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“Science and Technology in Islamic Perspective: Synergy and Theirs Contribution to Empower Nations”



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**PROCEEDING OF THE 5th INTERNATIONAL CONFERENCE
ON GREEN TECHNOLOGY**

***Science and Technology in Islamic Perspective:
Synergy and Their Contribution to Empower Nations***

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Science and Technology in Islamic Perspective: Strengthen National Resilience and Unity of NKRI (an appropriate step by green and multipurpose terminal development)

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Abstract. The Indonesian archipelago surrounded by many oceans that has high risks in disruption and disturbance of security and national unity. Defense and national security system can be strengthened stronger by inter-regional connectivity. Transportation terminal has a very important role to realize the connectivity. This paper aims to make theories and concepts in application of Science and Technology to develop of Green and Multipurpose Terminal which reinforce and strengthen the connectivity between regions and national defense. The method uses a technique of assessment theory and conceptual to develop transport terminals. The results obtain Green Terminal concepts that promote social, economic, and environmental aspects. Green Terminal can be realized by implementing Green Infrastructure in building and landscaping, Green Building which emphasizes on efficiency, adaptive to climate, using local materials, and appreciate to sites and users. Multipurpose terminal supported by integration of schedules and information, integration of social and environment, integration of tariffs and payment, integration of physical facilities, and integration of network, land use, and regional facilities. Green and Multipurpose terminal would be realized based IMTAQ and science and technology. Green and multipurpose terminals are designed based IMTAQ and science and technology will strengthen and support resilience and integrity system of NKRI

Introduction

Indonesia is known as a maritime country that has 13.466 islands separated by vast oceans (Geospatial Information Agency, 2014). This condition will lead to issues related to the integrity of the Unitary Republic of Indonesia (Negara Kesatuan Republik Indonesia-NKRI), where the connectivity between regions become stunted and prone to rupture the unity of the country (disintegration). In the aspect of economic development, the geographical conditions will lead to uneven in the development and its results (disparity) between the welfare and prosperity of the region. Stacking results of economic development progress occurred in Java, while the people in isolated area or another remote island is getting left behind and live in poverty. Poor condition also occurs in the border area between the Republic of Indonesia and other countries. If the potential for wealth and natural resources are viewed, Indonesia can become wealthy and prosperous country, as long as it is well managed and the results can be felt equally to all citizenry. Wealth of Indonesian marine and terrestrial is very large and diverse, so the extent of the sea and the land is prone managed and used illegally by foreigners than Indonesia. Seeing the opportunities and challenges, we need a strengthening of inter-regional connectivity in the corners of the country through activities for all modes of transportation by land, sea, and air. This task was entrusted to the government, assisted

by all the Indonesia people as stated in the Pancasila and UUD 1945. Garis-garis Besar Haluan Negara (GBHN) 1993 as Constitution Guidelines of State Policy mandate that in the Second Long Term Development (Pembangunan Jangka Panjang Kedua-PJP II), the nexus development which includes transportation, postal, telecommunications and more support should be directed to economic growth, national stability, and equitable distribution in development, by penetrating the insulation and backwardness of remote areas that will further solidify and strengthen embodiment Wawasan Nusantara and national Resilience. One effort to mobilize the strength of national resilience is the mastery of the Science and Technology. In principle, Science and Technology studied and mastered to realize the life of the nation towards a better and prosperous. This paper addresses the importance of the role of science and technology applications in terminal infrastructure development in Indonesia to strengthen inter-regional connectivity to build the nation unity according to the purpose of the Master Plan Percepatan dan Perluasan Pembangunan Ekonomi Indonesia (MP3EI). Terminal can be used to secure the country from internal and external disturbances. Another role of terminal is the support in achieving equitable development and results, so can realize the equitable of Indonesian prosperous. Another aspect that is often overlooked in the development of physical facilities is a religious value which is needed in the spiritual growth of its users. Public infrastructure must also be equipped with facilities that support religious activities in an effort to improve existence of human to Allah swt. The method is the study of theory and conceptual that can be used as a implementation reference of Science and Technology in the development of terminal infrastructure for public services, eco-friendly, integrated, comfortable, safe, and multifunctional. Islam as a universal religion to become source of law in the form of the Qur'an and Sunnah can be used as a reference for scientists, researchers, academics, governments, and interested parties in developing science and technology in various fields. The development concept that is expected in terminal infrastructure in Indonesia can work together with the Resilience and National Security Program or in Indonesia is called Program Pertahanan dan Keamanan Nasional (Hankamnas) in order to realize equitable, affluent, prosperous, and secure for all Indonesian society. Resilience and National Security will strengthen the sovereignty of the state and encourage the strong of national unity, to build Wawasan Nusantara, and the high sense of Bhinneka Tunggal Ika which is based on Pancasila and UUD 1945.

