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Vertical Greenery System as Public Art? Possibilities and challenges in Malaysian urban context

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Abstract

Integrating public art with Vertical Greenery could promote sustainable principle in public spaces. Therefore, to investigate the possibilities and challenges of integrating Vertical Greenery with public art, this paper reviews nine projects in public spaces at urban places in Malaysia, as reference studies. It explores diverse dimensions of Vertical Greenery, types of public art and how they fit each other. The findings show that there are various types, systems and methods of Vertical Greenery applied in Malaysia and in coherent with the operational definition for public art used. Yet, Vertical Greenery's promoters deal with several challenges in encouraging its vast application in urban Malaysia.

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Keywords: Challenges; potentials; public art; Vertical Greenery (VG)

1. Introduction

Public art, according to Bach (2001), is an artistic expression that is positioned in a freely accessed public space for the public to use and for everyone to enjoy. Nevertheless, Bostwick (2008) mentioned that arts advocates are consistently trying to make a case for the arts by addressing economic and social

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aspects. With less consideration on the environmental aspects of public art. She asserted that there are only a few studies conducted to explore the ways in which public art could provide an environmental purpose. Thus, one way to engage public art in environmental aspect is by increasing the Vertical Greenery (VG) technology applications on the walls of our buildings whereby a plain wall can be turned into a luscious plant-filled art vision. For example, growing and choosing plants over the typical granite or marble finish allows one to make a strong green statement, in other word means ‘greener art’(G TOWER-Rebuilding the green concept, 2012). Therefore, to investigate the possibilities and challenges of integrating VG as public art, this paper reviews nine real life projects in urban Malaysia as reference studies which include Kuala Lumpur and Selangor that have applied VG in their development. It explores the current practice of VG in buildings development in urban Malaysia; identify the purpose and objective of the VG application in the building development and determine whether VG has the potential to become a new form of public art.




1.1. Public art: An overview

The term ‘public art’ is subjected to a variety of interpretations. It is relevant to everything from subway graffiti to government-funded monumental sculpture. It has been employed as a touchstone to describe any art that is not housed in formal museums or galleries. Hunting (2005) explained that public art exists in a matrix defined by two important functions; in terms of the physical space that it occupies and secondly in terms of the origin of its existence, simplified in three-by-three grid format (Table 1.) All in all, the operational definition of public art used in this paper is an artistic expression that is positioned in a freely accessed public space for the public to use, but not simply any art placed outside yet still carries the basic notion of art which is to beautify spaces. This study differentiates the types of public art based on explanation by The Hamilton Public Art Master Plan (2009) which are summarized into Table 2.

Table 1. Definition of Public Art by its Placement and Origin (Hunting 2005)

	Private Placement	Partial Public Placement	Public Placement
Private Origin	Art purchased by individuals or corporations and placed inside office buildings, etc.	'Corporate art' displayed outside or in common areas such as shopping malls.	Privately funded art that has been donated to the city, displayed in a park.
Partial Public Origin	Works sponsored by non-profit and charitable organizations on private property.	Small memorials in street medians and low-traffic areas.	Public/private partnerships at athletic venues, etc.
Fully Public Origin	Government funded artwork placed in government offices not accessible to the public.	Government funded artwork placed inside libraries or neighbourhood parks.	Full government funding and prominent, highly visible locations.







Table 2. Different types of public art

Type / Description	Supporting images
<p>Integrated Art</p> <p>Art that is integrated physically attached to or exists as an aspect of the infrastructure. It may be integrated with landscape feature such as walls, railing/fencing or paving.</p> <p>Public art being integrated with a free standing wall</p>	
<p>Environmental Art</p> <p>Focus on interrelationships between humans and nature and may use natural materials and landscape to convey meaning.</p> <p>Public art as ecological stone</p>	
<p>Stand Alone Art</p> <p>Consists of sculptural artworks that are placed within the right of way where there is adequate space and viewing opportunity</p> <p>Coffee pot pergola as public art as well as seating area</p>	

1.2. Vertical greenery: An overview

The idea of having plants on the wall was not a new idea. Through The reviews of literature, it is found that VG has started in the early civilization, for example the Hanging Gardens of Babylon. During that time, VG functioned mostly for decorative purpose. However, the modern version of VG was initiated by Stanley Hart White, a Professor of Landscape Architecture in 1938 (Séguin, 2012). The function of VG evolved to environmental purpose beside aesthetical. Despite that, VG became popular only in the 1980s, when Dr. Patrick Blanc, a French botanist and researcher, popularized the theory and approach to grow vertical gardens (Sia, 2011). Nowadays, VG was not only appreciated for its aesthetical, environmental but also for its economic benefits. VG refers to broad and various definitions that are concluded in Table 3.

