

## PRELIMINARY ESSAY ON THE CONTINUITY OF TOWN PLANNING CONCEPTS OF THE RENAISSANCE "IDEAL CITY" AND THE MODERN TOWN PLANNING

-Focusing On The Text Descriptions By Vitruvius And  
Alberti, And The Image Description By Scamozzi-

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### ABSTRACT

*This study aims to place the Ideal City in context that some key concepts of the modern town planning have roots in the town planning concepts and its methodology in the Renaissance period.*

*Vitruvius' text 'De Architectura Libri Decem (BC33-22) and Alberti's treatise, 'De re aedificatoria' (1443-45, 1447-52, 1485) are situated at a very important position for understanding the planning methods that the Renaissance architects drew in their architectural treatises. The perspective views on the town planning expressed in these texts of Vitruvius and Alberti, and the successive ideas drawn in the Ideal City have obvious differences in the output influence. The latter, the successive ideas were visualized as an image of ideal town space.*

*This study aims to develop the concept of town planning from the Renaissance onward, from aspects of both text and image, with attention to that some town planning views in the text were converted to images to be diffused.*

*This paper includes three basic objects of analysis, which are texts by Vitruvius and Alberti, and a plan of town drawn by Vincenzo Scamozzi (1615), to study the continuity of the Renaissance and the modern town planning concepts. The approach is to extract, from those three objects, the peculiarities about geometric aspects, arrangement planning of town facilities, locational conditions, and so on from aspects of centrality, homogeneousness of street and block scheme, differentiation of outside and inside of a town, and diversity of town space.*

*As for the form of town, Vitruvius makes mention of a circle, Alberti a circle, octagon, or hexagon, Scamozzi a dodecagon. All these shapes provide different street layout but a strong centrality. As for the street planning, Vitruvius recommends radial pattern. Alberti mentions of streets category and simply a street pattern with gentle curve. Scamozzi provides a grid pattern. All three commonly place the issue of street as the key concept of physical planning of*

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*town space. As for the plaza, Vitruvius and Scamozzi only indicate the central placement but all recognize the centripetal force of town core. As for the town facilities, Alberti considers more diversity and Scamozzi shows more practical concepts in its town image.*

*As a result, the town planning principles in the Renaissance provide the ideas of plaza arrangement as a core and its centrality, homogeneousness of street and block arrangement, association of the inside and outside a town, diversity of town space which are functional and rational, and are common to the modern town planning key concepts expressed in such as Howard's Garden Cities of Tomorrow and Le Corbusier's town planning. It is pointed out that those key concepts about town planning are some measures to recognize the continuity of the Renaissance and the modern town planning ideas. Moreover those were fundamentally based on the Vitruvius' ideas and succeeded with development by Alberti, and were visualized as a town plan in the following architectural treatises which gave an inductive influence for the concrete occasions of planning a town.*

## INTRODUCTION

The Ideal City has much to do with various technological improvements in the Renaissance Period<sup>1)</sup>. To be more specific, it has been pointed out that the refinement of surveying technology and instruments, drawing apparatus and technique, usefulness of paper, and printing technology in the Renaissance period became the foundation of not only the proposals of Ideal City and its widespread dissemination. The development of the Ideal City represents that the city became the object to be illustrated and cities including existing cities turned to be the object that is looked down upon as a whole.

This study aims to re-capture the fundamental concepts of the Ideal City in the Renaissance period under the historical recognition that some ideas on town planning were represented in the Ideal Cities, translated into concrete images, and became established, also became foundation of the order concepts of the Modern town planning in the 19th and 20th centuries. To overview the architectural treatises by the Renaissance architects, in this study, we put attention to the fundamental ideas on town planning found in Vitruvius' *De Architectura Libri Decem*<sup>2)</sup> (BC33-22) and Alberti's *De re aedificatoria* (1485)<sup>3)</sup>, as one of the first architectural treatises spread in the Renaissance which includes planning concepts that gave much influenced the methodologies of town planning in the Renaissance. Also this paper treats Vincenzo Scamozzi's ideas on town planning as one of the subsequent and practical cases after Alberti. The crucial difference between the former Vitruvius and Alberti, and the latter Scamozzi is that, in latter case, the concept on town planning is visualised as an image. Keeping in mind that town planning concepts represented in the texts were replaced with images and propagated as a new assessment method of a town, this study aims to organise the modern characteristics of the Renaissance town planning concepts.