Methodology

This paper presents the results of theoretical and conceptual thinking about the application of Science and Technology in the development of environmentally-friendly and multifunctional terminal to reinforce and strengthen the connectivity between regions and national defense. Besides that, this paper presents Islamic perspective on Science and Technology in maintaining the sovereignty and integrity of NKRI. The developed method is the study of theory and conceptual that can be used as a reference to implement Science and Technology in the development of transport terminal infrastructure.

Results and Discussion

1. National Resilience

National Resilience is defined as a condition or a depiction of the circumstances that should be met. The ideal conditions realize the enabling of a country to have the capability to develop national strength to against threats and disruptions to the survival

of the nation. National resilience is to become an approach or a method to support activities specifically for national development. As an approach, National Resilience illustrates the integral approach. In this case, integral in the meaning is an approach that reflects between all aspects or contents, either at the time of building or life problem solving. In terms of thinking, this approach uses systemic thinking (Soepandji, 2007). National Resilience is as a doctrine that one of the typical conception in Indonesia about arranging and conducting state. As a basic doctrine of national, National Resilience concepts included in the GBHN for everyone, community, and state officials receive and run it (Soepandji, 2007). According Martasuta (2010), National Resilience is a dynamic condition of a nation containing tenacity and toughness in overcome all challenges, threats, obstacles, and interference come from inside and outside of the country that directly or indirectly jeopardize integrity, identity, survival of the nation and state. National Resilience elements consist of (Martasuta, 2010):

- a. Natural aspects include: geography, population, and natural resources.
- b. Social aspects include: Ideology, Politic, Economic, Socio-Cultural, and Resilience-Security.

Some Factors that affecting the National Resilience in economics field include:

- a. Earth and natural resources
- b. The number and ability of the population
- c. Capital
- d. Science and technology
- e. Relations and foreign policy
- f. Infrastructure
- g. Management

The discussion in this paper emphasizes factors that affect National Resilience in Science and Technology application to infrastructure development, particularly land, sea, and, air transport terminals. Three main aspects being the emphasis in this paper are science, technology, and terminals.

2. Islamic Perspectives about Science and Technology

Among the major problems faced by Muslims in the modern era is the ruination of scientific ethos among Muslims and the rise of the Western world as the masters of Science and Technology (Kosim, 2008). The first Problem is low scientific ethos that making Muslims to be isolated from the global scientific world. This condition is very ironic because in the classical era, for more than six centuries, Muslims are at the forefront and be the center of the world in the science development. Meanwhile, the second problem is the rise of the Western world as the master of science and technology, bringing a serious problem because of the development of science and technology in Western has secular style thus bring negative effects such as; secularism, materialism, hedonism, individualism, consumerism, destruction of family pattern, promiscuity, and drug abuse (Kosim, 2008). Islam strongly disagrees with the existence of ignorance, poverty, and underdevelopment, because these three factors provide great opportunities Muslims into kufr. Therefore, Islam provides the motivation to continue to learn and requires people seek knowledge and develop technology. The word science comes from the Arabic is 'ilm (' alima-ya'lamu-'ilm), which means knowledge (al-ma'rifah), then developed into the knowledge of the nature of something that is understood in depth. From the origin of the word 'ilm is then translated into Indonesian be science. The word is mentioned in Qur'an, such as the decree of Allah swt,

"Read by saying your God Allah who created you. Allah has created man from a clot. Read and your God is the Most Beneficent. Allah had taught human with sentences. Allah had taught human what they did not know. "(QS. Al-Alaq: 1-5).