Table 3. Different definitions of vertical greenery (Badruzaman et al. 2011) Bass and Baskaran (2003) and Peck et al. (1999)

Terminology	Supporting Images	Terminology	Supporting Images
<p>Vertical Garden/Wall</p> <p>All forms of plant surface of the wall; used to determine the growing plants, up, or on the façade of buildings.</p>		<p>Green façade</p> <p>Climbing plants or cascading groundcover trained to cover specially designed supporting structures. Rooted at the base of these structures, in the ground, in intermediate planters or rooftops, the plants typically take 3-5 years to achieve full coverage.</p>	
<p>Vertical wall on Jean Nouvel’s Musée du quai Branly Source: Hart, K. (2001)</p>		<p>Green façade at First Avenue, Bandar Utama Source: Author’s archive (2013)</p>	
<p>Green Wall</p> <p>All forms of vegetation surface. This technology can be divided into two main categories; green facades and living walls.</p>		<p>Living Wall</p> <p>Consists of pre-vegetated panels, vertical modules or planted blankets that are fixed vertically to a structural wall or structure. These panels can be made of plastic, expanded polystyrene, synthetic fabric, clay, metal, and concrete.</p>	
<p>Citi Data Center in Frankfurt features a green wall featuring plants that are irrigated with recycled water. Source: http://www.datacenterknowledge.com/leed-platinum-data-centers/</p>		<p>Living wall in front of Intermark building’s porte cochere Source: Author’s archive (2013)</p>	
<p>Green space wall</p> <p>Ecosphere that doubles as an exterior wall or mixed interior/exterior spaces in new development. These walls can create multiple, synergistic uses of space.</p>		<p>Green scaffolding</p> <p>Applies mainly to eco-retrofitting, essentially wraps a light weight structure around the exterior of existing buildings to provide the full range of climatic and ecosystem functions</p>	
<p>Artist illustration of new building using a Green Space Wall Source: Birkeland (2008)</p>		<p>Example of eco-retrofit using Green Scaffolding Source: Birkeland (2008)</p>	

Biofacade wall

Referred to vegetation which was guided to climb up through the structure like wires or cables



Biofacade wall with ivy plant installation.

Source: Pasinee Sunakorn, Chanikam Yimprayoon (2011)

Vertical greenery system

Broad term referring to any ways in which plants can be grown on, up, or against the façade of a building or feature walls such as a vine, as part of a window shade, as a balcony garden, or in a vertical hydroponic system.



Vertical greenery system at Platinum Sentral

Source: Author's archive (2013)

The benefits of infusing a city with greenery varies and for the purpose of discussion in this paper, Table 4 categorized benefits of VG into three categories; aesthetic, environment and economic.

Table 4. Different benefits of VG (Peck et al.(1999), Afrin (2009), Badrulzaman et al. (2011) and (Bonham and Smith, 2008

Category	Supporting Images
<p>Aesthetic</p> <ul style="list-style-type: none"> Greener skyline and visual relief from urban environment Enhance architectural designs, create iconic landmarks Screen and isolate views Enhancing public spaces Limiting the negative psychological effects associated with property demarcation. Provides relief from the congested urban surroundings 	
<p>Economic</p> <ul style="list-style-type: none"> Reduction of cooling loads through better insulation and shading Improving acoustic insulation Increasing property values Protection of building facade 	

Symbiotic green wall to improve conventional construction wall.

Source: inhabitat.com (2009)

Lush walls create a positive perception for prospective property purchasers

Source: interface (2013)

Environment

- Reduction of the uhi effect and regulation of the microclimate
- Sound insulator and building structure protection
- Improving the air quality
- Enhancement of biodiversity by adding natural habitats in the city
- Improving rain water retention and onsite wastewater treatment
- Therapeutic effects of plants and landscape
- Improved energy efficiency
- Absorb storm water



VG has potential to increase necessary green mass in cities for vegetation.

