

Public Awareness Hub through Urban Spaces Case of Kuala Lumpur Trash Museum

¹Law Lu Sun, ²Susane, ¹Sumarni Ismail, ¹sarizal Yusman Yusoff, ¹Nangkula Utaberta, ¹Mohd Yazid Mohd Yunos, ¹Nor Atiah Ismail

¹ Architecture Department , Faculty of Design and Built Environment, Universiti Putra Malaysia

² B. Arch Student, Architecture Department, Faculty of Engineering & Built Environment, Universiti Kebangsaan Malaysia.

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ABSTRACT

The project proposed a trash museum as a macro school of recycling in the city. The outcome of the trash museum being with the factual issues in Malaysia where, solid waste contributed by Malaysian is increasing tremendously from current 23,000 tonnes each day and foreseen to reach 30,000 tonnes by the year 2020. The proposed Trash museum intend to highlight the issue to the public and create awareness of the public towards recycling and build a green community through public spaces. Besides, it is also to encourage joint effort of government and public to move forward recycling a success and achieve zero waste community and of course to providing an adequate platform for the NGOs to promote green and exchange ideas and opinion on green issues at different fields. The idea sparked by considering a change to the current street culture where a street or a public space can be a place to learn social issue, where in this proposal will be the waste management. The key is to make the public space an interactive learning path, the idea of less is more come to place where the public spaces are designed from recycle materials to demonstrate the benefit and the importance of recycling, the spaces highlighted the current situation of our built environment, giving impact to the people the urgency of this issue. The site located at the center of Kuala Lumpur, it concurred 3 allocated parcels which in total approximately 4.039acre. They are currently recreational spaces and an abandoned sunken pedestrian walkway, it is beneficial to connect these parcels and become a good learning route and at the same time to revitalise the current lost space. A good precedent for this is the Danish National Maritime Museum, part of the museum is public walkway. This public walkway allow the public to notify the existence of the museum as well as creating an interest to the public towards maritime issues.

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INTRODUCTION

The amount of waste continue increase lead by the increase in population and development. As little as 5% out of the total waste are being recycle. This waste issue is the top three environmental problem in Malaysia. If the awareness and action are not well measured, this waste issue will eventually affect more environment problem, social and economy of the country.

The government and authority do not provide enough facilities and awareness to the public. For instance, only recycle bin are placed at public area, residential area are not given any campaign to separate the household waste for recycling.

The waste management companies are mainly privatised. The red light given from them was not delivered to the public, public are hidden from fact where currently 80% of our land filled site almost reach it's full capacity.

The public awareness involve many stages. The children should learn the green awareness through education and parents while the adults and elderly should gain more awareness through media and deliver their knowledge in green to the younger generation. Unfortunately, public realisation did not prolong. For example, the incident at MRR2 on 21 December 2013 lately. The transfer station was closed, the irresponsible garbage truck driver dumped the garbage along the highway stretching 100m long. Public start to realise that the waste

Corresponding Author: Sumarni Ismail, Architecture Department , Faculty of Design and Built Environment, Universiti Putra Malaysia.
E-mail: sumarni.upm@gmail.com

that they produced are humongous as there are 150 tonnes of garbage at that time at the road side. (nst,2013) Nothing has been done, government did not take this incident as a lesson to raise campaign while public slowly neglect about this.

All of the awareness need action to prove and individual enthusiasm towards green is the vital point to make recycling a success. The awareness need to be all time exist. Public has to be mindful of recycling, they have to be notify about the current garbage issue and its impact in future. A place for the public to exchange their knowledge about green is necessary. This place need to gather all the expert, NGO and public to share the issue and to overcome hand to hand. This place is a centre to gain recycling knowledge. Therefore, the trash museum is proposed.

The main objective of the Trash museum is to create deep impact and awareness on recycling to the public through an interactive way where it should be a joint effort of government, private and public. In order to make it a success, the trash museum has to be a public gathering space, transition space, exhibition space which selling the idea of recycling. It is an interactive transition space that allow public passed through the exhibition space for free of charge and create their interest to explore further.

At the same time, the space should be a safe and comfortable space for public and a platform for the NGO to promote green awareness through exhibition, products, activities and a place for knowledge exchange in term of recycling, ie the exchange knowledge between green building material and green fashion. This is a place where public found realisation of the importance of recycling.

It is the challenge of this thesis to explore the possibilities of interactive exhibition through urban spaces, utilise recycle material as building material and explore the design of safe and comfort public transition space.

