Policy 2011. However, despite the efforts by the government, there is lack of participation motivation in urban farming activity and even if they are involved, sustaining their interest can be a challenge. Intrinsic motivation which accompanied by positive emotions can generate satisfaction and resulting in immersion and concentrated focus on a task. When the motivation is intrinsic, people do not focus on rewards but as a result of involvement and commitment. This type of motivation is more stable and durable endeavors. This quality of experience is termed as "flow". To describe

the experiences of intrinsically motivated people in any activities, Mihaly Csikszentmihalyi introduced the Theory of Flow. Understanding the connection between the intrinsic motivation and flow, may help to sustain practitioner's engagement in urban farming activity. Thus, this study attempts to examine the relationship between the Theory of Flow and urban farming participation. A quantitative technique will be adopted where the data will be collected through interviews and surveys using modified estimated sampling method (ESM). By integrating these theories, sustaining engagement can be increased thus the involvement in urban farming will be rewarding.

*Keywords:* Theory of Flow, Urban Farming, Motivation, Participation

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**A.62**  
**UE 008**

## **Urban Picnic: Reaction among actors as spatial mechanism of urban space**

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Bundaran Hotel Indonesia (Hotel Indonesia circle) is one of the most popular places in Jakarta for Jakarta's residents. Particularly on Sunday morning when the car free day event is held. The inhabitants do sports such as jogging, cycling, running, gymnastic. They also gather, parenting, chit-chat, play, eat, take a picture, play music, dance, jaywalk, sitting, and enjoy the ambiance and the scenic view of the city. They use street and pedestrian way, and pool's edge, pool's court yard as space and place for their activities (Fuad, Yatmo. 2017). This space is not addressed as picnic space, but it is a circulation space for vehicle and human. The picnic is an activity to get fun, joy, and also as media to get health, Hern (1989). Therefore the role and benefits of Urban Picnic as one the activity at outdoor space for escalating the quality of life need to be reviewed. Particularly from spatial experience sides of the performer and users of urban spaces. These research objectives are to explore spatial mechanism which enables the user of urban spaces to transform the function of it to become the diverse function of space, and also to search taxonomy of urban spaces which support the development of urban picnic space.

We use the ideas of bodily experience from Lepori and Franck(2000) and Pallasmaa (2012) for reviewing spatial mechanism based on spatial

experience at two urban space such as space for vehicle circulation and urban park. That two urban space has different characteristic, the first one is not intended for picnic activities, and the second one is designed for recreation purpose. Bodily experience approach is used as an opportunity to reinvent and to avoid the old pattern in the new form (Franck and Lepori, 2000; Pallasmaa, 2012). Exploration of spatial mechanism in understanding the spatial experience through space connectedness with the body is held by observing the space and the user, using drifting method (Debord 1955, 1992). To analyze the data we use the qualitative method and grounded theory.

The finding is the reaction among actors within urban picnic are one of the spatial mechanism in forming urban picnic spaces. The exploration of spatial mechanism based on spatial experience shows that there is the taxonomy of urban spaces which support the development of urban picnic spaces.

**Keywords:** Urban Spaces, Spatial Mechanism, Taxonomy

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**A.63**  
**UE 009**

## **Assess a method for the Parametrization of Urban Quality of Life**

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From the myriads of research and case study, it is observed that the assessment of the urban quality of life (QoL) has been based on the various parameters and factors. Besides, the design and construction industries have an increasing attention in and concern for environmental effects over its total life cycle of urban fabrics. Although a significant form of literature has provided positive indication as auxiliary to the effects of natural environments on urban comfort. Little has been known about the specific spatial patterns of urban nature as parametric-relation to the urban QoL. Urbanization processes in Malaysia have become an integral part of the various parametric matrix confronted by rapid growth. The essential parameters and factors need to be parametrized in order to design a futuristic urban location on the stressed situation, a recent overwhelming growth of urbanization. This research investigated a method in order to accumulate the parameters and factors those are guided the urban Quality of Life under a stressed condition. The main objective of the research is to parametrize the urban environment at the multidimensional scale and that needed to be investigated.

There are many approaches to assessing this interdisciplinary term QoL where may focus this issue using experimental and observational process. For the analysis of collected data here employed a parametric valid model with a significant integration of various parameters and factors related to quality of living conditions. The analytical results displayed the vital importance of the most effective environmental mitigation strategies in micro level. This scenario is also contributed to the significant mitigation of microclimate on the improvement of Urban QoL. The benefits of the parametric study are exaggerated, when applied on a spatial scale larger than the urban neighborhood scale. We use this scale to measure the quality of life in the city of Malaysia.

**Keywords:** Urban parameter and factors, Parameterization, Stressed conditions, Urban Environment and microclimate

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# **Working Environment**

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**A.64**  
WE 001

## **Effects of Colour, Area and Height on Space Perception**

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Colours and the spatial properties of the workplace are primarily visually conveyed. There are interactive effects of colours and spatial-architectural dimension (i.e. area and height) on human perception of space. Lighter colours seem to expand the boundary further away, while darker colours tend to make space feel closed in. However, the previous studies in physical workplace environment have mostly focused on colours only at the walls but lacking in concentration as a whole space. A stressful environment will result from excessive use of colour. However, the proper amount of colour combinations related with the spatial properties in the work environments is still questionable. Therefore, the aim of this study is to determine how colour combinations in the workspace, area and height influence space perception. The experimental research was divided into two stages: a pilot study and main study. During the process of pilot study, digital images of real design workspace were selected to explore colour combinations and room proportion. The environmental colour mapping process was used to identify colour schemes (i.e. analogous, complementary and monotone) and spatial patterns from those images to come up with the representative stimuli. Then 3D rendering images of the workspace

remade and used for the next stage. In the main study, 100 participants evaluated the experimental spaces on an internet-based questionnaire. Four factors of space perception are spaciousness, openness, complexity and order. They were assessed on a set of bipolar adjective pairs using a 7-point semantic differential scale. Data was then analyzed and presented the interactive effects between factors. The outcomes of this research reveal that variations in space perception are significantly associated with the difference in colour combinations, area and height. This finding would contribute to understanding more about the use of appropriate colour that would increase positive perception as well as the functionality of that workspace. The limitation and methodological aspects are discussed and suggested opportunities for further research.

**Keywords:** Effect of colour, Colour combination, Workspace, Space perception

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