

PROCEEDINGS



i-CATUre
2015

INTERNATIONAL CONFERENCE ON ARCHITECTURE,
TECHNOLOGY & URBAN INFRASTRUCTURE

MEDAN, NORTH SUMATERA - INDONESIA
3RD - 5TH DECEMBER 2015

Edited by:
Sylviana Mirahayu Ifani
Amani Darma Tarigan
Helmi Ramadhani

FACULTY OF ENGINEERING
UNIVERSITY OF PEMBANGUNAN PANCA BUDI



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INTERNATIONAL CONFERENCE 2015

Architecture, Technology & Urban Infrastructure

**FACULTY OF ENGINEERING
UNIVERSITY OF PEMBANGUNAN PANCA BUDI**

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I. Architecture, Technology & Urban Infrastructure II. Sylviana Mirahayu Ifani

Dicetak di Medan, Indonesia

PREFACE

Assalāmu'alaykum warahmatullāh wabarakātuh,

I am pleased to present you the 3rd International Conference on Architecture, Technology & Urban Infrastructure (i-CATUre) 2015 organized by Engineering Faculty of University of Pembangunan Panca Budi (Unpab). The previous conferences were held in October 2012 and March 2013. The 3rd i-CATUre 2015 is the result of collaborative work between Engineering Faculty of Unpab and a number of institutions and experts. It aims to see the role of architecture and technology in the development of urban infrastructure with regard to the regional development and spatial planning in Medan.

Based on the Presidential Regulation of the Republic of Indonesia Number 62 Year 2011 regarding Urban Spatial Plan of Medan, Binjai, Deli Serdang, and Karo, Medan serves as the centre of metropolitan region which includes Medan, Binjai, Deli Serdang, and Karo (Mebidangro). The complexity of regional development issues makes it important to see and assess all the problems that arise through discussion that is more oriented towards academic study within the higher education environment. Due to the significant social impact of urban infrastructure development along with the use of infrastructure technology, Engineering Faculty of Unpab represented by the Center for Architecture and Urban Study are eager to contribute our thoughts for the achievement of urban infrastructure development that is more oriented to the needs of the community.

I would like to take this opportunity to thank Dr. Muhammad Isa Indrawan for his moral and financial supports and the secretariat for their endless enthusiasm for working days and nights to make the conference a success. I personally thank Kaspan Eka Putra, Sri Shindi Indira, Melly Andriana, Kiki Lestari, Sylviana Mirahayu Ifani, Solly Aryza Lubis, Amani Darma Tarigan, Helmi Ramadhani, Fitri Rahmadhani, Ramayana, Zhilli Izzadati Khairuni and Novalinda for their hard work.

Alhamdulillah, this conference would bring us the opportunity to meet old friends and make new acquaintances, build academic network, and spread new ideas and spirit for the development of our countries. The papers presented at this conference and included in these proceedings cover architectural and technological aspects of urban development including infrastructure development related to the effective and efficient procurement of mass rapid transportation system. Hopefully the result of academic studies presented in these proceedings can contribute thoughts in urban development and spatial planning in the future as well as be helpful for our future work.

Respectfully Yours,

Ir. Bhakti Alamsyah, MT, Ph.D
Dean of Engineering Faculty
University of Pembangunan Panca Budi
December 2015

SCHEDULE OF EVENTS

International Conference on Architecture, Technology & Urban Infrastructure 2015
3rd – 5th December 2015
Medan, Sumatera Utara