Source: Interface (2013)

VG is characterised by its system in which it is constructed on site. A considerable amount of literature has been published on it. Badrulzaman et al. (2011), Afrin (2009), as well as Hodson- Walker (2009) reported that the two main types of VG system are modular trellis/carrier systems as well as cable and rope wire/support systems (Figure 1.). The carrier system which consist of rigid lightweight panels, are installed vertically as either wall-mounted or freestanding systems. It is designed in such a way to hold the planting media vertically. They can be used on tall buildings in conjunction with intermediate planters or on rooftops. They are able to support bigger selection of plants, for instance shrubs, ferns, groundcovers, grasses, sedges and even mosses. Conversely, cable and rope wire/support system (Figure 2.) contains a kit of parts that includes wire trellises, high-tensile anchors, steel cables, spacers, and supplementary equipment. It helps to guide plants up on the vertical surface. Vertical and horizontal wires can be attached through cross clamps to create a flexible trellis system in various sizes and patterns. Other than that, stainless steel wire-rope nets can be supported on flexible or rigid frames to cover large areas. It allows cascading groundcovers as well as climbing plants to grow up the façade on specially designed support structures. However, apart from these two systems, Skyrise Greenery (2012) added another method which is the planter system (Figure 3.). The planter system consists of planter boxes mounted at regular intervals onto a structure or frame. Stacked on top on another, they create extensive green wall coverage. Nevertheless, the system is similar to carrier system in terms of its ability to support a greater diversity of plants as compared to support systems.

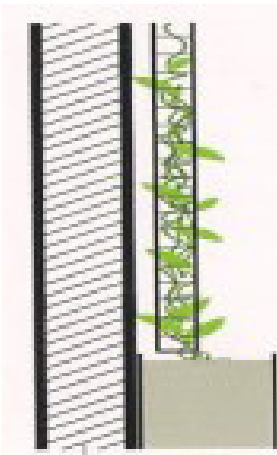


Fig 1. Support system.
Source: (Badrulzaman, et al. 2011)

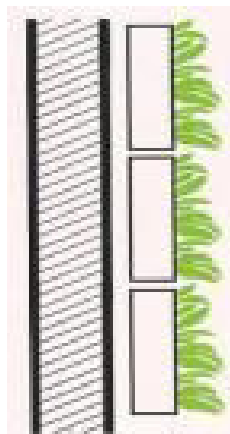


Fig 2. Carrier system.
Source: (Badrulzaman, et al. 2011)

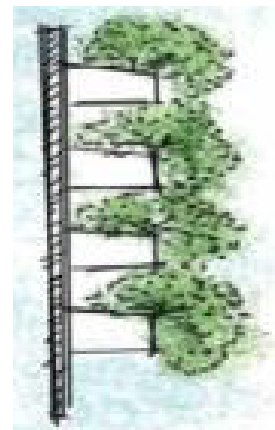


Fig 3. Planter system.
Source: Skyrise Greenery (2012)

1.3. Vertical greenery as public art

Rubin (2008) explains that successful urban greening projects can become key components to a successful project, creating the environment in which more people are comfortable shopping, working or living. Public art on the other hand becomes one of the main ways by which the local history, character and richness of the neighbourhood and its residents are reflected in the new properties. However, finding practical and effective way to exercise sustainable developments in our cities through public art strategy is yet to be fully explored. In further understanding this issue, Kate Maddison (Chrysalis arts, n.d.) from Chrysalis Arts commented that even though artistic considerations are vital in creating public art, art creator could also implement sustainable principles. What is required is a particular approach to innovation encompassing environmental, social, economic, management and practical issues and equally applied by both artists and commissioners.

