

Planning Accessibility Strategies and Connectivity for Malaysian Urban Built Environment

Nur Amirah ABD SAMAD^{a,1}, Ismail SAID^b and Asiah ABDUL RAHIM^c

^a *PhD Candidate, Faculty of Built Environment & Surveying, Universiti Teknologi Malaysia.*

^a *Department of Architecture, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia.*

^b *Department of Landscape Architecture, Faculty of Built Environment, Universiti Teknologi Malaysia.*

^c *Department of Architecture, Kulliyah of Architecture and Environmental Design, International Islamic University Malaysia.*

Abstract. Access to our buildings relies to the accessibility of its external environment and the route taken. Developments and planning in urban areas has many several requirements and restrictions. Planning accessibility for Malaysian built environment is achievable by designing in compliance to the requirements enforced by authorities. Accessible design is commonly associated with providing facilities for Persons with Disabilities (PwDs), the issue that is often brought up is the inaccessibility of the external environment and lacking of seamless connectivity between buildings and the outdoor. The intention is to formulate accessibility strategies and work out planning process on how accessibility can be achieved. Universal Design will be the basis for the design and planning concept to accommodate all users to enjoy our urban built environment. It is notable that developed countries advances more in terms of implementing and enforcing accessibility measures via legislative and regulatory documents, government strategies and initiatives within its planning approach than the developing nations. The methodology will be looking into the establishment of strategies and measures of international and local planning policy, local and action plans of City of London as selected Local Authority to be analyzed its inclusive policy has been successfully implemented in their jurisdiction. The findings, discussions and result will be an outcome of generating a framework of accessibility strategies that is derived from interviews and government documents accordingly to targeted Malaysian urban areas focusing the City of Petaling Jaya and Putrajaya and how it can be improvised. Therefore, an interpretation of adopting accessibility planning strategies of developed country, to be adapted locally according to Malaysian legislation, culture and lifestyles.

Keywords. Accessibility, access strategies, government initiatives, Universal Design and urban built environment.

¹ Department of Architecture, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Malaysia; E-mail: nuramirahabsamad@gmail.com, amirahsamad@ukm.edu.my.

Introduction

Coined by Manley [29] initially and supported by Kose [26], that it was an identifiable significant global scene when the Americans with Disabilities Act was being conferred in United States in 1990 as this establish a comprehensive legal framework in protecting Persons with Disabilities (PwDs) from discrimination in employment, access to services and facilities for equal opportunities from civil rights perspective. The movement also started the incorporation of the Disability Discrimination Act 1995 as a rights based legislative measure in achieving social inclusion for Persons with Disabilities (PwDs) in the United Kingdom. Further noting the United Nations member states signed the UN's "Standard Rules on the Equalisation of Opportunities for Persons with Disabilities" in 1993 that accessibility and political action plans really made it into the agenda in the Scandinavian countries. In addition to the UN Standard Rules, Scandinavian countries been influenced by EU legislation, recommendations and resolutions also signed and adopted the UN Convention on the Rights of Persons with Disabilities (UNCRPD) in 2006 (Norway universally designed by 2025: The Norwegian government's action plan for universal design and increased accessibility 2009-2013, [6] which impacted the Design for All concept in Scandinavian countries such as Denmark and Norway, but also throughout the world [2, 35].

Issue and Scope of Study

The intention is to formulate accessibility strategies and work out planning process on how accessibility can be achieved. Universal Design will be the basis for the design and planning concept to accommodate all users to enjoy our urban built environment. Accessibility of built environment in Malaysia has been an ongoing issue as legislation implementation and enforcement for Persons with Disabilities (PwDs) accessibility are not well integrated and implemented by Local Government in Government buildings, Public buildings and public spaces. Accessibility in the built environment is in line with Universal Design principles to determine the minimum design requirements for PwDs. Introduction of Malaysian Standard started in 1990 but it was not acknowledged until the establishment of Persons with Disabilities (PwDs) Act in 2008 and this impacted the slow pace of accessibility awareness and also design implementation in development despite of the massive urban development happening in Major cities in Malaysia currently. Apparently, perceptions towards PwDs in Malaysia and some parts of Asia in particular, disability is a condition that is associated with embarrassment, to be sympathized, being hopeless and should not be doing the same as abled persons as it could be deemed difficult for them. These public perceptions come from the lack of awareness, understanding and empathy of PwDs to live independently with better quality of life while assuming that PwDs are not that many to be provided for.