WEDNESDAY, DECEMBER 3 rd 2015			
Location: Seminar Room M313, Mahtab Building, Unpab Campus, Medan			
08.30 – 09.00	Participant Registration		
09.00 – 09.45	Welcome Speech		
	Opening Ceremony		
09.45 – 12.00	Keynote Speeches		
	09.45 – 10.15	Ir. Budi Faisal, MAUD., M.L.A., PhD (Bandung Institute of Technology)	
	10.15 – 10.45	Prof. Julaihi Wahid, B.Arch., M.Arch., Ph.D (Universiti Sains Malaysia)	
	10.45 – 11.15	Assoc. Prof. Dr. Muhammad Zaly Shah (Universiti Teknologi Malaysia)	
	11.15 – 11.45	Prof. Dr. R. Hamdani Harahap, M.Si (Universitas of Pembangunan Panca Budi)	
12.00 – 13.00	Lunch Break		
13.00 – 15.30	Parallel Session		
	13.00 – 14.00	Architecture and Building Technology Convener: Prof. Julaihi Wahid, B.Arch., M.Arch., Ph.D	Urban Infrastructure Convener: Ir. Budi Faisal, MAUD., M.L.A., PhD
		Urban Development and Social Impact Convener: Prof. Dr. R. Hamdani Harahap, M.Si	Technology Convener: Rahmat Widya Sembiring, SE, MCS, PhD
	14.00 – 15.30	Discussion of Parallel session	
THURSDAY, DECEMBER 4th 2015			
Location: Seminar Room M313, Mahtab Building, Unpab Campus, Medan			
09.30 – 12.00	Parallel Session		
	09.30 – 10.45	Architecture and Building Technology Convener: Prof. Julaihi Wahid, B.Arch., M.Arch., Ph.D	Urban Infrastructure Convener: Ir. Budi Faisal, MAUD., M.L.A., PhD
		Urban Development and Social Impact Convener: Prof. Dr. R. Hamdani Harahap, M.Si	Technology Convener: Rahmat Widya Sembiring, SE, MCS, PhD
10.45 – 12.00	Discussion of Parallel session		
12.00 – 13.00	Lunch Break		
13.00 – 15.00	Plenary Session: Resume of Parallel Session		
	Architecture and Building Technology Prof. Julaihi Wahid, B.Arch., M.Arch., Ph.D	Urban Infrastructure Ir. Budi Faisal, MAUD., M.L.A., PhD	
	Urban Development and Social Impact Prof. Dr. R. Hamdani Harahap, M.Si	Technology Rahmat Widya Sembiring, SE, MCS, PhD	
FRIDAY, DECEMBER 5th 2015			
Location: Seminar Room M313, Mahtab Building, Unpab Campus, Medan			
08.00 – 08.30	Workshop Registration		
08.30 – 09.30	Workshop Opening Ceremony		
09.30 – 12.00	Keynote Speeches		
	Prof. Dr. R. Hamdani Harahap, M.Si (University of Pembangunan Panca Budi)		
	Prof. Julaihi Wahid, B.Arch., M.Arch., Ph.D (Universiti Sains Malaysia)		

	Dr. H. M. Isa Indrawan, SE., MM (Rector of University of Pembangunan Parca Budi)	
	Ir. Imat A.S., MSc (Executive Director of PT. PELINDO (Planning and Development))	
	Assoc. Prof. Dr. Muhammad Zaly Shah (Universiti Teknologi Malaysia)	
12.00 – 13.00	Lunch Break	
	Parallel Session	
13.00 – 15.30	Mebidangro Urban Infrastructure Panelist: Assoc. Prof. Dr. Muhammad Zaly Shah Ir. Budi Faisal, MAUD, MLA., PhD	Sosial Impact of Mebidangro Infrastructure Development Panelist: Prof. Julahi Wahid, B.Arch., M.Arch., Ph.D Prof. Dr. R. Hamdani Harahap, M.Si Ir. Budi
	Plenary Session: Resume of Parallel Session	
15.30 – 16.00	Ir. Budi Faisal, MAUD, MLA., PhD	Prof. Dr. R. Hamdani Harahap, M.Si Ir. Budi
16.00 – 16.15	Closing Ceremony	

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Urban Environment Management as Instrument to Increase Local Ability and Human Resources

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Abstract—Entering the XXI century (or millennium III), the future development on the one hand to show the city as an important role player and unexpected and never experienced before in the history of anywhere. On the other side of town facing more diverse development problems for many developing countries may not be handled alone. The development of the world also headed to the nature of democratic governance and increasing the amount of local autonomy. This means that the ability of areas, including human resources must be increased to be able to respond to changes and new possibilities. All efforts should still be made within the framework of sustainable development principles (city) sustained due to the quality of the environment in general is very bad, in some places almost critical. In this paper, in addition to the problem of instruments for efforts to increase local capacity and human resources, a variety of definitions, scope and paradigm shift will be discussed also.