Technology has a sense application of science to utilize and manage nature for the benefit of the human. Philosophical foundation of technology as the decree of Allah swt, "And Allah has subjected to you what is in the heavens and whatsoever in the earth. That all are as a gift from Allah". (Q.S. Al-Jatsiyah: 13).

From the explanation, Muslims must capable the science and technology to be success and prosper, as the triumph ever achieved in the past. Science and technology can be applied in all areas and sectors of human needs. Muslims mastered the science and technology used to achieve prosperity in the world. Mastery of science and technology should be based and accompanied by Iman and Takwa (Imtak) so that the welfare and safety in the world can also be obtained in the hereafter.

3. The Relationship MP3EI with National Resilience

Masterplan Percepatan dan Perluasan Pembangunan Indonesia (MP3EI) 2011-2025 describes the prerequisites of development success that support the National Resilience System includes:

- a. The role of government and the business community
- b. Reformation on State financial policy
- c. Reformation on bureaucracy
- d. The creation of the inter-regional connectivity
- e. Policy on food, water, and energy tenacity
- f. Social assurance and poverty reduction

From the six prerequisites mentioned above, the discussion in this paper is about the prerequisites creation connectivity between regions in Indonesia. To achieve the connectivity, it needs integration connectivity components that are interconnected into one integrated planning. Some of the components form a national connectivity posture (Figure 1) which includes: (a) National Logistics System or Sistem Logistik Nasional (Sislognas); (b) the National Transportation System or Sistem Transportasi Nasional (Sistranas); (c) Regional development with Rencana Pembangunan Jangka Menengah Nasional (RPJMN) and Rencana Tata Ruang Wilayah Nasional (RTRWN); (d) information and communication technology (ICT).

Komponen Pembentuk Postur Konektivitas Nasional			
SISLOGNAS	SISTRANAS	PENGEMBANGAN WILAYAH (RPJMN dan RTRWN)	ICT
1. Penentuan Key Commodities	1. Keselamatan Transportasi	1. Peningkatan Ekonomi Lokal	1. Migrasi Menuju Konvergensi
2. Penguatan Jasa Logistik	2. Pengusahaan Transportasi	2. Peningkatan Kapasitas SDM	2. Pemerataan Akses dan Layanan
3. Jaringan Infrastruktur	3. Jaringan Transportasi	3. Pengembangan Infrastruktur	3. Pengembangan Jaringan Broadband
4. Peningkatan Kapasitas SDM	4. Peningkatan SDM dan Iptek	4. Peningkatan Kapasitas Kelembagaan	4. Peningkatan Keamanan Jaringan & Sistem Informasi
5. Peningkatan ICT	5. Pemeliharaan Kualitas Lingkungan Hidup	5. Peningkatan Akses Modal Kerja	5. Integrasi Infrastruktur, Aplikasi & Data Nasional
6. Harmonisasi Regulasi	6. Penyediaan Dana Pembangunan	6. Peningkatan Fasilitas Sosial Dasar	6. Peningkatan e-Literasi, Kemandirian Industri ICT Domestik dan SDM ICT Siap Pakai
7. Perlu Dewan Logistik Nasional	7. Peningkatan Administrasi Negara		7. Peningkatan Kemandirian Industri ICT Dalam Negeri
Penguatan Konektivitas Nasional Dilakukan dengan Mengintegrasikan dan Mensinergikan Rencana Sislognas, Sistranas, Pengembangan Wilayah dan ICT			

Figure 1. Connectivity Components
Source: Coordinator Ministry of Economic Affairs, 2011

Components that formed National connectivity posture described globally as shown in Figure 2 that illustrate the framework of national connectivity. Figure 2 is the result of

integration of the four national connectivity components are formulated into a vision of a national connectivity include Locally Integrated, Globally Connected.



Figure 2. National Connectivity Vision

Source: Coordinator Ministry of Economic Affairs, 2011

The meaning of Locally Integrated is integration of connectivity system to support the movement of commodities, namely goods, services, and information effectively and efficiently in NKRI. Therefore, it needs integration of node and transport network, inter-modal transportation services, communication and information and logistics (Coordinator Ministry of Economic Affairs, 2011). While that is a Globally Connected is a national connectivity system that effectively and efficiently are connected and have a competitive role in the global connectivity through the international network system on the seaport and the airport (international gateway / exchange) including custom and trade / industry facilitation (Coordinator Ministry of Economic Affairs, 2011).