As for Scamozzi, it has been pointed out that Scamozzi was familiar with the *Ten Books on Architecture* by Vitruvius, '*De Architectura Libri Decem*'. This study provides the analysis of the text that Vitruvius and Alberti represented as visions for town. Another part of this study is the analysis of illustrations of town planning by Scamozzi in which his visions on town planning were replaced with images. The aim of these analysis is to find out some indicators to verify the continuity of

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the Renaissance and Modern town plannings. Some examples of the modern town planning such as T.Garnier, E.Howard, and Le Corbusier are cited in this study as the objectives of comparison.

The approach is to extract, from those three objects of ideas by Vitruvius, Alberti, and Scamozzi, the peculiarities about geometric composition in town planning, deployment plan of the town facilities, location of a town, and so on.

### PERSPECTIVE OF MODERN TOWN PLANNING

The concepts of the modern town planning are not uniformly explained. But on the other hand, it is possible to point out some common form on the planning. For example, the "*Une cité industrielle (An Industrial City)*" advocated by Tony Garnier, "*Garden Cities of To-morrow*" by Ebenezer Howard, the city planning proposals by Le Corbusier such as "*Ville Contemporaine (Contemporary City for three million inhabitants)*" and the "*Ville Radieuse (Radiant City)*", and the Athens Charter. These ideas were proposed in a different time and each tried to overcome different challenges. However, as Le Corbusier described as "*Manière de penser l'urbanisme (1946)*", it is certain that there are commonalities among the modern town planning when focusing on the "method" to form the condition of urbanization by physical planning.

For example, there is a subject of establishing the "centricity". The method of planning in the Garden city by Howard was represented by using diagrams. But the practical pattern of planning are read in the displacement of those diagrams into practical town planning. Howard showed in the model of concentric relationship between the use of land or district, in that, the open public space of the center is very significant. The center is not a mere open space, but establishes a strong centricity related to the given intended purpose or town facilities in the surrounding area.

Strong centrality is also built in Le Corbusier's Contemporary city of 3 million inhabitants. Not only the physical center but also spiritual centricity is created here in terms of scale of the open space and green space and the usage settings of commercial district and also relation with the zones surrounding the center and cornerstone of transportation with the suburbs and different outside towns.

Next, there is a subject of arranging streets and blocks. Means of planning these streets and blocks are essential in town planning and are directly related to the activity space. In modern town planning, there are one or several strong centers, and related to this, streets and blocks are arranged under a uniform pattern. Its uniformity sometimes indicates a different pattern by district, but homogeneity and fairness are the fundamental matters. In the Radiant City by Le Corbusier, residential district is keeping fairness and homogeneous configuration of blocks are fundamental. On the other hand, however, the functionalistic town planning shows that it is necessary to provide homogenous town infrastructure also to produce the diversity to the town.

Moreover, in modern town planning, there is a common perspective of how to extend a city towards the problem of urban sprawl. The strong centricity is also

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related to this. The town's center maintains relationship with its periphery and this leads to recognition of the boundary area. In Howard's Garden City, population and physical town scale are set and the spatial extent of the town are given for clarity. Ideas behind the premise of the concept of suburbs are physically and mentally common.

In modern town planning, although the homogeneity and fairness are important in the mastery of urban space, on the other hand, it is also clear the richness of the urban space is not homogeneous. Interweaving homogeneity and non-homogeneity, the modern town planning has been given the diversity in the town. The zoning in Howard's Garden City provides a sustainable community. Concept of zoning certainly leads to diversity of the city. Garnier offers the concept of zoning in the Old Town and industrial area. Also in the Athens Charter, a town is an accumulation of various acts and those acts were divided. Formation of creating the personality of the district in the homogeneity planning is the method itself of spinning the specificity of the place. In the "Radiant city", uniting a variety of dwelling and the homogenous planning of blocks, each district forms its own diversity as a result. While the concept of diversity is the opposite of homogeneity, it is obvious that the mixture of homogeneity and non-homogeneity in the spatial structure of a town is a method to give diversity to town space.

