

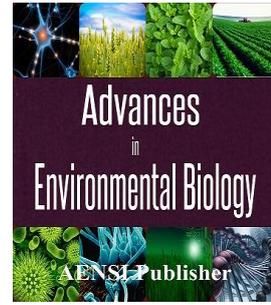


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Effects of Rapid Development of High-Rise Buildings to the Environment in Penang Island

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ABSTRACT

The scarcity of land in Penang Island have seen more high-rise building in recent years which have encouraged the developers to move the development of high-rise buildings to hillside and on reclaimed land. However, the unplanned and rapid developments of high-rise buildings are open to risks and challenges to environment and people. The negative impacts of rapid development of high-rise building in Penang Island to the environment include deforestation, soil erosion and landslides, sedimentation and siltation of downstream rivers, loss of open spaces, coastal land reclamation and traffic congestion. The objective of this study is to identify the effects arose from the rapid development of high-rise buildings in Penang Island and to find the best practice in the development in Penang Island. Data were obtained from project stakeholders such as consultants, contractors, local authorities and non-government organizations. As according to the respondents interviewed, they opined that traffic congestion as the most serious problem from the development and there is an urge in improving the public transportation and infrastructures in Penang Island in order to ease the problem. A better and more sustainable development of high-rise building can be accomplished with the proper and balance development planning.

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INTRODUCTION

A set of housing policies that used by the previous government for 27 years has been revoked by the current Penang government with an introduction of a new guideline It allows the rapid growing of high-rise building density and lead to the increasing in the high-rise building construction. To analyze the policies and guidelines into detail, the density of high rise building rose from 3 units per acre to 87 units and 30 units per acre to 120 units for low and medium cost flats. Hence, the building height has increased by three or four fold. For example, a 6 storey building can now become 24 storey building [2]. There are challenges in the rapid development of high-rise buildings in Penang Island in term of environment that are directly affecting the quality of life of the residents in Penang Island.

Methodology:

The method of analyzing data from semi-structured interview or open-ended question related to the opinions and perspectives of respondents is qualitative method. Nonetheless, semi-structured interviews will be conducted to a sample of respondents related in the effect of overdevelopment of high-rise building in Penang Island. The data gathered are analyzed to determine, explain and examine the effects of rapid development of high-rise building to the environment in Penang Island. Data are obtained from personal interview with 12 respondents a Moreover, a small number of interviews may be enough when researchers pursue straightforward research questions to resolve problem in local practice in applied field [1]. Therefore, there are a total of 12 respondents approached in this study mainly due to the availability of the respondents and limited availability of time.

RESULTS AND DISCUSSION

(i) *Demographic Background:*

Of all the 12 respondents who participated in the interviews, 3 of the respondents are from Majlis Perbandaraan Pulau Pinang (MPPP) and 1 of them works as a researcher in the MPPP Council, 1 works as

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building inspector from Building Department and the other one works as assistant director of development planning. Out of the 5 respondents who are from NGOs, 2 of them are the president of the organization, 1 of them is the treasurer and another 2 of them are working as researcher. Out of the remaining 4 respondents, 2 of them are the supervisor and project manager from each of the contractor firm respectively and the last 2 respondent are an architect who works in architect firm and a quantity surveyor who works in consultant firm. In terms of number of years of working experience, 6 out of the total respondents are having working experience of more than 10 years in their respective organization or department, 4 of them have already worked for 6 – 10 years and only 2 of them have 2 – 5 years working experiences in their respective organization or department. All of the departments or organizations were established for time more than 10 years.

(ii) *The Environmental Effects from Rapid Development of High-Rise Building in Penang Island:*

The research revealed that there are a balance number of respondents who agreed and disagreed that there is rapid development of high-rise buildings in Penang Island. However, the effects of the high-rise building development to the environment that provided by all of the respondents include traffic congestion, lack of green spaces, muddy and dirty sea, soil erosion due to high-rise building development on hillside and destroy of mangroves forest.

All the respondents indicated that traffic congestion is the major environmental effects caused from high-rise buildings development that affecting the environment of Penang Island. The high-rise residences will even caused more heavy traffic and transports. The rapidly growing high-rise buildings in Penang Island are bringing problems to the major and minor roads in the city also stated by the interview participants. According to the respondents, it is because car park that is provided by the high-rise building for each unit is limited and therefore causing the illegally parking on the streets. Moreover, cars are going in and out on the newly constructed buildings and higher number of vehicles on the road is significantly causing the hectic traffic congestion in Penang Island nowadays. Most of the respondents are having the same thought of it.

Analysis of the interview data showed that the second effect of environment is the lack of green spaces. The development of high-rise building in Penang Island lacks green spaces where limited of public parks available and limited of accessibility to the beaches and gardens as they have been privatized for the people who owned the area of housing as according to the researcher from NGOs. Despite all the development of high-rise buildings by the developers, there are lacking of the development of public parks and gardens as mentioned by the respondents.