4. Transport Terminal Infrastructure

4.1 Sustainable Transportation

At the beginning, it has been argued that the strategic function of the transport infrastructure, especially the terminal is to maintain and improve the connectivity and interaction among regions of the country, so that the unity of the country is getting stronger. National Resilience system can be maintained by strengthening the defense and security system of the universe people is coordinated in transport terminal by land, sea, and air modes. Terminal transport as a mode of people and goods transport is supported by the resilience and security system that is integrated, for example, airports and port facilities in Indonesia was originally a military airport and port with the intention of keeping the defense and security in various regions of the country, but in the end utilized as a passenger terminal facilities and goods. Region airports and ports in Indonesia until now supported by many interests and functions, which in addition to as transit passengers and goods, as well as support for military activities.

The role and function of the terminal infrastructure for all modes of freight transport is essential for National Resilience in addition to its primary function as a transit nodes for passenger (people) and goods. In fact, transportation became one sector that contributed damage and environmental problems such as traffic congestion, land crisis for infrastructure, the energy

crisis as a vehicle fuel, traffic accidents that harm people and property, and the resulting air pollution to global warming and climate change. To anticipate the impact of such damage should need the development concept of sustainable transport that called sustainable transportation. The ultimate goal of sustainable transport is achievement economics and social progress that does not damage environment. The third relationship aspect of sustainable transport is shown in Figure 3.

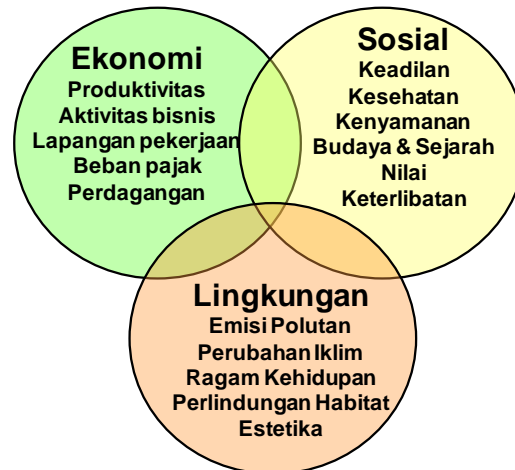


Figure 3. Correlation of Environmental, Social and Economic Dimension in Sustainable Transportation
Source : Five Winds International (2001:6); Burwell (2006:334) in Sedayu (2011)

The three-dimensions became three main objectives implementation of sustainable transport. Explanation of the three dimensions in Figure 3 as follows,

a. Economic Dimension

In this dimension includes transportation in favor of increasing the economy through increased productivity, business and trade activities, work activities in their respective workplaces, and so forth.

b. Social Dimension

The social dimension in sustainable transportation includes equitable transportation for all people, increasing public health, realizing comfort region, preservation of culture and local history societies, and the active participation of the community.

c. Environmental Dimension

Environment dimension include pollution reduction, preventing the effects of climate change, to avoid interference diversity of life, protecting habitats and ecosystems, and maintain the aesthetics and environment comfort.

4.1 Science and Technology Application in Green and Multipurpose Terminal

Science and technology application can be used in infrastructure development, particularly transport terminal infrastructure by land, sea, and air. Science and technology application was chosen so as not to disturb the balance of environment and benefit to human welfare. Science and technology used in the development of physically objects, for users that is human must be based on Iman and Taqwa, so can achieve a balance manifestation of human existence to Allah swt and the natural environment.

In principle an important role of freight terminal on land, sea, and air in addition to the interest of the transportation sector include:

- a. Strengthen connectivity and integration of NKRI
- b. Prevent gaps to achieve balanced development and results.
- c. Support National Resilience and security system
- d. Maintaining the integrity, identity, culture, and national diversity
- e. Obtain the efficiency and effectiveness of layout and design of space regions of the country.

