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To cite this article: Prindo Tutuho et al 2019 J. Phys.: Conf. Ser. 1167 012012

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Tracing the City Pattern of Netherlands and Indonesia using Depth Calculation and Connectivity

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Abstract. The concept of sustainable development is often studied and implemented by cities in the world today. Cities in Indonesia also implement sustainability to realize a sustainable city, in this case in particular colonial cities in Indonesia. Then a study is needed to determine the pattern of colonial cities in Indonesia. In this study the urban pattern was investigated using the Syntax Space approach. The object of research is cities in Indonesia that have been planned by the Dutch colonial. This study was using the Depth Calculation (DC) method to get the similarity ratio. The master plan used in this study is two cities in the Netherlands (Amsterdam and Delft) and three cities in Indonesia (Bandung, Semarang, and Malang). The old city maps calculated its depth and then analysed, the software used was DepthMapX. The results showed that there were similarities between DC in the colonial city master plan of Indonesia planned by Herman Thomas Karsten and the two cities in the Netherlands. The resulting ratio is expected to show how much the difference between the colonial city pattern in Indonesia (CCPI) and cities in the Netherlands. This research is expected to contribute to a better understanding of urban planning in Indonesia in accordance with the Sustainable Urban Form.

Key words: Colonial City Pattern in Indonesia (CCPI); Connectivity; Depth Calculation (DC); DepthMapX; Space Syntax; Sustainable Urban Form

1. Introduction

Indonesia in its history is closely related to the Netherlands. The Netherlands has colonized Indonesia for around 350 years. During the period of colonialism, there were changes in various fields of life, one of which was planning in the development of cities in Indonesia. Generally, colonialists build something similar to their home country, so the Dutch build similar city models. Architecture in the colonial city tends to resemble buildings in the Netherlands. However, in the current urban development, there are changes where all the things that cause the original colonial city planning to be vanished. For understanding a notion of sustainability in colonial city pattern in Indonesia (CCPI), it is necessary to study the ratio of similarity between cities in Indonesia and those in the Netherlands. Master planning in the Netherlands is thought to have the same design hierarchy as colonial cities in