Thus, this paper is suggesting one way to create a public art that is environmentally sound is through an increase of VG technologies on the walls of our buildings (Peck & Kuhn, 1999). By combining aesthetics with environmental principles, vertical gardens are certainly rewriting conventional rules of gardening as more recent green walls are often showing beautiful patterns, it is becoming a new urban art (Séguin, 2012). This idea was well supported by a study conducted by Wong et al. (2010) whereby they have carried out studies on perception of VG system in Singapore to provide aesthetic value as a parameter study. Their findings showed that all respondents were from the developer, consultant, government agencies and the resident agrees to the use of VG to enhance visual appeal. The walls are works of arts, indeed; and in a concrete jungle, a splash of living green is always refreshing and also beyond aesthetics. Institute of Landscape Architects Malaysia (ILAM 2009) has conducted two interviews to further explored VG's potential for VG to be developed in Malaysia. One prominent Landscape Architect, Hodson-Walker believes there are great potentials for VG to be further developed in Malaysia. He added, with continuing environmental pressure and government policy, VG will certainly become an important part of modern urban design. Furthermore Mr. Pua, another well-known Malaysian Landscape Architect also agrees that VG may be built as a work of art for its beauty. Yet, we must continue to explore all available options and expand our creativity beyond our imagination. Additionally, Patrick Blanc also mention about this potential in an interview by Chin Mui Yoon (2010) when elaborated that Kuala Lumpur has much potential for VG since out of the identified 8,000 plant species in Malaysia, some 2,500 grow without any soil.

2. Methodology

In order to further study the potential integration of VG and public art, this paper studies and reviews nine selected projects in urban Malaysia that are located at public spaces which include Kuala Lumpur and Selangor that have applied VG in their development. Firstly, literature reviews were carried out to obtain information on the projects and their relationship to VG application. Next, out of the nine projects, six projects were selected to obtain more information through site observation. For literature review, information on the projects was obtained from multiple sources such as company brochures, websites and company's collection and this method contributed 3 projects. This finding shows that different parties were involved and show strong commitment to implement VG in urban Malaysia.

For this paper, only VG that were located at public area that are highly visible were chosen. The selection was in coherent with the study by Hunting (2005), as mentioned in the literature review. The first dimension was the name of and various parties involved in the projects. This is important in identifying all the projects that applied VG in their development and parties involved. The second category is the objective of VG application. This aspect is important in order to recognize the objective of

VG application, be it aesthetic, economic or environment, and was comparable to Table 3. Next, type and system of VG was also identified. The identification was based on the information obtained from reviews of the literature shown in Table 1.0 and Figure 1.0, Figure 2 and Figure 3. Other than that, the location of the VG also was noted, based on Table 1. Next, the types of public art that the VG fall into were also highlighted. This aspect was based on types of public art mentioned in Table 2; integrated, environmental and stands alone.

This dimension is the most crucial as it will eventually prove the interrelation of public art and VG. The last measurement is the relationship of that particular VG with public art. The dimension was based on the operational definition of public art used for this paper which is an artistic expression that is positioned in a freely accessed public space for the public to use, but not just any art placed outside yet still carries the basic idea of art which is to enhance spaces. Thus, any VG projects that agree with the operational description will be considered relevant as a public art. Then, the data gained were presented in a table format according to the above dimensions for easy referencing and discussion. Lastly, in order to figure out the challenges faced by the promoters of VG in Malaysia, in depth literature review and interview were done.

Based on the study done, it is found out that there are many projects at urban areas that have applied VG in their developments. However, only nine projects that are located at highly visible area were chosen to be further discussed in this paper. The selection was in coherent with the study by Hunting (2005). Thus, further research should cover in depth in order to understand the total view of the subject.

3. Findings and discussion

Table 6.0 summarizes the findings of the nine projects derived from the data collected for easy referencing and discussion. As mentioned previously all nine projects are located at public area whereby the public can directly see and interact with the VG for example, Lot 10 Roof Top, Bukit Bintang (Figure 4). Thus, this finding shows that VG has the quality to be implemented as public art as they do not only benefitted the environment but also the public.

Among all the projects, three projects were identified to implement VG for aesthetic value only (Figure 6) whilst another two projects used VG for its environmental and aesthetic benefits (Figure 5). Alternatively, only one project was intended to utilize VG as environmental and economic purpose. On the other hand, two projects were recognized to employ VG for all its objectives; aesthetic, environmental and economic (Figure 7). In relation to this, it can be concluded that VG in Malaysian urban context was not applied for its aesthetical purpose, but also environmental purpose. This strongly supported the proposal of this paper to introduce public art that only aesthetically pleasing but beyond that. Other than that, six projects fall into the category of green wall (Figure 8) while only one project utilized Vertical Greenery System or Living Wall. However, there are also two developments that utilize Green facade / Bio-facade wall. It was also noted that among the nine projects studied, six of them apply carrier system only (Figure 9) and another one used support system while the remains were identified to use planter system. In other words, this finding explains that there are various types and systems of VG that have been applied in Malaysian urban context. Thus, it should not be a big problem for VG to be further develops as public art as it is flexible to any design.