According to Hussein and Yaacob [15], the introduction of the Law of Malaysia, Act 658, Persons with Disabilities Act in 2008 indicates a move forward in the right direction to empower Persons with Disabilities (PWD). Interpretations were made of concepts such as Universal Design reflecting a more global perspective and commitment of issues relating to PWD n on the Rights of PWD that was ratified on 19 July 2010. The notion of the Social Model of Disability was also suggested throughout the Act, where disability is defined as an evolving concept, whereas prior to the 2008 Act, it is very

much perceived as charity and welfare, based on the Medical Model focusing on impairments and negative perceptions.

Malaysia in particular has signed the Proclamation of the Asian and Pacific Decade of Disabled Persons 1993-2002 for its 1st decade with its further continuation of the Asian and Pacific Decade of Disabled Persons 2003 – 2012 for its 2nd decade, which is embraced in the United Nation Convention on the Rights of Persons with Disabilities (UNCRPD) and its Optional Protocol when it is developed in 2006, as argued by Kanter [25] and coined by Series [33] that UNCRPD was a response in concerning that previous existing human rights instruments have not given significant impact on improving the quality of live for PwDs, making UNCRPD a remarkable legal instrument by representing the culmination of many different strands of disability activism over the last few decades. Stated by Tah and Mokhtar [36], Malaysia has also shown the commitment to promote and protect the rights of people with disabilities and this is manifested by enacting new laws, formulating new policies and taking appropriate measures to comply with international law and resolve preliminary issues surrounding the ratification of the treaty into the domestic legal framework.

Methodology

This paper further looking into the establishment of strategies and measures of International and Local Planning Policy, Local and Action Plans of selected Local Authorities in selected countries and analyze whether accessibility has been successfully implemented within their jurisdiction by utilizing qualitative research design of Content Analysis with a Case Studies approach for Malaysian urban cities [11]. Selection of the case studies focuses on two aspects that is the effective implementation of accessible environment and the concept of Universal Design, its ideology and interpretation within their local context and governance to be adapted for an accessible built environment. The methods of data collection will focus on using narrative research when the stories follow a chronology of events as a literary form of qualitative research with strong ties to literature that provides a qualitative approach. It will focus on the microanalytic picture of individuals' stories, rather than the broader picture of cultural norms. The narrative characteristics taken are individual and the chronology of experiences and further collecting and restoring their experiences [5].

Literature Review

Global and Regional Concerns on Universal Accessibility and Inclusive Design

The global movement launched from the perspective of disability studies where scholars have argued that what is called physical or mental 'disability' is not simply an attribute of a person but a complex collection of conditions, activities and relationships, many of which are created by the social environment. This is sometimes called the 'social' or 'social-political perspective' in which disability is seen as a 'social construct', or more pointedly, as a 'sophisticated form of social oppression' [4] Thus, PwDs being social minorities who have been systematically discriminated against in all areas of life also face limitations in education, employment, housing and transportation are not the products of their medical condition, but of social attitudes of neglect and stereotypical

images about their capacities and needs. In all European countries, including in the United Kingdom and Republic of Ireland, comprehensive and enforceable access legislation is in place to promote and enable independent living, along with safety and accessibility.