Therefore this study argues some aspects by the Renaissance architects such as *centricity, homogeneousness of street and block scheme, differentiation of internal and external of a town, and diversity of town space*, which are more like a prophetic vision of modern town planning.

## CENTRICITY

In the Book I, Chapter 7, Section 1 of '*De Architectura Libri Decem*' (in the following, shown as [Vit\_I,vii,1]), Vitruvius places a plaza in the center of a town and places a basilica as an attached facility of a plaza [Vit\_V.i,4]. Vitruvius also mentions about facilities for town's center such as treasury, prison, and senate floor, adjacent to a major plaza [Vit\_V,ii]. Though the age of Vitruvius is different from those of Renaissance, Vitruvius provides concept of making the town's central area as a town core with a certain scale of plaza surrounded by main public facilities.

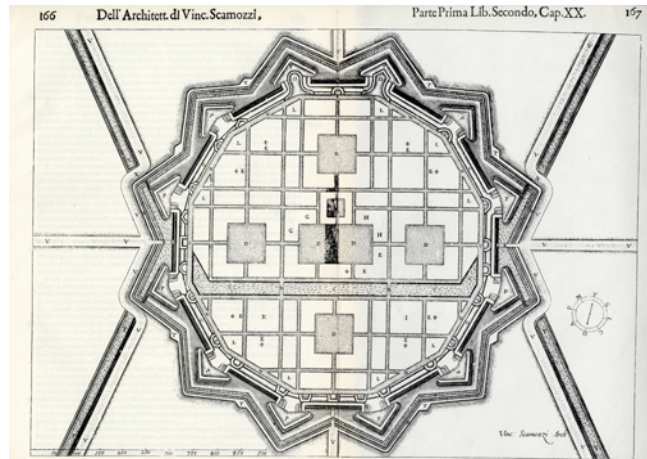


Fig.01: Town space diagram by Scamozzi

In the architectural treatise by Scamozzi, "*L'idea della Architettura universale*" (About the Idea of the Universal Architecture)(1615), Scamozzi also assign a major plaza in the town center and places monarch mansion, cathedral, faculty concerning finance management, justice facility around the plaza (Fig.01)<sup>4</sup>. In many of the ideas about the Ideal city, the allocation concept of the sites for town facilities depends, but, in general, a major plaza is located in the town center to create a strong centrality of whole town to physically create an atmosphere as a town core.

## HOMOGENEOUSNESS OF STREET AND BLOCK SCHEME

As for the diagram of streets, Vitruvius associates the street planning with the local wind directions indicating the drawing method of wind directions. According to Vitruvius, wind directions are divided into eight corresponding to its local main wind direction. Wide streets and small alleys should be laid out in order that the streets would not directly suffer from the strong wind [Vit\_I,vi,6-13]. Its form is radial and the layout pattern is apparently the concentric octagonal. It does not tell the block scheme in detail but it is obvious by drawing it that it pursues spatial homogeneous in the town (Fig.02).

Scamozzi's scheme plan (Fig.01) provides an explanatory note and a deployment plan of major town facilities in detail. Major town facilities are placed around the major plaza, and 8 monasteries shall be located evenly in the 4 small districts which are actually small piazzas, while keeping the uniformity in these blocks. Also the Cartesian coordinate system is adopted into the street layout pattern and the block layout scheme consists of square and a rectangular of half-square focusing around the central axis that passes through the major plaza in a constant ratio while creating a street layout of strong symmetry.

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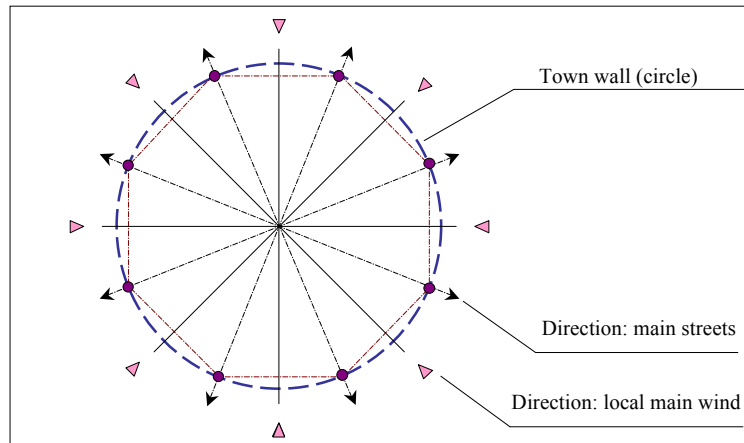