Key words: Urban, environment management, local abilities, human resources

I. INTRODUCTION

There is one side that is associated with the environmental management aspects of the city that is the pressure greater demographic. On the one hand the number of people in the world has just surpassed six billion people and is still growing. And the number of people at least half will reside in cities and their numbers continue to grow at a pace that is still high. On the other hand the amount of human resources to face many problems, ranging from the aspect of education, health, skill to income and employment. Currently in general it can be said that almost every aspect of humanity that are in the developing countries in a critical state. The level of education in Indonesia is far less than that achieved by the citizens of neighboring countries such as Malaysia, the Philippines and so on. Health problems from the aspect of the child a chance to live, the safety of mothers who gave birth to the hope of Indonesian human life in this region are among the lowest. As a result of the crisis that hit Indonesia in itself adversely affect employment and income aspects of society which now stands at its lowest point.

II. PRINCIPLES AND PARADIGM

Definitions and principles of sustainability and the environment is still growing (sustainable and environment) due to the knowledge that is still relatively young and the

problems and challenges are also constantly changing. World Bank sees the environment (environment) as the natural and social conditions surrounding human beings, including future generations. The discussion about the environment is not possible to release or do not involve the discussion of human behavior and circumstances. River in Irian Jaya despite the constantly changing location and shape but never pose a danger to life in the surrounding areas. Instead many rivers in Java and Sumatra, including Kalimantan become useless or even dangerous to life due to human activity. Man who require natural resources, uncontrolled development and be very wasteful and redundant. Human action either individually or in groups led to the natural environment severely damaged. A native of Guinea in many parts of the island depends on iron wood as a supporter of culture, both to make the house (limited) and the statue needed to perform various ceremonies. Irian for thousands of years people have never had trouble getting the wood species. But now the people of Irian very hard to get iron wood, because it has been cleared by migrants, either through concession or loggers who use a powerful motor boat to steal iron wood. The new iron wood can be harvested when it is over the age of eighty years.

Humans are already advanced, highly dependent on the supply of which is basically taken from the natural resources in order to maintain his high standards and produce waste that great anyway. In the case of the poor or indigenous as in Guinea, or Borneo, subsistence taken from the wild only on the basis of a very limited daily requirement for survival and almost no residue or waste. So the relationship between humans and the natural environment that determine whether or not a state of nature continues. Back to the example of indigenous people in Irian Jaya, a good relationship between humans and the natural surroundings has caused the population of Irian almost stable development, although no family planning programs. Quality natural and living environment is maintained very well. Kamoro to Asmat are one family and live along the central coast of Irian Jaya, never had a problem about how to get food, build housing or meet other necessities of life, including spiritual aspects. It is very changed after entering the building.

Discussion on environmental management paradigm discussed by Colby (1990). He tried to distinguish between the frontier approach to economics and deep ecology; of environmental protection and resource management to the principles of eco-development. Frontier economy based on the principles of neo-classical economics or Marxist economic system; who see that the economy will continue to grow and prosperity will follow, as the dominant imperative. Instead Ecology In a reaction to the economic frontier that basically follow the model of anti-growth and see the harmony constrained as the dominant imperative. Basically EIA seen not to protect the environment but rather as an economic opportunity to approach the threshold almost be violated. Thus environmental protection is only seen as an attempt to make the internalization of environmental protection and clean up the environment. Of the two models of the environmental approach, the future need to develop a paradigm environment on the one hand responsible for the preservation of the environment on the other hand the economy can keep growing, stable and performed with the broad equity and fair.

III. METHOD AND MECHANISM

Methods and mechanisms (and the means) management is only one side of the total concept of management itself. On the other hand, management should include people who carry out management and those receiving the impact of the implementation of the management. Human aspects in the pattern of Western management is not focused as clear and strong as in Japan. Japan is an advanced industrial countries because of the sophistication of the technology; It also contains elements of management concentrated. Japanese people strongly believe that the success of a manager who accomplished dependent and can not be separated from the background elements such as (Pascale, RT & Athos, AG, 1981):

- levels of personality
- circumstances and cultural experiences
- training and experience in organization

For many other countries and at different times, the focus of management should be designed commensurate, not impossible an herb between facilities management and human aspects. One important note of the human aspect of the viewpoint of the East is the aspect of wholeness, including spiritual aspects and relegius in addition to physical and psychological.