A few precedents study have been reviewed such as the CRRM museum, the trash art museum and the nuclear waste adventure trail & museum have given the thesis another possibility to discover whereby a trash museum is necessary to create awareness and it is not a must to be a building oriented so long it can deliver the message to the public.

The trash museum adopted green strategies such as placing right building orientation, bigger facade surface at north-south orientation and minimum facade surface at east-west to reduce surface heat gain. Instead of having double skin, the balcony with big overhang roof is act as a buffer zone. This buffer zone reduces the direct heat gain from external and reduce the cold air from inside gallery to escape to external fast. This direct reduce the energy waste from the air-conditioner.

roof water is collected from two different roof. The water collected from roof A is mainly distribute to the toilet use, plants watering and cleaning. Other green strategies like minimizing the building foot print to give way to the landscaping and public activities, the green wall at the plaza is a contribution wall of the public where the public contribute the empty bottle or can at the wall, the double layer green roof to reduce direct heat gain are widely use in the pedestrian walkway

There are no way that the building in Malaysia is not air conditioning especially situated in the city. In this thesis, mechanical ventilation is involved but the system works in two ways either in semi ventilated or full ventilated. Semi ventilated means that the space can be natural ventilated when mechanical ventilation is not required, especially during night time when the carbon level in the city is reduced, the city turns cooler, natural ventilation can be adopted.

Full mechanical ventilation is apply at the theatre where mechanical ventilation is a must for comfort and hygiene.

No renewable energy is adopted in this thesis because the site analysis found out that renewable energy system is not suitable for the site. Therefore, saving energy by passive system takes lead in this thesis.

This thesis also look into social responsibility. The link bridge connects two important public buildings helps to create better interaction between public and authority. Besides, the thesis also look into revitalise abandoned sunken walkway by having more visible and happening plaza allows better interaction between public.

A safe public place is important to the public. Therefore, the sunken plaza looks into the principle of making good defensible space.

Background Study:

The site is located at walking distance to the Sultan Abdul Samad building, the DataranMerdeka Kuala Lumpur. It is divided into three parcels, first parcel is the current dataran DBKL, second parcel is the sunken roundabout under the flyover of Jalan Kuching, and the third parcel is the DBKL open food court which currently being demolished to give way to the River of Life (ROL) project.

The site located at the boundary between the concrete jungle of Kuala Lumpur and the green lung of city centre (Lake garden). It has ultimately create a story line of the objective on the proposed trash museum. The total land area of the site is approximately 4.039acre.

In this proposal, the Trash museum is a public building and is part of the linkage from Taman TasikPerdana to DataranMerdeka and government buildings, therefore, land use is secondary but the aim to provide public

spaces and connectivity is the major concern. In this proposal, the assumption the Trash museum is belong to the authority of DBKL and manage by Department of Environment, Malaysia.

No car park is provided because there are two LRT stations in walking distance less than 300m, plenty of car parks have been provided nearby the site. Furthermore, the proposal is target for better environment. It is one of the challenge of the proposal to achieve public easy access and disable friendly.

The site is a good gathering place. It has potential to link the Underground square of Dataran to the museum and to the DBKL building with safe and comfort walkway. It is a definitely pass by junction. It is also a strategic place as jetty for the river transportation. The connection of the site and river able to boost the pedestrian movement, the river becomes the celebrity of the site.

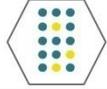
Design Process:

The trash museum idea starts with the inspiration from the precedent study of the Nuclear Waste Adventure Trail & Museum where the intention of the museum - the impact of nuclear waste to the environment, has transfer to the public through the huge and emptiness space without any further exhibition in a building like typical museum.

Secondly, according to my finding, *learning streets and learning squares are an extended school education where the territory now includes local facilities. This is able to allow interaction between everyone's idea and opinion thus expanded their social responsibility*[4]. Again, with this statement, the thesis has once again got its courage to discover what is a museum like if the museum is not a total building oriented architecture but a build up of 60% urban spaces and 40% building oriented.

The design process started by setting up a list of programming and space requirement. The programming is tabulated as below:

Table 1: Programming.