Legislation to require accessibility is not the same thing as universal design but is an important support. The Disability Discrimination Act and the Equality Act 2010 in the UK, and similar legislation, follows another route to enforce alternative ways towards creating a more inclusive environment. This also has the benefit of applying to existing buildings, not just new-build or refurbishment, as with building codes. But, by definition, anti-discrimination legislation will only make sense in countries where other forms of equality are pervasive. Discrimination tends to surface in terms of perception where local authority officers tend to conceive of disability as a medical rather than an environmental issue [13; 16; 17]. As reported by Imrie and Kumar [17], they indicated that most local authorities in the UK have no definition of disability or tend to use medical terms like 'disability is a congenital condition' making it problematical as they conceive of disability as a disease that requires treatment. In this sense, the impairment is seen as the problem to be overcome rather than the social or environmental barriers. Although the imperative for buildings to become more 'user-friendly' may be becoming increasingly accepted by the design professions, there are still areas of ignorance or grudging acceptance just to satisfy the basic requirements of the approved document Part M of the Building Regulations 2010; Access to and use of buildings, Volume 2 – Buildings other than dwellings. Attitudes towards disability may continue to improve, but there is no place for complacency [13]. Even though western countries have been designed as an accessible built environment they still have to have a thorough commitment in ensuring the social sustainability of PwDs in social inclusion and participation.

As emphasized by Ostroff [30] that everyone is likely to experience the misfit between themselves and the environment at some time in their life. People worldwide are living longer and having longer life span within further 20 years as predicted through census reported in the United States, in London, the prevalence of disability rises with age. In ASEAN countries, the statistics of population for the disabled people and elderly in Asia and the Pacific region are reported to be increasingly rapid with an estimation of 40% of total world population [1] and with the addition of the population of 65 years and above is showing a high percentage by 2030 as the result of the baby boomers generation is aging and having longer life span as aging increases the potential of vulnerability in the environment.

The Definition of Terminology Used

Universal Design concept goes way back in 1985 when it was first introduced by Ronald Mace, an architect who had a disability himself, defines Universal Design as a 'design of products and environments usable by all people to the greatest extent possible, without the need for adaptation or specialized design' where it applies to all ages, personal abilities and sizes, with an inclusive capability that transcends barrier-free and accessible design. This concept has been accepted in a variety of design fields, such as architecture, engineering, product design, and landscape design [8; 30] Emphasized by Harrison and Dalton [13], Universal Design intent is its encompassing nature, to enable a wider cohort of people than before to benefit from accessibility, safety and usability without discriminating against anyone. However, in designing the built environment, there are inevitable limits, where Ronald Mace stated that facilities should be designed to be

usable 'to the greatest possible extent', rather than 'by all', recognizing that there are limits to providing this inclusion to everyone in all situations [31]. The Universal Design concept advances in a more comprehensive way as it has the formulation of the Seven Principles of Universal Design those characteristics of more usable design solutions, products and environments making this concept is more likely to be adopted and embraced internationally noted by researchers from all parts of the world [10, 12; 23; 27; 37]. This concept is embraced in Malaysia because of its global application and its convenience translation to the local language.

Inclusive Design on the other hand, have a very significant usage impact in the United Kingdom as introduced by Roger Coleman that emphasizes "Inclusive Design' that takes into account the needs and abilities changes throughout the life-course of a person in the design process, products, services and environments can be improved for the majority of customers in ways that are not associated with negative perceptions of age or disability. Also accordingly, the British Design Council further define inclusive design as "a general approach to designing in which designers ensure that their products and services address the needs of the widest possible audience, irrespective of age or ability" and making it official in the UK [14; 7: P.J. Clarkson & R. Coleman, 2015).

Accessibility is defined as a quality of a built environment to be accessed by people with physical disabilities and/or older people. Barrier-free design is defined as a design concept to make a built environment accessible to people with physical disabilities and/or older people by removing the architectural barriers present in existing buildings [30; 32]. As accessibility impacts Persons with Disabilities and those people who has a consequence of physical disability or impairment are in relation to the physical environment, the category of PwDs can expand and not limited to Elderly person, Ambulant disable, Wheelchair-bound, Sensory disabled and Temporary disabled. Both accessible and universal design are concerned with addressing the needs of users beyond those considered to be "average" or "typical" [9].

Findings

The Role of Local Authorities and Accessibility Strategies

The City of London is selected because of its status of being a developed country with a long living history of an old city in sustaining through countless of revolutions and urban development whilst still maintaining its old city structure. As Malaysia was once a nation of a former British colony, it is only sensible to take a city that Malaysia has been adapting its ways since independence. The United Kingdom has integrated Inclusive Design in their National Planning Policy Network and City of London has encourage this policy with other supporting legal documents implemented and it is noted to be quite successful base on the development of Queen Elizabeth Olympic Park for the London 2012 Olympic and Paralympic Games with future long-term responsibility, planning, management, and maintenance inclusive strategies.

