PUBLIC SPACE DESIGN TO MINIMIZE THE EFFECT OF EARTH QUAKE AND TSUNAMI DISASTER

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Dalam mewujudkan konsep ruang publik yang dapat meminimalisir dampak gempa bumi dan bencana tsunami ini digunakan metode internalized, yang sering disebut sebagai pendekatan profesional, dimana perencana membuat konsep sesuai dengan keahlian yang dimilikinya. Dalam konsep ini diperoleh suatu kesimpulan mengenai pentingnya konfigurasi ruang publik tertentu yang berperan sebagai mediary space. Dan satu hal yang tak kalah pentingnya adalah bahwa kita harus terus memberikan motivasi kepada masyarakat untuk berpartisipasi dalam membangun kembali daerahnya.

Kata kunci: public space, tsunami, community participation

1. General Problems

Most of the waterfront cities in Indonesia haven’t been designed in details, include the cities in Banda Aceh. Moreover, to face the big earthquake and tsunami disaster, we really haven’t ready yet both in technical aspect or the people comprehension about the impact of the disaster. So when the disaster came, people even didn’t understand what was going on, and the disaster happened with many people died. It was touching the hearts of many people in the world especially in Indonesia.

From what was said on magazines and televisions, we know that some incidents happened during earthquake and tsunami disaster when the victims tried to save theirselves as follows.

- The speed of the seawave damaged the settlement as if free from obstruction/barriers.
- The 3-10 meters seawave came suddenly without any information and anticipation for the people at all.
- The victims tried to escape and to find some shelter area as highland, the hills, or high rise buildings that could save them.
- The buildings could not save them properly from huge seawave, and the other buildings were destroyed by the big seawave.
- The infrastructures that surrounded the coastal town area were destroyed.
- The city structures were missing without any trace.
- The landscapes include the greenbelt in coastal area were dragged along by seawave and a large part were missing.
The incidents above show us how it is difficult for the victims of the disaster to escape and find out a safe place for them because of the high velocity of the seaway and also that there is no clear escape route for them when the disaster came.

With the concept taken in this paper, it is expected that the effect of earthquake and tsunami disaster will be minimized in coastal towns of Indonesia, especially in Banda Aceh.

**2. Methods**

The waterfront design concept here, using the qualitative approach with internalized method (Darmawan, 2002). The method known as a professional approach, with the designer skill on making concept according to his/her desire based on knowledge, aspiration, and personal creativity. The skill refers to the logical argumentation that is embedded in all modes of systematic inquiry, starting from systematic theory-making to more episodic justifications for design action. So, this method also needs a literature review to develop case-specific programmatic information, to gain familiarity with typological precedents, and to garner facts for normative action (Groat and Wang, 2002). The literatures used in this concept are the literature about waterfront city development, public space, and people participations.

**3. The Concept Of Waterfront City**

Looking at the condition of Banda Aceh that almost can be seen its pattern, it’s time for us to muse over and look for the concepts that can be applied in this city that is considering the local contents. According to L.Azeo Torre (1989), some of the aspects for waterfront city development consist as follows.

3.1. Theme
However history is an important factor to determine theme. Then theme will be successful if we can analyze and predict the landuse, climate, material, scale, and the meaning of space.

3.2. Image
The image of the public space can be created according to the users’ needs, for example the romantic public space, the luxury impress of the material performance, recreative, etc.

3.3. Authenticity
A waterfront that is live together with water dependent activities is the basis for an authentic and enjoyable experience. For example, the tiny city of Bosa in Sardinia demonstrates the simplicity and success of authentic waterfront fishing community.

3.4. Function
No matter how unique or exciting a waterfront development is, it will be successful only if it has good functions on all levels. From regional access and circulation to adequate parking capacity, to ease and comfort of pedestrian movement, to the visitors experiences, all levels must sequence successfully as well as meet capacities on peak activity days.

3.5. Public perception of need
To form a consensus, a potential developer must sell his or her idea to the majority. Carefully formulated, well thoughtout plans that effectively respond to theme, image, authenticity, function and financial and environmental concerns must be brought before interesting citizens in public meetings. The developer must be open to ideas and feedback from these sessions, which will help him to anticipate what will be accept and what will be not. The developer must understand what core elements must be realized successfully within the total project.