Referring to the location dimension, seven VGs were placed outdoor while, only one project located the VG both indoor and outdoor whilst another one was positioned in an indoor and semi indoor environment. For example, Platinum Sentral which was developed by Malaysian Resources Corporation Bhd. (MRCB) is located in an outdoor space while G Tower's VG is located at both indoor and outdoor (Figure 10.0 and Figure 11). This demonstrates that VG can be the perfect choice as public art as it is flexible in terms of its location therefore giving a bigger opportunity for the public to appreciate the art.

The analysis of the findings of a relationship of VG with public art, all projects are coherent with the operational definition of public art. Thus, it can be concluded that VG has a strong potential to be implemented as a public art.

Table 5. Collected data according to respective dimensions for easy referencing and discussion

Name, Party Involved	Objective of VG Application	VG Type & System	Location	Data Collection Method	Types of public art
1 The Sage Community Centre, Kuala Lumpur (Earthiagreen)	Environment	Green Wall Carrier	Semi indoor	Literature review	Integrated art Environmental art
2 Platinum Sentral, Kuala Lumpur (Malaysian Resources Corporation Bhd.)	Environment	Green Wall Carrier	Outdoor	Literature review Site observation	Integrated art Environmental art
3 Intermark Integra Tower, Ampang, Kuala Lumpur (MGPA Asia Developments)	Environment Aesthetic Economic	VG System Planter	Outdoor	Literature review	Stand alone art Environmental art
4 G Tower, Ampang, Kuala Lumpur (Earthiagreen)	Environment Aesthetic Economic	Green Wall Carrier	Outdoor Indoor	Literature review Site observation	Integrated art Stand alone art Environmental art
5 Lot 10 Roof Top, Bukit Bintang, Kuala Lumpur (Sek San Design)	Environment Aesthetic	Green Wall Carrier	Outdoor	Literature review	Integrated art Environmental art
6 DBKL - KL Heritage Trail Green Wall, Kuala Lumpur, (Lian Shun Technology)	Environment Aesthetic	Green Wall Carrier	Outdoor	Literature review Site observation	Integrated art Environmental art
7 Veo Melawati Sales Gallery, Selangor (Pembinaan Muzqi (M) SB)	Aesthetic	Green facade Planter	Outdoor	Site observation Interview	Stand alone art Environmental art
8 Saujana Resort Entry Green Wall, Selangor (Artisat SB)	Aesthetic	Green Wall Carrier	Outdoor	Literature review	Integrated art Environmental art
9 Qaseh Entry Green Wall, Kinrara, Selangor (Whola SB)	Aesthetic	Green facade / Bio-facade wall Support	Outdoor	Site observation Interview	Integrated art Environmental art

Note:

All Vertical Greenery of the projects are located at public area and are in coherent with the operational definition of public art used

Based on the in depth literature review and interview done, it is found out that the main challenges faced by VG promoters were maintenance and cost implications of the VG. Besides that, among other challenges identified were the lacks of understanding of the role of green skins among people and environment-construction managers, lack of access to technology, and the deficit of research for professionals. In addition, there are a few considerations that need to be taken care of such as the structural protection support and waterproofing protection of that system, proper drainage system, long-term lightweight planting medium, fertilization, environmental conditions, and maintenance planning.

In order to overcome the high initial cost implications bear by the producer and users of green technology, Malaysian government has establish Green Technology Financing Scheme (GTFS) as an effort to improve the supply and utilization of Green Technology (<http://www.gtfs.my/news/green-technology-financing-scheme-website>, 2013). In the scheme, the Government will bear 2% of the total interest/profit rate. In addition, the Government will also provide a guarantee of 60% on the financing amount via Credit Guarantee Corporation Malaysia Berhad (CGC), with the remaining 40% financing risk to be borne by participating financial institutions (PFIs). GreenTech Malaysia has being appointed as the conduit for the Green Technology Financing Scheme (GTFS) application. The scheme is expected to provide benefits to more than 140 companies of which the application will be open starting from 1st January 2010. Thus, Vertical Greenery practitioners are eligible for this scheme as the technology falls into the Building and Township sector.