The London City's government wants to get away from a way of thinking in which the individual is defined as the problem and in which special measures for PwDs are the main solution. The inclusive design of the physical environment means an equal form of accessibility, so that the main solution can be used by as many people as possible. This applies not only to PwDs but also, for example, to families with children in pushchairs and to the elderly. The government will make systematic efforts to promote knowledge

and stipulate a requirement of universal design in the development of the human-created environment. This Inclusive Design Strategy Legacy Corporation's high level approach to achieving this objective is by informing the Legacy Corporation's work through the first phase of planning, design and development. Once phase one is further advanced the Legacy Corporation will evaluate the approach and modify the strategy to reflect any changes in good practice [18]. The London City's government approach in tackling Inclusion issues seriously and directly to Londoners accommodating all aspect of its population growth, housing, economy, environment, transport and public space. Local government is the key for effective implementation in ensuring accessible strategies is aligned with other government policy and city's structure plans.

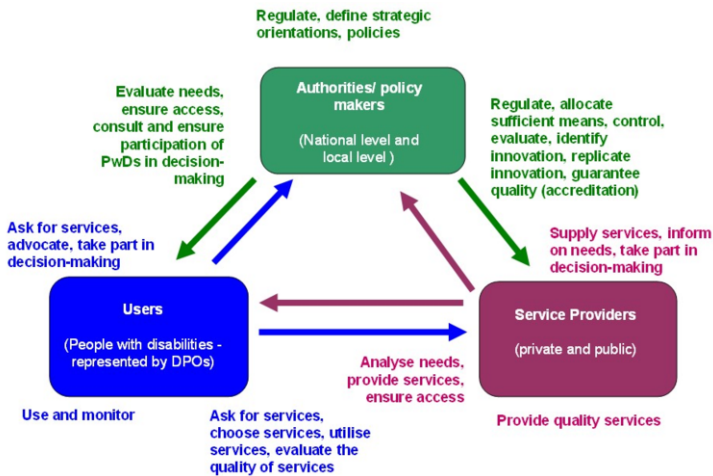


Figure 1. The stakeholders for planning accessibility strategies. (Source: Handicap International)

The intention is to formulate accessibility strategies and to work out planning process on how accessibility can be achieved by adapting successful accessible cities. Universal Design concept is the basis design and planning concept as it covers the design to the greatest extent possible to accommodate all users. Planning accessibility within Malaysian built environment is achievable by designing in compliance to the accessibility design requirements strictly imposed by Local Authorities. The role of Local Authority for implementing is because they are a hierarchy of branches of government in Malaysia, namely Federal, State and Local and noting that Local Authorities are the ground implementers. The position of local government in Malaysia is stated in item 4 and 5 of 9th Schedule of Federal Constitution, all local authorities outside the Federal Territories (Kuala Lumpur, Labuan and Putrajaya) are directly under the exclusive jurisdiction of States Government. This means, that the local State Government have wide powers to control local authorities to ensure effectiveness and efficiency. In Malaysia, local governments are endowed with the power given by the Local Government Act 1976 to provide goods and services to local people. The Local governments serve both obligatory and discretionary functions to local people and deals directly to the people and community. The reasons of aiming Local Authorities are because they have the jurisdictions to implement and enforce on site and on ground.

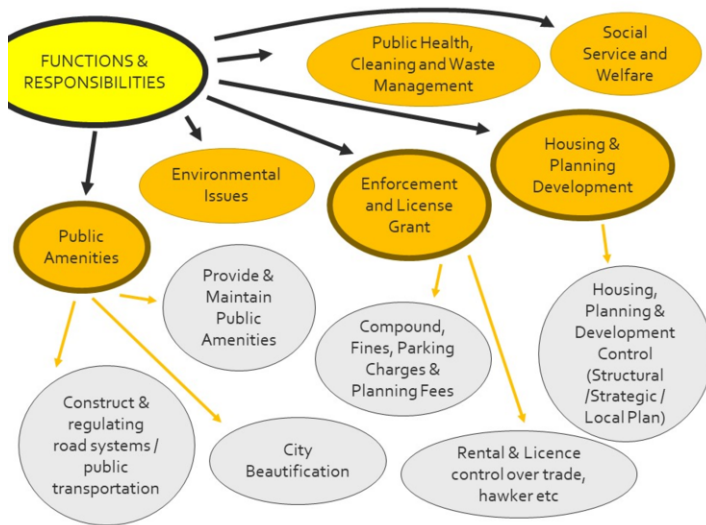


Figure 2. The role of Local Authority. (Source: author)