The transport terminal can be developed into an environmentally friendly infrastructure and multipurpose (multifunctional). Environmentally friendly terminal is termed as Green Terminal, and multifunction terminal is called Multipurpose Terminal. Here are some design concepts that can be combined with the presence of environmentally friendly transportation terminals and multifunctional.

1. Green Terminal Development

Green terminal or environmental friendly terminal apply concept of environmental friendly design both inside and outside of building space. Development of environmental friendly both inside and outside of terminal building can apply a more detailed concept of Green Infrastructure and Green Building.

a. Green Infrastructure

Green Infrastructure has a definition that is not the same as environmental friendly infrastructure. The definition of Green Infrastructure is planned infrastructure as a landscape, natural resources, and the green open spaces which involves vegetation communities and other living things (Purdue Land Use Team, 2007). The examples include Green Infrastructure: park, green lanes, gardens, fields, forest area, and others that may be developed for public and private interests. The concept of Green Infrastructure can be combined with the terminal concept particularly outer space. Here are some pictures that are show the Green Infrastructure in rural area (Figure 4) and urban area (Figure 5).



Figure 4. Green infrastructure area in rural road
(Source: Purdue Land Use Team, 2007)



Figure 5. Green infrastructure area in town
(Source: Purdue Land Use Team, 2007)

b. Green Building

Green Building is one of the concepts that are appropriate and suitable to be applied in the Green Terminal development. Green Building not only

considers the use of building materials, but also the overall design aspects are also considered important in this concept.

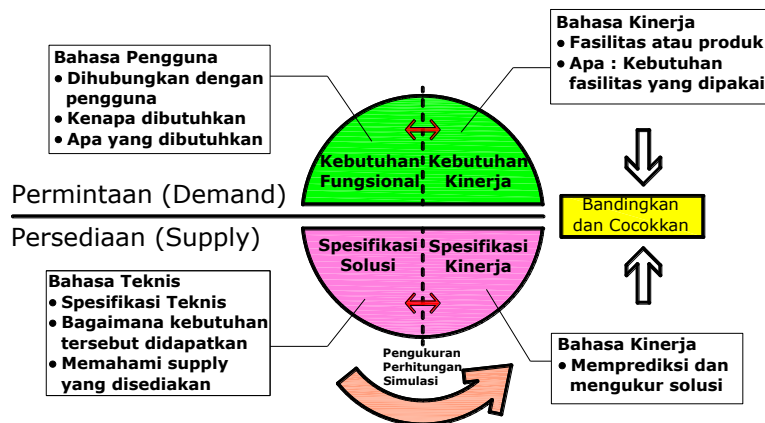


Figure 6. Infrastructure performance between two parameters
Source: Spekkink, 2005

Framework for terminal development concept refers to Performance Based Design of Buildings (PeBBU), Final Report CIBdf Domain (Spekkink, 2005) as shown in Figure 6. The PeBBU provides quality service concept of a performance-based infrastructure by considering the balance between the technical aspects of terminal include the main and supporting facilities with user needs, so that there is compatibility between the technical and functional aspects according to the user. The user is a public transport passengers who frequently use the service terminal facilities. In principle, the services of a facility must fulfil the concept of equilibrium of supply = demand. Supply is the performance and availability of terminal facilities, while demand is the need of the terminal user which are the terminal passengers. Performance in the terminal building has a sense of being able to withstand all forms of loading without reducing functionality and its service to users or occupants. Figure 7 shows the performance of buildings affected by various forms of harassment.