Fig 4. Lot 10 Roof Top, Bukit Bintang Source: Author's archive (2013)



Fig 5. KL Heritage Trail Green Wall Source: Author's archive (2013)



Fig 6. Veo Melawati Sales Gallery green wall. Source: Author's archive (2013)



Fig 7. Intermark Integra Tower Source: Author's archive (2013)



Fig 8. Platinum Central's VG located at outdoor area Source: Author's archive (2013)



Fig 9. Saujana Resort Entry Green Wall Source: Earthia Green Wall (2013)

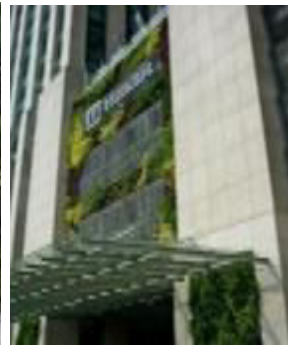


Fig 10. G Tower's VG located at indoor area Source: Author's archive (2013)



Fig 11. G Tower's seven-storey outdoor VG Source: Author's archive (2013)

4. Conclusion

In summary, both public art and VG can contribute to the quality of life as they complement each other in terms of its aesthetic, environmental and economic quality. This study has found the combination of both will not only create a public art that is high in aesthetic quality but also environmentally sound. This

paper has also proven that VG has a strong potential to be implemented as public art and it may be built as a work of art for its beauty. Nevertheless, we must continue to explore all available options and expand our creativity beyond our imagination. The basic knowledge is within people that are involved in the built environment, yet the functionality and practicality of these designs have to work hand-in hand with the artistry and creativity of the product, in order to create a beautiful and functional living wall art. Hence, more attention should be given on developing creative, innovative and quality environment that will eventually encourage further research on integrating VG as public art in the urban landscape. Other than that, it is also found out that the Malaysian government also supports the growth of green technology's development in Malaysia by initiating the Green Technology Financing Scheme (GTFS). Lastly, it is hoped that this exploratory study will be useful in upgrading the functions, ideas and strategies in approaching VG and public art and will also be the launch pad for the public art to go much further, especially in Malaysian urban landscapes.