Fig.02: Vitruvian ideas on town shape and the location of the main streets in the Ten Books on Architecture

## DIFFERENTIATION OF INTERNAL AND EXTERNAL OF A TOWN

Alberti, in his architectural theory, "*De re aedificatoria*", Book IV, Chapter V [Alb\_IV.v], refers to the main street between the internal and external the town. There's also a military perspective but still brings in the aspect of town prestige and focuses on the maintenance of the roads outside the town. Clearly capturing the distinction of the inner city and external part through the border wall, the necessity of principal arteries which connect the two efficiently is suggested.

Alberti is aware of the function of the road that connects the inner city and the external of the town, consequently the town's external road has a role that links the town and another surrounding town (Fig.01). Outside the town walls is the flat countryside and, different scale is assigned to the roads inside and outside of the town, in consideration of its connection with other towns and suburbs.

## DIVERSITY OF TOWN SPACE

Alberti shows the idea of town planning according to a variety of site conditions while he focuses on diversity also in the existing town space. As for plazas, Alberti argues that dispersing small plazas of different functions throughout the town and giving inherent decorations to each plaza will lead to diversity in town space.[Alb\_VIII, vi].

Alberti subdivides the town space into plats uniformly. But because of the relationship with the canals flowing in the town, he suggests that each plat will induce its inherent locality. Also each stronghold is assigned with various functions and forms while its layout apparently seems symmetrical.

## COMPARISON OF THREE TOWN PLANNING

A remarkable difference is recognized in the descriptions about the form of a town. A circular form is highly evaluated by Vitruvius [I.v.2]. This is simply because enemies are visible from all directions. By contrast, a rectangular form or a convex polygon that produces a dead angle from a fortified town is not the best selection for the town form. Here, defense is given priority in determining the town form with the condition that the town is enclosed by town walls. As for the form of town, Alberti states, in the '*De re aedificatoria*', that it is not practical to give a circular or a rectangular form to a town wall as Vitruvius states in fixed meaning, but it is adequate to plan a town so as to fit for the site condition [Alb\_IV.3] and he mentions about circular, octagonal, or hexagonal shape for the town form [Alb\_I,viii]. On one hand, Scamozzi presents the concept of assigning a regular polygon to the town form and illustrates a town plan of a regular dodecagon. According to the scale of a town, he suggests regular polygons with sides of different length (Fig.03).