Programming	Activities	Space
Permanent gallery. Trash as art. 	Public can see, feel and even smell how does a land fill site like. Management can organise activities such as trash hunting, public to hunt for certain trash to learn something about it.	A transparent space to fill the trash, a taper form needed to create the trash falling feel at that space.
Bi weekly gallery. A contribution from the public. 	A gallery where displaying the contribution by the public, ie red rubber week, plastic week and etc. The routine of the collection from public allow public learn how to recycle and the importance and the necessity of recycling.	A random space for collection. Can create node using this collection space.
Talk, seminar, workshop 	The seminar and workshop to promote recycling.	A transparent space that can be seen from outside, noticing the event in the seminar room yet having good sound barrier and insulated.
Art sculpture from trash 	Public to use the trash to form an art sculpture and as a display. Management can have competition over this or encourage contribution from students.	An open plaza to display the art sculpture.
Give and take corner 	Public contribute empty bottle, trash management / NGO / volunteer turn it into green bottle or other useful item. Public can take the end product back home.	A space that is visible for public to give and take. Can create an art wall from the contribution.
Pledging corner 	Public pledge to recycle.	A space for public to stop and read the message from the pledge hall.
Carbon footprint monitor system 	A system that monitor the carbon footprint in the building of Kuala Lumpur, the carbon footprint amount indicated by the façade. The brighter the façade, the higher the carbon foot print if the day.	Mechanical space needed. A space to receive the carbon footprint signal and transmit information to the façade lighting system.

The programming of trash museum assist in developing the circulation, zoning of the site. All these information then digested and transform into the master plan of the site and surrounding. The master plan

highlighted revitalisation of the river front by having new pedestrian walkway next to the river, introducing connection through shaded walkway to station Bandaraya, DBKL building, Dataran Underground mall, Lake garden and Masjid Jamek, having water taxi at multiple stop along Gombak river and Klang river while creating a new bicycle lane.

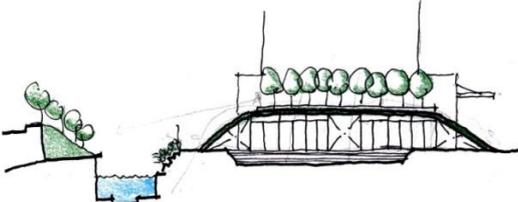
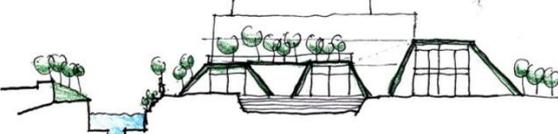


Fig. 1: the overall master plan and its circulation.

The design process involve testing on building typology, the typology adopted (no. 2) allows its ground floor for public activities, all internal building spaces as lifted up to upper floor connected to the DBKL building by a link bridge.

The analysis of the three options of building typology as tabulated.

Table 2: Section analysis

NO	TYPE	ADVANTAGES
1	The land is remould with green scape and building is located at ground level. 	Low building and does not overtake the current view of menara DBKL. Good for commercial as the commercial space are all located at ground floor
2	Raise up the building. 	Entire ground floor space belongs to the public. Shadow from the building provide shading, building above become protection during rain. Become a landmark to the space.
3	Break the building to smaller unit with green roof above. 	Opportunity to connect building with pocket space.

Due to the site is divided into 3 individual parcels and separated by road, a proper zoning for public convenient is crucial. In this exercise, spaces are divided into 3 zones, the informative zone, the gallery zone and the recreational zone.

Parcel 1 - Informative zone

Most high pedestrian pass by area

Parcel 2 – Gallery zone

Transition area for pedestrian to cross from every junction

Parcel 3 – Recreational zone

After the zoning has been identified, the node points are introduced to connect the pedestrian, provide interesting point for the pedestrian to move on. Besides, the existing tunnel has been skewed and widened to provide better comfort walking experience.

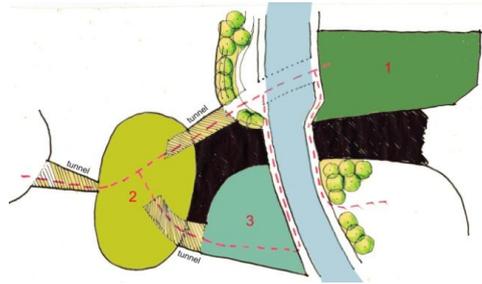


Fig. 2: sketches of zoning.

4 Design solution:

The space experience are then carefully look into it zone by zone. At zone 1 is where the gallery building placed. As this space is the highest pedestrian area, the ground floor is given to the public activities, leaving only the building structure stands at ground floor. The structure are then carefully placed and framed with cleansed recycled material.



Fig. 3: zone 1.

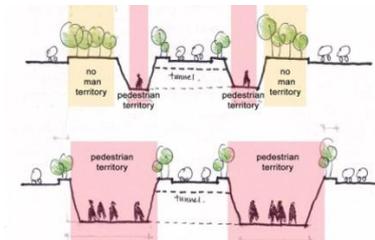


Fig. 4: zone 2.