References

- Afrin, S. (2009). Green Skyscraper: Integration of Plants into Skyscrapers Green Skyscraper : Integration of Plants into Skyscrapers. Kungliga Tekniska högskolan.
- Badrulzaman Jaafar, Ismail Said, Mohd Hisyam Rasidi, (2011). Evaluating the Impact of Vertical Greenery System on Cooling Effect on High Rise Buildings and Surroundings : A Review. Skudai, Johor, Malaysia: Senvar 12 2011. Retrieved from www.epublication.fab.utm.my/180/1/SENVAR1201.pdf
- Bostwick, E. A. (2008). Going Green with Public Art : Considering Environmental Standards in Public Art Policies. University of Oregon. Retrieved from <https://scholarsbank.uoregon.edu/xmlui/handle/1794/6576>
- Chin Mui Yoon. (2010, September). Wrapped in life-giving green. The Star online. Kuala Lumpur. Retrieved from <http://thestar.com.my/lifestyle/story.asp?file=/2010/9/26/lifeliving/6948675>
- Chrysalis arts. (n.d.). Public Art Sustainability Assessment.
- Collet ,M. (2011). Van Gogh Painting Recreated as an Amazing Living Wall. Retrieved March 28, 2013, from <http://www.environmentalgraffiti.com/news-amazing-living-wall-recreating-vangoghs-wheatfield-cypresses>
- G TOWER-Rebuilding the green concept. (2012, January). G TOWER-Rebuilding the green concept. The Star. Kuala Lumpur. Retrieved from <http://thestar.com.my/lifestyle/story.asp?file=/2012/1/13/lifeliving/20120113102515>
- Green Technology Financing Scheme | Green Technology (n.d.). Retrieved from <http://www.gtfs.my/>
- Green Roofs. (2008). Introduction to Green Walls Technology, Benefits & Design. Retrieved from http://www.greenscreen.com/Resources/download_it/IntroductionGreenWalls.pdf
- Hui, S. C. M. (2013). Benefits and potential of vertical greening systems Introduction The Need for Greenery Vertical Greening Systems, 2013.
- Hunting, D. (2005). Public Art Policy: Examining an Emerging Discipline, 2(1), 1–7. Retrieved from www.asu.edu/mpa/Hunting_PublicArt.pdf
- Institute of Landscape Architects Malaysia (ILAM). (2009). Landskap Bulletin No 4. Institute of Landscape Architects Malaysia (ILAM), 20.
- Japan for Sustainability. (2008). Green the City with “Greenery Curtains” Japan for Sustainability. Retrieved March 28, 2013, from <http://www.japanfs.org/en/pages/028539.html>
- Jodi Summers = Industrial Real Estate » HOW TO BE GREEN (n.d.). Retrieved from <http://www.socalindustrialrealestateblog.com/?p=1509>
- Living Walls: 15 More Vertically Vegetated Buildings. (n.d.). Living Walls 15 More Vertically Vegetated Buildings WebEcoist. Retrieved March 28, 2013, from <http://webecoist.momtastic.com/2009/10/19/living-walls-15-more-vertically-vegetated-buildings/>
- Meinhold, B. (2009). North America's Largest Living Wall Installation by PNC Inhabitat - Sustainable Design Innovation, Eco Architecture, Green Building. Inhabitat. Retrieved March 26, 2013, from <http://inhabitat.com/north-americas-largest-living-wall-installation-by-pnc/>
- Mohd Fabian, H., Osman, M.T. and Mohd Nasir, B. (2012). Towards Integrating Public Art in Malaysian Urban Landscape. *Pertanika J. Soc. Sci. & Hum*, 20(2), 251–263. Retrieved from [http://www.pertanika.upm.edu.my/Pertanika20PAPERS/JSSH20Vol.02020\(2\)20Jun.202012/0120P_g20251-263.pdf](http://www.pertanika.upm.edu.my/Pertanika20PAPERS/JSSH20Vol.02020(2)20Jun.202012/0120P_g20251-263.pdf)

- Muhizam Mustafa. (2009). Public Art in the Federal Territory of Putrajaya : Questions of Value and Role. *Journal of Arts Discourse*, 8, 69–96. Retrieved from http://wacanaseni.usm.my/WACANASENIJOURNALOFARTSDISDISCOURSE/JOURNAL_8PDF/3_muhizam.pdf
- Peck, S. W., & Kuhn, M. E. (1999). *Greenbacks From Green Roofs: Forging A New Industry In Canada Status Report On Benefits , Barriers And Opportunities For Green Roof And Vertical Garden*.
- RC3D Commercial and Residential Design- Architectural & Green (n.d.). Retrieved from http://www.rc3d.com/news/news2.php?subaction=showfull&id=1233606960&archive=&start_from=&ucat=1&
- Séguin, M.-L. (2012). Green Walls. *Architecture Posts*. Retrieved from <http://landarchs.com/author/marie/>
- Shunmugam, V. (2010, September). By the artists, for the people. *The Star*. Kuala Lumpur. Retrieved from <http://thestar.com.my/lifestyle/story.asp?file=/2006/9/3/lifearts/9475789&sec=lifearts>
- Sia, A. (2011). *Growing Gardens In The Skies*, 1975.
- The Hamilton Public Art Master Plan. (2009). *The Hamilton Public Art Master Plan* (p. 8). Hamilton, Ontario. Retrieved from <http://www.hamilton.ca/NR/rdonlyres/E56AF9EE-8398-4A3D-99AE-530D2E135D72/0/pampch1.pdf>
- Watts, P. (2009). Report from Seattle Public Art Conference. *Ecoartspaceblog*. Retrieved March 23, 2013, from <http://ecoartspace.blogspot.com/2009/07/report-from-seattle-public-art.html>
- Vertical gardens a green solution for urban setting - Times ... (n.d.). Retrieved from http://articles.timesofindia.indiatimes.com/2013-02-14/pune/37099689_1_vertical-gardens-private-garden-conventional-garden