Adaptation of Strategies and Measures for Malaysian Cities

Malaysia has also shown some developments in catering the need of PwDs yet, there are the need to efficiently implement universal design in Malaysia, the need for more professionals or researchers in this area, and the need to revisit the current standards codes. Many have increasingly questioned the effectiveness of these legislation and standards with disabilities in Malaysia as being unsatisfactory or ineffectual in their implementation and the design outcomes achieved [22]. Previous researchers [3, 24; 28; 34; 38] has highlighted similar issues about the indication that there is a potential gap between having legislation and standards and ensuring their implementation pointing to questions about perceptions, knowledge and the understanding of professionals in the construction industry on these legislation and standards and the role these legislation and standards have in influencing these professionals to incorporate Universal Design in their design. There are also problems of detection of discrepancies of the minimum design requirements in between available existing Standards, Design Guidelines, and Local Government’s / Local Authority’s design requirements checklists that complicates more on the conveyance of accessibility knowledge. Identified Local Authorities that has promote their cities to be an Accessible City and Barrier Free City are Putrajaya and Petaling Jaya, direct interview of their officers has suggested efforts of implementation accessible strategies.

To adapt accessibility strategies and measures of developed countries, the first to take into consideration is their Discrimination act that affects civil rights of social participation for equal opportunity for all. In Asia and the Pacific Countries, where ethnicity and race are the most diverse, there are no discrimination act but they developed Disability act or similar in order to achieve equal opportunity for Persons with Disabilities.

Result and Discussion

The result was derived from reviews of literature from content analysis matrixed with all case study as follows:

Table 1. Matrix of Determinants for Universal Design & Accessibility Legislations for all case studies.
(Source: Author, 2018)

Determinant / Cities	Universal Design & Accessibility Legislations		
	City of London	City of Petaling Jaya	City of Putrajaya
Universal Design Unit	- Inclusion team of expert directly under Mayor of London	- Has placed dedicated officers to monitor Universal Design and Access Audit aspect; under Town Planning Department, Petaling Jaya City Council.	- Has set up a Universal Design and Access Audit Section; under Building and Architectural Division, Town Planning Department.
Accessibility Mission & Vision	<i>'My 20:20 Vision sets out what is needed for London to remain the best city in the world. I also want London to be the most accessible City in the world. We have shown what we can do in the Olympic Park and we can use that experience to ensure that all new development in London maintains this high level of accessibility - helping to change perceptions of disability and enabling disabled people to be part of our economy and fully contribute to our great city.'</i> Mayor of London, 2014 [21]	<i>"Sustainable PJ 2030" making Sustainable and liveable City with Good Image and Management as well as a Harmonious and Prosperous Environment".</i> Petaling Jaya City Council [19]	<i>'Putrajaya as a city where residents, workers and visitors of all ages, especially the elderly and the disabled, can live without barriers and can enjoy the same opportunities and life chances as others.'</i> Putrajaya Corporation [20]
Regulatory documents	<ul style="list-style-type: none"> Equality Act 2010: The Equality Act 2010 provides the legal framework that protects disabled people from discrimination. It replaces a range of anti-discrimination legislation, including the Disability Discrimination Act 1995 (DDA) and subsequent amendments. The Act generally carries forward the protection provided for disabled people by the DDA. Approved Document Part M of The Building Regulations 2010; Access to and use of buildings, Volume 2 – Buildings other than dwellings. 	<ul style="list-style-type: none"> Persons with Disability ACT (Act 685). Street, Drainage and Building Act 1974. Uniform Building (Amendments) By-Laws (UBBL) 1991. By-law 34A. 	<ul style="list-style-type: none"> Persons with Disability ACT (Act 685). Street, Drainage and Building Act 1974. Uniform Building (Amendments) By-Laws (UBBL) 1991. By-law 34A.