In the West, there is a model of management of the existing variety, which is considered quite successful and is run by many companies large and small that 7-S models (style, skills, staff, superordinate goals, strategy, structure and system). Here is unlikely that all of these aspects are discussed simultaneously and deep, because it would take far longer than even a training schedule that is currently done. That will be done only in general discussion. Also the aspect of management will be focused on those aspects of the management of sustainable urban development, not the

views of the effort to succeed in a private company, although managing the city basically has similarities with menglokan 95% of a private company. That it was about to be discussed here is the difference that five percent of the have while taking into account the good management contained in the similarity of 95% earlier.

Management styles are diverse, depending on the tradition of the institution as well as the background manager. When associated with the era of regional autonomy, the necessary management style is open, willing to listen and always respect the opinions of siapapun, including and especially the ordinary people. They are not experts in the technical aspects, but more to know about the priority it needs. For a manager needs skills not only related to the management itself, but expertise is handled, for example, residential development or the provision of clean water. These skills include "art" to achieve high results. Actors need to be prepared with quality as the first two elements. Development actors should know the position and aware of what is desired. To be together all bettors need to establish goals and objectives to be achieved. How to achieve tujuan and objectives that have been defined is a problem berikutnya, by way or approach to what it is trying to achieve. For that there needs to be a common view about the strategy to be used. Finally, what is also important is to develop a framework and system to run the efforts to achieve these objectives.

Return on environmental management issues in the context of urban development, the role of management is to ensure that the development process can be run efficiently and effectively. For that discussion needs to start from the understanding of the development process. In the development process follows the siklus: idea, planning and financing, design, implementation, operation and maintenance / repair. It is often overlooked, but in many ways important is the destruction after a period of development concerned the results of work completed. The task of a manager in ensuring that the process runs smoothly is to keep the time and stages of the process sequence. In this case the back which is very important is to determine who should do what on each part of the process. For example, the idea must come from who and how.

If the above is associated with the management of the environment and the principle of sustainable development, then it is definitely the wider community should be actively involved in the process of formulating ideas and make decisions at every stage of the process. It is increasingly urgent if further the principle of regional autonomy was about to be implemented better. One important role involvement, is the private sector. As described previously, the way business has been more sought clicking eksternalkan social and environmental problems because they simply inhibit or reduce the chances of achieving large profits. Economic principles of doing business for this is the limited capital, can achieve huge profits in a short time, bear the risk as small as possible, as well as political manipulation in order to ensure it works. In this way always result in big

losses for the other parties, especially the little people and the environment. In the case has become a reality that due to limited public resources then inevitably the private parties should be involved as a necessity. The problem is how these business practices adhere to the principles of good environmental ethics.

Substantially in understanding the environmental management of the city, it is necessary now discussed aspects of urban development regulations. Basically the construction of the city has had to refer to the principles of sustainable development, but not in the context of regional autonomy. Are here to discuss the development of the city that relates to some of the things below from environmental improvements settlements such as KIP (since 1968) urban infrastructure development integrated (IUIDP, since 1983) or now the urban development program (UDP), and the movement ADIPURA (since 1983) that has not dilaksanakan since 1997 without any clear explanation of the basis. The third program is the development of the city by many parties (and abroad) as an innovative city management, unprecedented. However, from within their own country management pattern of urban development is still not given priority commensurate. In the case the world is an increasingly pressing need for urban environmental management (UEM) is good. When referring to the three programs to be integrated, then the outsider parties should learn from us, not vice versa.