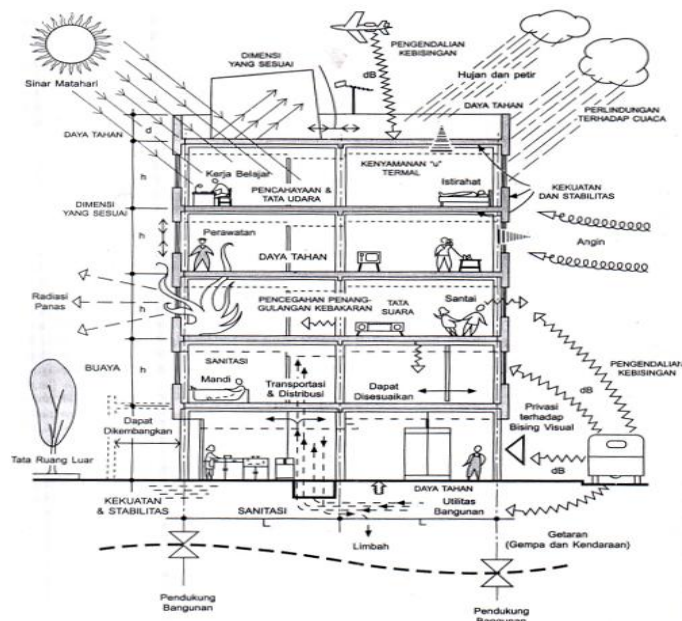


Figure 7. Building performance to all loadings
Source: Juwana, 2005:6

Green Building in essence to build built environment that is comfortable, safe, amenity, and uphold human existence to Allah sw by harmony with other human beings and appreciate the existence of the natural world. The principles of Green Building includes,

i. Saving energy consumption

The building is designed as much as possible can save energy consumption as an example in the Singapore National Library building (Figure 8). This library can save energy consumption in lighting systems and air circulation.

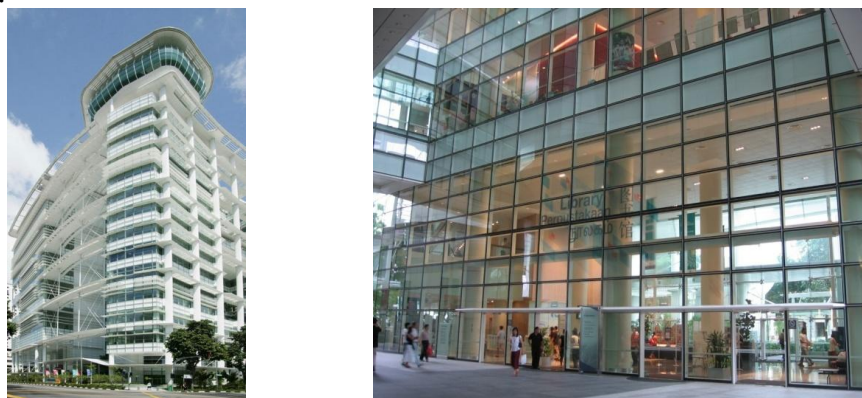


Figure 8. Energy saving implementation of green building at the Singapore National Library

ii. Adapting to climate

Climatic factors are also considered in the design and use of Green Building materials. Indonesia has tropical climate is very influential for the comfort of the building. Figure 9 is an example of the climate factors that can be used to support the building comfort.

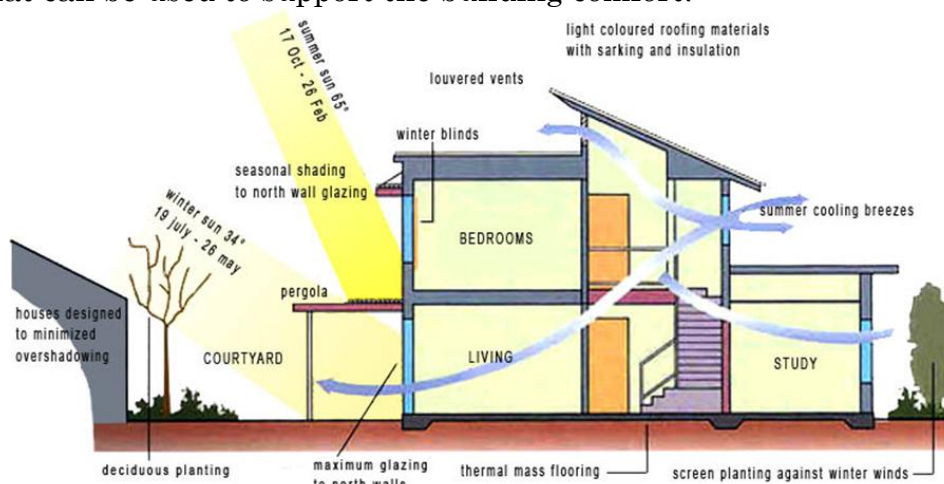


Figure 9. Good design in building space to support air circulation and lighting system

iii. Minimize the use of new materials

Green building as much as possible to the maximum use local materials and minimizes the use of new materials (modern materials).