<p><i>Data interpretation</i></p>	<p>- The Equality Act 2010; provides the legal framework that protects disabled people from discrimination. It replaces a range of anti-discrimination legislation, including the Disability Discrimination Act 1995 (DDA) and subsequent amendments. The Act generally carries forward the protection provided for disabled people by the DDA. - Approved Document Part M; has listed out in detail on the requirements and provision needed with detailed drawings.</p>	<ul style="list-style-type: none"> • There are no amendments for Acts relating to building architecture such as Road Transport Act; Street Drainage Building Act (Only a clause (34A) stating to provide access for PwDs to and in building); Town and Country Planning Act (Act 172) to ensure the Universal Design aspect shall be enforced. • There are no “Penal Code” and “Punitive Clause”, this raises the problem in enforcement. • The Status of Malaysia’s National People with Disabilities Council – there are committee membership that are not named but referred to as representative of certain government agencies. <ul style="list-style-type: none"> - To recommend that Accessibility for PwDs should have a dedicated clause in UBBL with detail of specification or specification requirements scheduling 	
<p>Supplementary documents & Action</p>	<ul style="list-style-type: none"> • Shaping Neighbourhoods Accessible London: Achieving An Inclusive Environment. A Supplementary Planning Guidance For London Plan Implementation Framework. • Inclusive Design Standards • Access Statement and Consultation with Access Consultants 	<ul style="list-style-type: none"> • Strategic Plan 2016 – 2026. • Sustainable PJ 2030 • Local Plan Petaling Jaya • Universal Design Guideline • Universal Design & Accessibility Checklist. • PwDs Action Plan 2016-2022 • MS 1184:2014, Universal Design in the built environment – Code of practice (Second Revision) Pre-consultation + Accessibility Plan [during submission of Development Order (DO) & Building Plan (BP)] 	<ul style="list-style-type: none"> • Putrajaya Structure Plan 2025 • Putrajaya Green Action Plan 2025 • Strategic Plan 2016-2020 • Local Plans • RMK-11 • PwDs Action Plan 2016-2022 • MS 1184:2014, Universal Design in the built environment – Code of practice (Second Revision) • Checklist, Pre-consultation [during submission of Development Order (DO) & Accessibility Plan for Building Plan (BP)]
<p>Supporting Documents & Action</p>	<ul style="list-style-type: none"> • Impact assessment - Evaluating access statement requirements in Part M of the building regulations. 	<ul style="list-style-type: none"> • Universal Design compliance for private sector and municipal council projects for the issuance of Certificate of completion and compliance (CCC) 	<ul style="list-style-type: none"> • Compound if failure to the building or non-compliance with these By-Laws under UBBL of issuance of Certificate of completion and compliance (CCC)
<p>Future Planning</p>	<ol style="list-style-type: none"> 1. Accessible Britain Challenge Awards. 2. London Underground Accessibility Award. 	<ul style="list-style-type: none"> • Implementing ‘Assisted Living’ & Universal Design Policy • Establishing a Universal Design Master Plan 2018-2030 	<ul style="list-style-type: none"> • To draft and establish own UBBL for Putrajaya • ‘Accessible homes’ project • ACCESSIBLE PUTRAJAYA 2025

7. Conclusion

Universal Design is the most relevant concept and the current trending concept besides the terminology has been familiarize within all Malaysian Ministry and Government Agencies. Universal Design provides the design needs for the PwDs and will eventually compliment all other users regardless of age and ability and can benefit all users. To further the Universal Design concept of Inclusion to Innovation and instead of stifling creativity for architects, planners and designers and pushes them to be inventive.

Significantly this research will formulate an Accessibility Implementation Framework for use under ministry and government agencies in innovating possibilities of expanding the existing policies for empowering accessibility for all in our physical built environment, for effective implementation for our public building, public amenities and public spaces by conforming the government's plan of action that is the PwDs Policies and Action Plan for Persons with Disabilities 2016 – 2022 in line with RMK-11.

