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Parametric simulation as a tool for observing relationships between parcel and regulations in unplanned commercial corridor

Julia Dewi^a, Uras Siahaan^b, Rumiati R.Tobing^a *

^aPasca Sarjana UNPAR, Jl. Merdeka no. 30, Bandung 40117, Indonesia

^bUKI, Jl. May. Jend. Sutoyo No. 2. Cawang, Jakarta 13630, Indonesia

Abstract

The development processes of residential areas by several developers are not integrated. They tend to create spaces that are not well connected. The connection between two or more development areas (which is used as main access) grows into a commercial corridor that shows irregularities. To control the development in such commercial corridor, the government has set certain regulation. This study aims to examine the relationship between the characters of parcel and those certain regulations. The characters of parcel consist of (among others) dimensions and geometric shapes. The aforementioned relationship will result in certain mass and form. This analysis is done through simulation using certain regulations as parameter. Those regulations are Building Coverage Ratio (BCR), Floor Area Ratio (FAR) and Building Setback. The simulation process is applied to the existing parcel and the object of study is a commercial corridor between Serpong and Tangerang areas.

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1. Introduction

Private developers' big role in choosing, planning, and developing a new area significantly affects the development of its surroundings. The development of Jakarta Greater Area (Jabodetabek) shows that new towns are

* Corresponding author. Tel.: +62811826149; fax: +0-000-000-0000 .
E-mail address: juliadewis@yahoo.com

established without a coherent development planning which does not follow the local government's development master plan (Sujarto 2000, 86). Developers can set up their own master plans and present them to the government for permission. The process is unlike new town development planning in other countries, where the government restricts developers' ability to plan and develop infrastructures (Dieleman 2011, 81).

1.1. The phenomenon of Discontinuity Between Areas

A significant effect of disintegrated development is discontinuity between areas developed by different developers. These areas are not well-connected to the existing infrastructure system (Dijkgraaf 2000). The development of new areas that are not integrated to road infrastructure possibly results in disconnected areas. A few phenomena can show disintegrated planning in some areas within a certain region. The development of a new residential area in an existing infrastructure, such as arterial roads belonging to the provincial government, will expand the commercial capacity of the road into a commercial strip. Such expansion does not only create function and activity dynamics, but also density, space, and shape dynamics. The visible signs of this expansion are irregularities and various architectural elements forming the corridor. The development of a road into a commercial corridor, as well as its roles as a main access for a new town indicate the characteristics of a heterogeneous and irregular commercial corridor.

The connecting corridor between Serpong and Tangerang is one case of commercial corridor development in arterial roads (which are the main access for new residential areas). An overwhelmingly rapid development in those areas changed the road that initially connects Tangerang with its surrounding areas (such as Serpong) into a city commercial corridor. The development of Bumi Serpong Damai satellite city initiated the growth and expansion in Serpong area in 1980s. This expansion of commercial capacity consequently filled the empty spaces along the corridor, as well as with the existing production capacity such as factories and warehouses.

1.2. Regulation as a Control for Building Mass Form

Zoning basically functions only to prevent property owners from developing unsuitable development (that burdens the public) in their environment. Zoning regulation does not have the ability to create aesthetic, orderliness, or comfort despite its legal power (Spreiregen 1965). In order to create a sustainable and good city environment, zoning regulation is supposedly complemented with design and planning tools, including a building code that serves as standard.

A more detailed regulation plays an important role in maximizing access through regulating block, density and proximity between functions. Such regulation will enable variation of use. Talen maintains that regulating measurement (or dimension), distance and width gives room for a better city pattern. This relationship is not only related to parcel size, but also road size where the parcel is located. Furthermore, this matter has to be governed by certain sets of building and construction standards such as building width, height and use (Talen 2012, 72).

Form gives attention to the shape of space in three dimensional perspective (Talen 2012, 17). Form is governed by rules regarding building line, setbacks, lot coverage, function of street width, building type, and building height. Krier argues that building typology and morphology and how they are related to city road will affect city space (Krier 1979). Thus, the forms of buildings and how they are related to city road will definitely have an effect on a city's three-dimensional form formation.

Local government has made effort in regulating and controlling the corridor development. They do so by following the Building and Environment Development Plan which is derived from the earlier regulations and policies. This research sought to examine the application of such regulations on the existing parcel and the possible forms that might take place as its result.

2. Method

Data is collected through field observation, interviews, documents examination and mapping. Data regarding regulations is mainly collected directly from local authorities. Some of those regulations are still awaiting approval. Interviews provide the information needed in explaining the details of some existing regulations and their relationship

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