iv. Respect to site

Land or site is the aspect that can not be ignored in the design process of Green Building. Environmental friendly building must conform to the land or site and its surroundings.

v. Respect to user

Green building is made to serve the user that is human. The building was established with regard to all the needs of users or occupants.

vi. Consider overall aspect

Green Building design considers all elements not only architectural terms. Elements of social, historical, cultural, religious, political, and other aspects are included as a design supporting factor. Design Green Building includes all supporting elements to be able to achieve the goals of service and function.

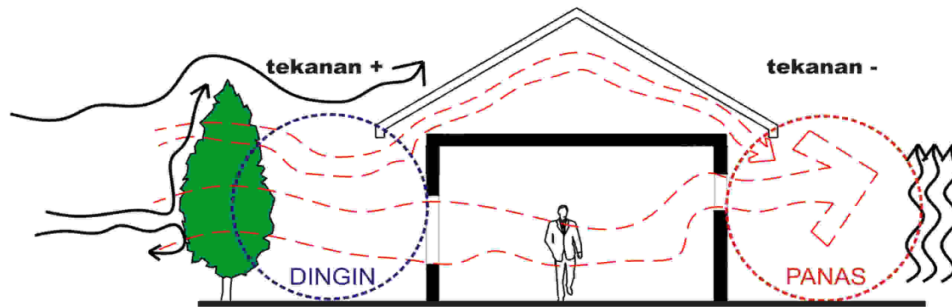


Figure 10. Potential vegetation utilization as part of site to direct the wind and shade

2. Multipurpose Terminal Development

Multipurpose terminal is the transport terminal that serves many interests or functions to support inter and intra of transport modes. Multipurpose Terminal application consists of,

- Collaboration between terminal and stakeholder
- Serving entire activity in the terminal
- Achieve effectiveness and efficiency

In principle, the service indicator of Multipurpose Terminal is classified as shown in Figure 11. The eight indicators are a new integration into the benchmark of a Multipurpose Terminal service.

Keamanan	Keandalan	Frekuensi	Ketercapaian Ruang/Uang
Kriteria Penilaian Dengan Integrasi Baru			
Komoditas	Informasi	Kenyamanan	Menarik

Figure 11. Passenger Terminal role (Criteria with New Integration)
Source: James in Dragu (2001)

Figure 11 describes eight indicators Multipurpose Terminal services consisting of security inside and outside of terminal, the reliability of public transport, the frequency of passengers and vehicles, the accesibility of terminal space, local commodities for economic improvement, modern information systems and sophisticated, terminal comfort, and terminal attractiveness for visitors. Examples Multipurpose Terminal that has good service is Terminal Bersepadu Selatan Bandar Tasik Selatan (TBS-BTS) Selangor Malaysia. The terminal is

equipped by a transit station intra / inter modes such as buses, trains, monorails, and taxi to or derived from the terminal from various regions in Malaysia. In addition, this terminal is supported by the airport shuttle transportation, port and railway station. Here are some pictures TBS-BTS with all its facilities.



Figure 12. Vehicles accessibility to and from the terminal



Figure 13. Integrated transportation with train modes

Besides complemented by transportation facilities, this terminal is supported by the supporting facilities such as government offices, commercial, banks, malls, sports, recreation, and others.



Figure 14. Commercial area such as car showroom



Figure 15. Waiting room that is equipped by commercial facilities

The integrated transportation to be accommodated by Multipurpose Terminal at least consists of five integration, namely:

a. Integration of schedule and information

Schedule and travel information to be very important and needed by passengers. Ease and achievement of the trip will be smooth if it is supported by a sophisticated information system, easily accessible, and integrated. Now, this system is developed by intelligent transportation system which seeks to provide information related to all transportation activities quickly and accurately. Figure 16 and 17 is one example and schedule information board for public transport trips.