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References

- [1] Quick Facts and Perspectives: Asia-Pacific Development Center on Disability. Bangkok: Asia-Pacific Development Center on Disability, 2015.
- [2] Bendixen, Karin. Perspective from Denmark: Design for All – Point of No Return! 3rd International Conference for Universal Design in Hamamatsu, Japan 2010. Hamamatsu: International Association for Universal Design (IAUD), 2010.
- [3] Berawi, Mohammed Ali. "Designing National Policy and Strategies for Inclusive Development: Accelerating Infrastructure Development for Growth and Prosperity." *International Journal of Technology* 8, no. 5 (2017): 773-76.
- [4] Bickenbach, Jerome E., Somnath Chatterji, E. M. Badley, and T. B. Üstün. "Models of Disablement, Universalism and the International Classification of Impairments, Disabilities and Handicaps." *Social Science & Medicine* 48, no. 9 (5// 1999): 1173-87.
- [5] Creswell, John W. *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research*. 4th Edition ed.: Pearson Education, 2012.
- [6] Departementenes servicesenter 09/2009 - Impression 200. Norway Universally Designed by 2025: The Norwegian Government's Action Plan for Universal Design and Increased Accessibility 2009-2013, 2009.
- [7] Design Council, *Inclusive Design Education Resource*, 2008, Design Council, London, UK, 2008, <http://www.designcouncil.info/inclusivedesignresource/>. Cited in: P.J. Clarkson and R. Coleman, *History of inclusive design in the UK*, *Appl. Ergon.*, vol 46 (Part B), 2015, 235-247.
- [8] Erkilic, Mualla. "Conceptual Challenges between Universal Design and Disability in Relation to the Body, Impairment, and the Environment: Where Does the Issue of Disability Stand in the Philosophy of Ud?" *Universal Design and Disability* 2, no. METU JFA (2011): 181-203.
- [9] Fletcher, V. "Inclusive/Universal Design: People at the Center of the Design Process." In *The Routledge Companion for Architecture Design and Practice: Established and Emerging Trends*, 251-68: Taylor and Francis, 2016.
- [10] Gray, Jennifer A., Jennifer L. Zimmerman, and James H. Rimmer. "Built Environment Instruments for Walkability, Bikeability, and Recreation: Disability and Universal Design Relevant?" *Disability and Health Journal* 5, no. 2 (4// 2012): 87-101.
- [11] Groat, Linda and David Wang. *Architectural Research Methods*. USA: John Wiley & Sons, 2002.