Interview data also revealed that there is pollution to the sea when the contaminants from the sediments that are released to the sea during the filling activity of land reclamation for the construction of high-rise building. The sea water becomes muddy as the suspended sediment loads increased. The polluted sea water often affects the lives of the marine. Fishes were killed from the polluted environment and other marine lives are in danger too. Penang Gurney Drive is the place where the contaminated and muddy sea can be seen which worried the respondents.

The analysis indicated that soil erosion caused from hillside development is the most frequent environmental effect that revealed by most of the respondents. The soil erosion is worrying most of the respondents as they were afraid of the occurrence of landslides in Penang Island. According to the environmentalists from one of the NGOs, there were minor landslides happened quite frequent in the past few year during the development of high-rise buildings on hillside land.

Respondents opined that mangroves forest is very rare in Penang coastline now. The destruction of mangroves forest in Penang Island is caused by the high impact development of high-rise buildings on the reclaimed land. Reclamation of land has caused the heavy contaminants and also disposal items during construction to destroy the mangroves forest.

(iii) *Current Solutions and Future Suggestion in Solving the Problem of Environmental Effects from the Rapid Development of High-Rise Buildings in Penang Island:*

In the final interview question, the interviewees were asked to suggest or recommend any current solution to solve the problems occurred and any future suggestion on the developments. The current solutions include introducing of proper development plan and improve public transportation whereas the future suggestions are creating people-centric development and emphasize shifted on other social development rather than physical development.

Most of the respondent opined that to solve the current problem of rapid development of high-rise building, the first thing is to reveal the Penang Island Local Plan. The aim of Penang Island Local Plan is as guidance for proper planning of development. According to the respondents, the draft Penang Island Local Plan shown by the Town Planning and Development Department Penang Island is limited to contribute in a proper development in the island. From the analysis data, the respondents indicated that there is a suggestion to involve Penang Island residents to contribute in the forming of the Local Plan in order to create a truly livable city.

Another suggested current solution by most of the respondents from the data analyzed is to have a proper and good public transportation in Penang Island. The reason is the respondents commented that the increase of

density of development would bring for more density of populations which needs more public transportations in order to form a proper developed and traffic connected city. A proper and well developed public transportation will enhance the life of the high-rise building residents where they will just have to move from the high-rise unit to the ground level and public transportation is available within walking distance according to a researcher in NGO. He also mentioned that in other countries with good public transportation, they are able to have more and more high-rise building without making the area congested with traffic. Another respondent added that if there is no improvement in public transportation, cars will be the only option for most people and there will be demand in more complex road infrastructure in Penang Island.

Interview data also revealed that the future suggestion to the development of high-rise building is to conduct a more people-centric development. In other words, the development of high-rise building in Penang Island should be constructed according to Penang Island resident's need instead of merely for the profit making of developers and investors. According to one of the respondents, a consultant, he mentioned that with people-centric development, more affordable high-rise residential buildings will be constructed and Penang Island residents are able to afford to buy and own a house. Moreover, there will be more public amenities such as green spaces, gardens, parks and public transport will also enhance the life of people in Penang Island and making its development to be more people-centric.

The respondents indicated that emphasize should be also on social development in Penang Island rather than merely putting the efforts in physical development. Rather than just having a physical developed state, Penang Island should be equipped with well development of social-economic, educational and medical institutions and environment. One of the contractors suggested that resource conservation and solid waste management is very important to protect the environment during the ongoing physical constructions in the state. The analyzed data also shows that educational and medical institutions have to be improved in order to cater more students and patients. Some of the government schools are in poor condition where limited education facilities are available for the students as according to the interviewee. The interviewee who wanted to have better medical development explained that there is an urge in enhancing the Penang Island general hospital.

Summary:

In order to build a better development in Penang Island, further suggestions include not destroying scenic green hills, promoting automated parking spaces and the development of high-rise building should be consistent with the development of other infrastructure to avoid road congestion.

Nonetheless, the physical development that involves social elements also very favorable in the future development so that to the need and demand of the Penang Island residents are included to the development. Therefore, any kind of developments in Penang Island will be balanced and integrated instead of weigh on one aspect especially only on the physical development. Environmental effects can also be reduced and controlled and eventually a greener, sustainable and livable Penang Island can be achieved. Thus, it is believed that a better quality of living place will be existed in Penang Island in not long time.

REFERENCES

- [1] Charmaz, K., 2012. Expert voices, in: S.E. Baker & R. Edwards, How many qualitative interviews is enough, National Centre for Research Methods Review Discussion Paper, pp: 21-22, Retrieved from <http://eprints.ncrm.ac.uk/2273>.
- [2] The Borneo Post, 2012, Retrieved October 20, 2014, from <http://www.theborneopost.com/2012/06/15/penangites-regret-construction-of-high-rise-buildings/>