TABLE 1. MATRIX RELATION AND SUSTAINABLE DEVELOPMENT PROGRAM

The Construction Element Sustainable	DEVELOPMENT PROGRAM		
	KIP	UDP	ADIPURA
environmental quality	Good**	Good*	Excellent***
live quality	Good***	Good*	Good**
the role of the community	High Value***	High**	High value***
economic value rises	Increase**	Increase**	Increase**
Human Resource Development	high***	high*	high**

From the description above is evident that there is equality principle which is relatively large between the three development programs in the above as a form of management of urban development on the one hand gives the results of improvement in the state of settlements, on the other hand the public to increase the ability to be able to manage aspects of development related to the life and own livelihood. Of the three forms of the program, although all had the scope of the city and sustainability are high, it turns out urban development program such as Medan Urban Development Project (MUDP) in terms of sustainability does not reach as high as KIP and ADIPURA. Judging from the financing side, at least SDP involves contributions from the community. This contrasts with KIP and ADIPURA that in Medan involving a greater contribution from the community that can be deri on dibperikan by the government. This aspect in itself a major influence on the

level of sustainability of the development program concerned.

IV. REGIONAL AUTONOMY AND HRD

Indonesia is currently undergoing a process of tremendous change, and in the broadest sense. There are five important principles of the changes brought about by the reforms set in motion by the student. The first is the principle of change that break the pattern of the New Order government, which eventually lead to many problems. Both of these changes may be due to the principle of democratization also went well, although not without risk. Thirdly, the principle of autonomy (regions) are widely applied but not yet widely understood. Fourthly the principle of financial balance was good but not run as expected. In the terms of the existing legislation is still far from the expectations of the people in the area. The fifth and most important is lost *dimunasi* population on Java island to island-Plau other. The fifth principle of the new opportunities for changing dengan loss of dominance of Java to other islands to go to the new circumstances carried out in the region through the device according to the opportunities provided by the Act.

City and County area now has enormous powers in taking care of their own household without any problems may be interfered too much by government superiors (provincial and central) as previously accordance uu no. 22/1999. This authority comes with the distribution of financial resources will be more balanced between the central and regional (uun. 25/1999) also the position of the City and County are not under the Province as regulated by uu no.5 / 1974; but parallel. Power governor and officials coordinative, limited to the issues and interests among local town or district, two or more; being in one area does not exist. Thus the greatest power in Indonesia is basically entirely in the hands of the people (local). It could see how important it is to empower the community. And it is also clear that local autonomy major effect on the central government that lost a lot of authority in advance.

V. REGIONAL AUTONOMY

Official government in the region (both provinces and cities / regencies) in accordance with Law no. 22/1999 is appointed as a public servant, was assigned and paid by the People. Therefore they should behave like a public servant in the truest sense and broad, if not want "fired" again by the people through parliament chosen. This change is very drastic, fundamental and extraordinary, which until now was not owned by any country in the world, including countries with a federal system which is still governor and powerful. In many federal states developed, the current process of reducing the authority of the governor also occur, so u no. 22/1999 is far more advanced compared to what happened there. All sorts of privilege (privilege) that previously applied to high-ranking officials already do not need to be continued, including the escort and privileges that apply in the traffic and so on. Which is now the fundamental question

is to what extent these changes are already recognized and widely understood by the people? The fact that there is still very far from expectations and the situation is still sad because of lack of awareness. There is distrust among the public that it is really going to happen no later converted back into a state of all by the new rulers. This is menadasar question that needs to be discussed further because otherwise there will be consequences will be immense.

There are five main characteristics or principles of the concept of local autonomy that need further attention more as has been stated above, namely:

- 1) Principle changes need to be firm and clear pattern of local government that is now implemented dropped out of the pattern of the New Order, now turned out to cause a lot of problems such as corruption ended with arising crises and reforms.
- 2) Principle of democracy must be the cornerstone of community work and the whole strength of the region in order to work well, although not without risk. One risk faced is confusing opinions and views to take place and the idea of separatism conscious federalisme well.
- 3) The principle of autonomy (area) previously often demanded by various parties to apply broadly. In fact many areas that are not ready or even afraid to carry it out. Habits instruction and waits for instructions from above are still difficult to remove that confusion is a daily reality that caused the wheels of government in the area almost to a standstill.
- 4) Principles of financial balance is good but has not worked as expected. In the terms of the existing legislation is still far from the expectations of the people in the area.
- 5) Principle of critical new opportunities in the form of lost dominance in a broad sense by the people on the island of Java on the population in other Plau islands outside Java. Must be able to distinguish between problems that can and needs to be transformed into opportunities. In the implementation of regional autonomy, there are many opportunities yet known and need to be mobilized and developed.