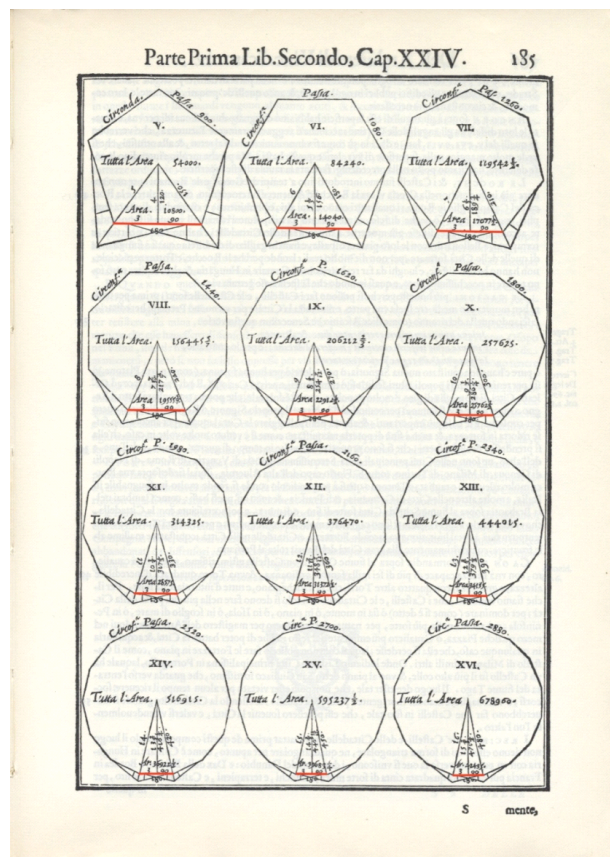


Fig.03: Scale and form of a town by Scamozzi

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As for the street scheme, Vitruvius suggests a street layout consisting of a radial pattern [Vit\_I,vi,7]. Streets will be laid out as the diagonals of an octagon together with a concentric polygon pattern of streets parallel to each side of the octagon (Fig.02). Alberti scarcely mentions of the street layout scheme but creates a category of military and non-military streets. Also Alberti mentions of a town plan with gently curved streets from by aesthetic preference [Alb\_VI,v]. Scamozzi draws street scheme of grid pattern.

As for the shape of plaza, all three adopt a rectangle shape to the major plaza but each takes over different aspect ratio; 3:2 by Vitruvius, 2:1 by Alberti [Alb\_VIII,vi] and also by Scamozzi. Alberti describes about plazas such as that the small plazas should be laid out at intersections of streets [Alb\_VIII,vi] but does not refer to such central major plazas as Vitruvius and Scamozzi mention. However the concept of centripetal effect is common to three.

As for the town facilities, Vitruvius arranges the major town facilities around the major plaza located in the town center. A theater shall be placed in the healthy neighborhood as much as possible, a public bath also in the hot environment, also a portside shipyard facing north. Alberti mentions about more facilities than Vitruvius, to increase the functionality of town space. Scamozzi tries to describe a standard scheme of town space using a drawing plan of town.

As a whole, Alberti considers more diversity than Vitruvius, and Scamozzi shows normative guidelines with more practicality and application in its town image than Vitruvius and Alberti.

## CONCLUSION

The descriptions on the Ideal City in the Renaissance period provide key concepts of creating a plaza as town's strong point and its centrality in town, homogeneity of street and block scheme, association of the internal and external of a town, and diversity in town space. This shows that the succession and development of the above concepts in the architectural treatises in the Renaissance by architects such as Alberti gave much influence on the practice of the Ideal City and became a barometer of a rational town planning and its evaluation. As a consequence, it is considered that all these concepts were the base of the practical, rational, and functional standard in the Renaissance period and these lead to the key concepts of the Modern town planning concepts.

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- MORITA, Keiiti, VITRUVII DE ARCHITECTURA LIBRI DECEM IN SERMONEM IAPONICUM VERSIT, Tokai University Press, Tokyo, 1969.
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SCAMOZZI, Vincenzo, *L'idea dell'Architettura Universale I*, Gregg, 1964 (Reprint: Originally published by Venetia: Giorgio Valentino, 1615.).

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- 1) EATON, Ruth, *IDEAL CITIES -Utopianism and the (Un) Built Environment*, Thames & Hudson, 2002, p.41.
  - 2) This architectural treatise was supposed to be written in the last half of the first century B.C. by the architect and engineer, Marcus Vitruvius Pollio. Its manuscript copies did exist during the Middle Ages and were rediscovered in the early Renaissance, when it was rapidly translated into other European languages and the Vitruvian ideas on architecture and town planning spread all over Europe and its colonies. In this study, the following version in Latin and Japanese was referred to: MORITA, Keiiti, *VITRUVII DE ARCHITECTURA LIBRI DECEM IN SERMONEM IAPONICUM VERSIT*, (Tokai University Press, Tokyo, 1969), a Japanese translation of the Latin version in Valentin Rose, Hermann Müller-Strübing: *Vitruvii Vitruvius Pollio, De architectura libri decem*, (Teubner, 1867).
  - 3) ALBERTI, Leon Battista, “[*De re aedificatoria (1485)*], *On the art of building in ten books* (translated by Joseph Rykwert, Neil Leach, and Robert Tavernor). Cambridge, Mass.: MIT Press, 1988.
  - 4) SCAMOZZI, Vincenzo, *L'idea dell'Architettura Universale I*, Gregg, 1964 (Reprint: Originally published by Venetia: Giorgio Valentino, 1615.), pp.166-167.