3.6. Financial Feasibility
If any landuse development can be successful in a city, then waterfront development is feasible. There is nothing comparable to a successful waterfront development, if effectively packaged, designed, promoted, managed and operated. However the development must be sound in its understanding of demographics, community buying power, response to the project, and future prospects.

3.7. Environmental Approvals
The permit process for waterfront development has become increasingly difficult. The developer must be open, research the ecological processes of the project area, design to mitigate impacts and utilize the development site’s resources in a logical and conscientious way.
3.8. Construction Technology
No matter where the location of the waterfront development is, one of the major tasks will be to stabilize the edge where land and water meet. Traditional techniques ranged from setting stones in either breakwater or riprap fashion, to the later more economical use of timber. Stability is based on complexity, and barrier islands are great examples of principles of nature. The dunes, plantings, and fauna allow for flexibility but can withstand the onslaught of the inevitable storm.

3.9. Effective Management
Whether the waterfront development is being a public or private thing, long range management will be crucial to its success. The facility must be progressively managed to provide an excellent environment and services for the user. More and more public facilities are being managed by private, nonprofit, or tax exempt organization.

4. The Concept Of Public Space
The principle of designing a public space according to Stephen Carr (1992) are consist of three critical dimensions emerge from our values and from the foundation of our perspective on public spaces: needs, rights and meanings. Although these are not the only important qualities, we believe they often are not addressed when public spaces are developed.

This perspective offsets the frequent tendency to emphasize the physical qualities of a site to the exclusion of other qualities, a view that is unidimensional and fails to cover the full array of factors that are critical to successful public spaces. An emphasis on the physical attributes gives a simplistic, deterministic conception of the function of public spaces, one that has turned out to be limiting in many respects.

The main point of view is the understanding to the interaction of people and places and how this affects the ways settings function. It considers a range factors including the natural qualities of the environment, the users and potential users, their cultural and demographic backgrounds, and their economic status. It encompasses the context of setting, the people, resources, and structures in the area, including other public setting. Most important, it places public settings and their analysis in a framework that examines the history of the site, the tradition of the users, and the relationship between the history and the tradition to the context.

5. Public Space Design Of Waterfront City
The earthquake and tsunami disaster form the bitter experience let us to muse and think over, how to build the damaged city again. If we try to observe the coastal areas that were hit by the disaster, it needs the integrated thinking to handle the coastal area design. At least it can reduce the physical damage and the human victims.

The public space in historical view give the wide meaning about the various forms and their characters, related with social, economic and culture. In physical way, it can be formed of public garden, yard or plaza, a place that have commemoration, the market of earth products, roads or pedestrian sidewalks, playground, community open space, greenways and parkways, indoor market place/atrium, neighbourhood spaces and waterfront or riverfront/lakefront and pier.

Public space can be applied as mediary space from coast line until to the settlement edge. This mediary space need to be designed in layers so it has function as a barrier to the speed of tsunami sudden storm that come to community housing (see waterfront redesign concept).

And then the configuration and construction pattern of community housing also must be design so the effort of people escaping can be overcomed quickly (see housing configuration design).
Finally, public space as part of waterfront city must be designed well and use as a place that can accommodate community activities.

Table 1. Analytical Scale of Participation

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<td>7. Planning Appeals</td>
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<td>Degrees of Tokenism</td>
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<td>5. Structure Planning</td>
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<td>12. Anthropological Study</td>
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6. Analitical Scale Of Participation

The table below is a composite of the scales so far discussed. It indicates the ways in which the participation process can be analyzed. The diagram can be imagined as a type of complicated slide rule where each scale can be moved up or down in relation to its neighbours. It is then possible to outline or describe the sort of conditions likely to operate in any situation. However, there are factors that may be not represented on the scale which have to be considered.

Where high levels of participation are thought desirable then the planner/designer must thinking in terms of community administration, self build together with community planning and design. This situation would also presume high levels of participatory democracy together with some form of decentralization of power and decision making (see The Table of Analitical Scale of Participation).

Based on the concept, it would be worried to the level participation of communities in Aceh. However we all have to enhance their spirit to participate in the recovery after earthquake and tsunami disaster.

7. Conclusion

Public space as *mediary space* is a very important element in waterfront city design. Important aspect in waterfront city is considering community’s needs (*needs*), obeying the obtain regulation of space design (*right*), and the meaning of that space design for people (*meaning*), besides community participation is really needed in Aceh redevelopment process.

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