From the description presented briefly above, it appears that u are related to regional autonomy gives new world for the life of the nation. Various opportunities created also can and should be utilized by the whole society, from the most tingga to the bottom. Even the people in the village need to be ready to participate and punye broad freedom to take decisions related to improving the welfare of themselves and their families. Because of these changes demand new conditions to be utilized properly, then there is no choice but to the whole society and citizens to develop human resources for the regions themselves each.

VI. CONCLUSION

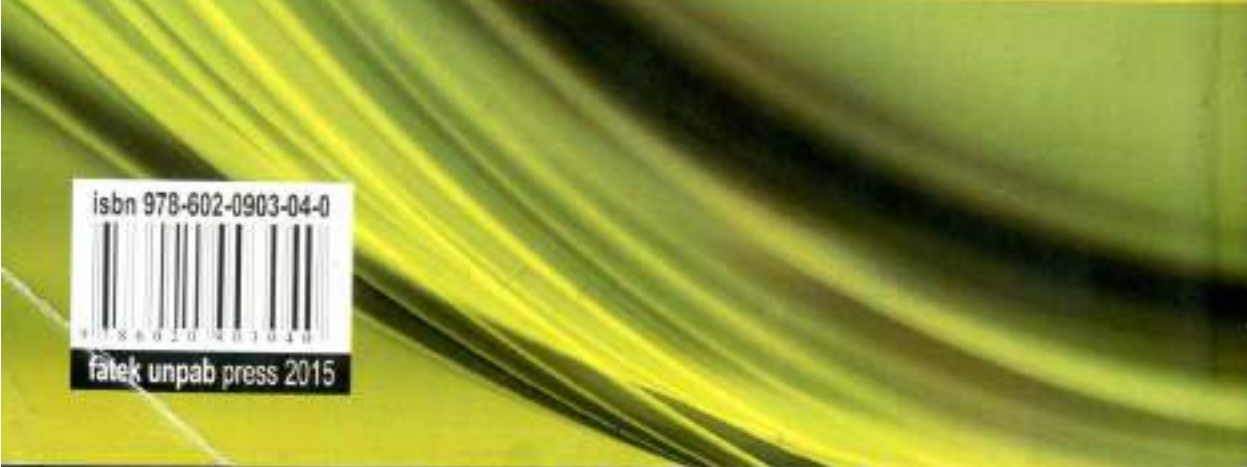
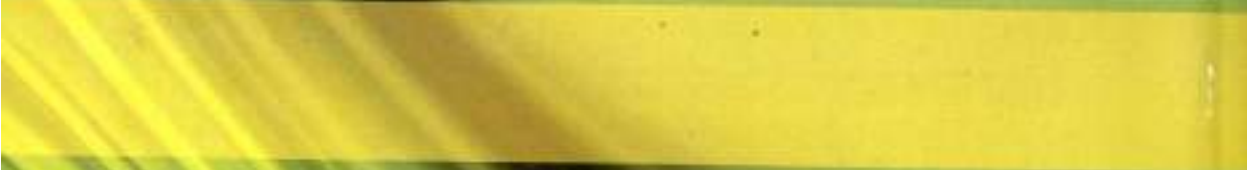
The current construction management of the urban environment is already good enough. But there are five instruments that must exist and be used as well, but should

be adapted to the circumstances prevailing at the time and place tertentu, it always means there must be an effort to clicking and clicking adaptasi adaptation- right. The fifth such instruments are:

- 1) The concept and a clear understanding of the development in question,
- 2) The method must be oriented in humans, so it is necessary to develop institutions capable involve,
- 3) integrative and participatory mechanisms so that the public can be involved, either directly or through the petaruhnya,
- 4) Regional autonomy should progressively be implemented through a good understanding and time, as well as
- 5) Human resources should be continuously developed, either through mutual learning and sharing with the need.

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