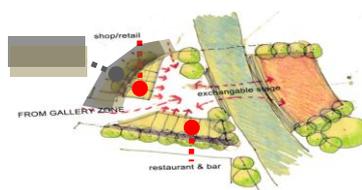


Fig. 4: zone 3.

The main issue of zone 2 is the unsafe pedestrian walkway. In this exercise, activities and space experience are being tested in the sunken roundabout to find the best solution for safe and comfort walkway utilising the syntax theory where walkway are design to be widen, activities are injected into this zone. The sunken plaza allows the public to experience what is the feel walking under the dump site of trash. It is also a pledge corner for public to pledge for recycling. Believing this programming and space experience will make the pedestrian to make a stop and start a conversation.

Zone 3 is a park with plaza and some commercial units. At this zone, a tropical deck is created to connect the sculpture park across the river proposed by the ROL project. Public able to experience the huge natural canopy with commercial selling trash art product.

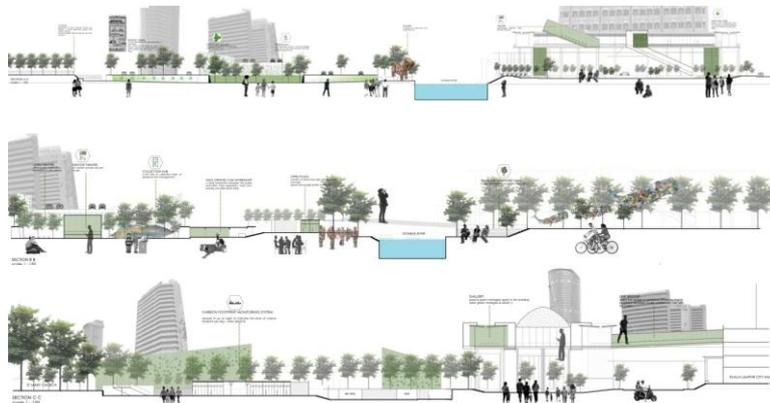


Fig. 5: zone 2 perspective.



Fig. 6: zone 3 perspective.

There are many entrances to the museum compound, the sections show the flow of the museum from different entrances.



Conclusion:

Trash museum is not available in Malaysia, it is a new theme of museum. Therefore the resources and information are limited. Most of the resources are obtain from other countries in Europe which has different site context and climate with Malaysia. This has limit the further research in trash museum.

As recycling is not popular in Malaysia, the success of the trash museum is not guarantee. Especially when the thesis proposal was first introduce to lecturers and external panel. The feedback was throwing rubbish everywhere is a habit of Malaysian and it is difficult to change their attitude towards recycling. Indeed there are Malaysian who always do it but study found out that there are Malaysian who are striving for recycling campaign for better environment, especially the NGOs. In my nutshell, Malaysian have to change their attitude towards trash management in order for better living environment.

The collective information of river of life (ROL) project was tough. Even thou the ROL project run by the authority is mainly for public. Unfortunately, most of the information collected are just general information. The detail information ie the river water level, the strategy of overcoming the flood are confidential. This has result some assumption in the thesis based on the general information collected.

Another limitation to this thesis is the typology and type of the museum. Studies found out that ordinary museum setting is not successful and there are no interaction between the exhibition and the visitors. This thesis explores the possibility of different kind of museum which the space and visitor interact each other through the exhibition. The trash museum no longer a museum that is compartmentalized in just a building but through urban lost space. Unfortunately, the idea of a museum not building oriented was not having good support.

The thesis has achieve its objectives through the design in overall. The biggest succeed in this thesis is during the design process, many trials and scenarios being explored. The thinking process was fruitful for me. This exploration has brought a lot of new ideas and leave impact to the final outcome. Besides, the design solution of the abandoned sunken plaza to become the gallery has met my expectation. Nevertheless the tropical

walk and the open plaza, both have ended with an ideal solution to me. The eclipse shape of the gallery building was another achievement for me as in the earlier design stage I was timid to challenge the building form.

The gallery building at the other hand was a failure for me in term of its space experience. The gallery can be further develop but it was not done as planned due to my personal time management. The work schedule was out of hand at the end of the semester. The detail of the facade was not fully develop as well in term of design and technical part. The other item that upset me was the presentation of drawings. The site was having too many levels and all the levels was not much differences. The drawings were prepare in my personal and my tutor understanding, neglecting the understanding from the panel.

In general, the thesis has achieve my goal to try on new typology of museum and the thesis goal and objectives. It can be further develop and investigate for better design outcome.

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