- [12] Guimarães, M. P. Universal Design Criteria Standards and Codes About Accessibility of Built Environments in Brazil. Vol. 229. 3rd International Conference on Universal Design, UD 2016. Edited by D. Swallow, L. Sandoval, A. Lewis, J. Darzentas, H. Petrie, T. Walsh, and C. Power: IOS Press, 2016.
- [13] Harrison, Jim and Cathy Dalton. "The Familiar and the Strange: The Limits of Universal Design in the European Context." *JOURNAL OF UNIVERSAL DESIGN IN THE BUILT ENVIRONMENT* 1, no. 1 (2015): 49-67.
- [14] Heylighen, Ann, Valerie Van der Linden, and Iris Van Steenwinkel. "Ten Questions Concerning Inclusive Design of the Built Environment." *Building and Environment* 114 (2017): 507-17.
- [15] Hussein, Hazreena and Naziaty Mohd Yaacob. "Development of Accessible Design in Malaysia." *Procedia - Social and Behavioral Sciences* 68 (12/19/ 2012): 121-33.
- [16] Imrie, Rob. "Disabling Environments and the Geography of Access Policies and Practices." *Disability & Society* 15, no. 1 (2000): 5-24.
- [17] Imrie, Rob and Marion Kumar. "Focusing on Disability and Access in the Built Environment." *Disability & Society* 13, no. 3 (1998/06/01 1998): 357-74.
- [18] Inclusive Design Standards, 2013.
- [19] Interviews with Petaling Jaya City Council, 2018.
- [20] Interviews with Putrajaya Corporation, 2018.
- [21] Interviews with Principal Advisor Access and Inclusion, Greater London Authority, 2017.
- [22] Kadir, Syazwani Abdul and Mariam Jamaludin. "Applicability of Malaysian Standards and Universal Design in Public Buildings in Putrajaya." *Procedia - Social and Behavioral Sciences* 36 (2012): 659-69.
- [23] Kadir, Syazwani Abdul and Mariam Jamaludin. "Universal Design as a Significant Component for Sustainable Life and Social Development." *Procedia - Social and Behavioral Sciences* 85 (2013): 179-90.
- [24] Kamarudin, Hikmah, Ahmad Ezanee Hashim, Mahayuddin Mahmood, Nor Rima Muhamad Ariff, and Wan Zuriea Wan Ismail. "The Implementation of the Malaysian Standard Code of Practice on Access for Disabled Persons by Local Authority." *Procedia - Social and Behavioral Sciences* 50 (// 2012): 442-51.
- [25] Kanter, Arlene S. *The Development of Disability Rights under International Law: From Charity to Human Rights*. Abingdon: Routledge, 2015.
- [26] Kose, Satoshi. "The Impact of Aging on Japanese Accessibility Design Standards." In *Universal Design Handbook, 2e*, edited by Wolfgang F.E. Preiser and Korydon H. Smith: McGraw-Hill Education, 2010.
- [27] Lid, I. M. and P. K. Solvang. "(Dis)Ability and the Experience of Accessibility in the Urban Environment." *Alter-European Journal of Disability Research* 10, no. 2 (Apr-Jun 2016): 181-94.
- [28] Maidin, Ainul Jaria. *Legal Framework Regulating for Improving Accessibility to Built Environment for Disabled Persons in Malaysia*.
- [29] Manley, Sandra. "Walls of Exclusion: The Role of Local Authorities in Creating Barriers-Free Streets." *Landscape and Urban Planning* 35 (1996): 137-52.
- [30] Ostroff, Elaine. "Universal Design: The New Paradigm." In *Universal Design Handbook*, edited by Wolfgang F.E. Preiser and Elaine Ostroff: McGraw-Hill Education, 2001.
- [31] Preiser, Wolfgang F.E. and Elaine Ostroff. *Universal Design Handbook*. McGraw-Hill Education, 2001.
- [32] Saito, Yoko. "Awareness of Universal Design among Facility Managers in Japan and the United States." *Automation in Construction* 15, no. 4 (7// 2006): 462-78.
- [33] Series, Lucy. "The Development of Disability Rights under International Law: From Charity to Human Rights." *Disability & Society* 30, no. 10 (2015/11/26 2015): 1590-93.
- [34] Soltani, Seyed Hassan Khalifeh, Mashita Sham, Mohamad Awang, and Rostam Yaman. "Accessibility for Disabled in Public Transportation Terminal." *Procedia - Social and Behavioral Sciences* 35 (// 2012): 89-96.
- [35] Strand, Vibeke Blaker. "Norway's Ratification of the Un Convention on the Rights of Persons with Disabilities: Highlighting Current Discourses in the Field of Human Rights in Norway." *Nordic Journal of Human Rights* 32, no. 1 (2014/01/02 2014): 75-83. <http://dx.doi.org/10.1080/18918131.2013.878894>.
- [36] Tah, Ikmal Hisham Md. and Khairil Azmin Mokhtar. "Malaysia's Ratification of the Un Convention on the Rights of Persons with Disabilities (Un Crpd)." *International Journal of Business, Economics and Law* Vol 11, no. Issue 4 (Dec) (2016).
- [37] Yusof, Liyana and David Jones. *Universal Design Practice in Malaysia: Architect's Perceptions of Its Terminology*. Universal Design 2014: Three Days of Creativity and Diversity. Edited by H. Caltenco et al. (Eds.): IOS Press, 2014.
- [38] Yusof, Liyana Mohamed and David Jones. "The Application of Universal Design Legislation and Standards in Malaysia and Australia." *JOURNAL OF UNIVERSAL DESIGN IN THE BUILT ENVIRONMENT* 2, no. 1 (2016): 17-