Figure 16. Schedule and travel information in TBS-BTS Malaysia



Figure 17. Schedule and travel information in Purabaya Terminal Surabaya

b. Integration of social and environmental

The local wisdom aspect is a very important thing that can not be ruled out. Terminal was held with the aim to improve the region's economy in locally, regionally, and nationally. Terminals in an area would be a land mark or the identity of the region.

c. Integration of tariffs and payment

Integrated payment for all public transport modes will facilitate the payment of travel. Payment will be effective and secure by implementing electronic payments using payment card. Electronic payments can be combined with an employee card, student card, or other identity cards. Payment Postal placed in strategic locations that can reach for passenger, usually at public facilities such as markets, malls, schools, hospitals, and recreation place (entertainment center). This payment type will prevent illegal charges in trip cost. Figure 18 is an integrated electronic payment application.



Figure 18. Integration of transport payments with electronic pay card

d. The integration of the physical facilities of public transportation

Transportation is supported by a complete and optimal infrastructure, both in terms of quality and quantity. The integration of the physical infrastructure of transportation is very important to facilitate the accessibility and achievement for passengers to public transport. Terminal is one of the physical infrastructures as a transit node of transportation modes will be connected to the bus stops, shelters, station, and other terminals. In addition, public transport travel will through the planned lane or route in order to avoid overlap among public transport. In principle the physical facilities of transportation made for mutual support and facilitate travelling activities for

passengers and vehicles. Figure 19-21 is an example of the integration of the physical facilities of transportation.



Figure 19. Departure gate of inter-city bus



Figure 20. Shelter for train passengers



Figure 21. Bus stop for BRT Passengers

e. Integration of network, land use, and regional facilities

Macro transportation system includes three integrations that are activity systems, movement systems, and network systems. Activities in the community that aims to meet the needs will encourage movement or displacement from one place to another. This movement is served by a network of transport infrastructure in the form of a network of highways, railways, terminals, and port. All three systems are arranged in a spatial region or territory. Infrastructure network such as terminals must be integrated with land use and connect with other facilities in the region. If the integration is realized by properly it will be able to realize optimized mass public transport that more effective and efficient in reducing the impact of traffic congestion and accidents, environmental pollution, energy crisis and land, and the reduction of social and cultural relations.



Figure 22. The integration of terminals with spatial or region



Figure 23. The integration of terminal to the other facilities system within a region

Summary

Indonesia as marine and archipelago countries are very vulnerable to the disintegration of national unity. The archipelago conditions will be very susceptible to the development gap and the results, because the geographical conditions will form many difficulties in coordination between central and local area. Its required a good and robust connectivity among the region to avoid disruption of national resilience. Terminal as the node for mode change of all transportation modes by land, sea, and air will fully support and significant to NKRI. Terminal as a meeting place between the passenger and goods with a vehicle that will travel to all corners of the country. Terminal becomes a very effective and strategic as node for strengthening national unity. Terminals can be

developed further and continuously in order to be Green and Multipurpose Terminal. Application of Science and Technology is needed in supporting the concept. Islam as a universal religion has highly motivated and appreciate for the mastery of science and technology which is based on Iman and Taqwa (IMTAQ) to be applied in various ways, including the development of Green and Multipurpose Terminal. The results of this study to obtain the Green Terminal concept that promotes social, economic, and environmental aspects. Green Terminal can be realized with the implementation of the Green Infrastructure well inside the terminal building and landscape, the Green Building emphasis on energy-efficient buildings, adaptive to climate, using local materials, respect to the site, respecting the user, and consider the whole thing or factor. For the development of Multipurpose Terminal can be applied three principles, namely cooperation with all stakeholders, to accommodate all the functions and activities, and realize efficiencies and effectiveness in a variety of ways. Multipurpose Terminal should be supported by the terminal integration with the supporting and related aspects include schedules and information integration, social and the environment integration, tariffs and payment integration, integration of the physical facilities of public transport, and integration of network, land use, and regional facilities. The concept of Green and Multipurpose Terminal will be realized by high science and technology applications. Human existence as a servant of Allah related as policy makers, managers, and all stakeholders terminal will be noble if based with strong IMTAQ. Green and Multipurpose Terminals are designed based IMTAQ and refers to the science and technology will be able to strengthen and support the resilience and integrity system of NKRI.

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