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The Reintroduction of Nature within Architecture and the City: The Contemporary Re-emergence of the Hortus Conclusus in the Built Environment

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Abstract

The courtyard typology is among the oldest formats of human habitat and many ancient cultures placed enclosed gardens, as abstracted and idealised recreations of the natural world and paradise, within their architecture and cities, as exemplified by the Moorish garden courtyards of the Alhambra, enclosed Japanese stone gardens, such as at Ryōan-ji, and the varying courtyard typologies of Asian houses, in which a courtyard metaphorically connects the earth with the heaven.

Subsequently and most markedly in modern architecture there has been an increasing tendency to see buildings rather as objects within the landscape and in marked contrast to nature. More recently this understanding has undergone a major shift in an alternative direction and the *hortus conclusus*, or enclosed garden is becoming increasingly applicable to contemporary architecture, especially in urban contexts in which direct connection with landscape, or 'nature', is often unachievable. This paper, thus, seeks to consider the *hortus conclusus*, more specifically within the Asian and Australian context, from its origins to the present day in order to trace its potential relevance into the future.

Keywords: *Captured Landscape, Enclosed Gardens, Hortus Conclusus, Courtyard Typology, Contemporary Urbanism*

1. Introduction

In *The Enclosed Garden* (1999), one of the definitive publications on the subject, authors Aben and de Wit, present an understanding of the origins and development of the enclosed garden, or *hortus conclusus*, through to its recent re-introduction into the contemporary urban landscape. It is expansive in its historical perspective, in considering the courtyard typology from its ancient Egyptian, Babylonian, Mesopotamian and Persian origins, to its development in Europe in the Middle Ages, through the Renaissance and Baroque periods to the present day. On the other hand, Aben and de Wit's *The Enclosed Garden* makes no reference

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to this most archetypal combination of landscape and architectural form within an Asian context, where it has played as profound a role historically. It also has been a source of inspiration for Western architects and most significantly with regards contemporary developments.

Hortus conclusus is the Latin term for an enclosed garden or more literally a garden bounded by some form of enclosure, either physically by actual walls or more symbolically by columns, hedges or fences. As Aben and de Wit describe, the enclosed garden has its etymological origins in the Old-English word 'geard' that refers to a, usually woven, fence and thus a bounded enclosed space, both as a practical enclosure, but also experientially as a well-defined boundary, against the *horror vacui* of the boundless horizon of the world (Aben and de Wit, 1999). In the enclosed garden "the natural horizon is shut out and replaced by an internal horizon; the upper edge of its surround. Inside it, a paradise is depicted" (Ibid.). The enclosed garden, gathers the surrounding landscape within its boundaries, from which it excludes itself, but at the same time still remains "as broad as the landscape, in that it incorporates the expansiveness of the sky, and as contained as a building. Thus it is an intermediary between man and landscape" (Ibid.). Typically *hortus conclusus* had a well or fountains as a centrepiece, representing the fountain of life. Enclosed gardens, such as the tranquil walled gardens of Egypt, Babylon and Persia, with pools and surrounding fruit trees, have been an important feature of many ancient civilizations. These Oriental ideals of paradise, as evident most notably in the Moorish garden courtyards of the Alhambra, in Granada, Spain, were later translated and transformed more broadly within a Western context, from the Renaissance onwards through to the present day, as poetically reinvented for example in the abstractly minimalist courtyard houses of the Spanish architect Alberto Campo Baeza.

However, in the continuously expanding and increasingly densified cities of today, where nature and undeveloped space, becomes ever more scarce or fragmented by infrastructure, the role of the *hortus conclusus* in the contemporary urban environment is all the more vital, as an outdoor room or public space where we can reconnect with nature, at least in a compact and idealized form. In traditional East Asian architecture, courtyards played a major role in terms of both spatial and social organization, while they, on the one hand, provided privacy and, on the other, connection with domesticated landscape. As East Asian culture greatly influenced Orientalism in Europe and later 20th century modernism globally, this paper discusses the international re-emergence of the courtyard/ enclosed garden typology from a cross-cultural perspective in relation to a broader tendency towards the integration of landscape and nature within architecture, to create more sustainable and humane built environments.

2. Between the Self and the Universe

While Aben and de Wit discuss the *hortus conclusus* concept extensively in the Western context referring to the origins of this typology in ancient West Asia, they do not touch upon the subsequent development of courtyard typology prevalent in Asian architecture in general, and that of East Asia in particular. In this respect, cosmological theories were of great significance, since they did not only lay the basis for East Asian philosophies, religions and societies, but also dictated 'correct' ways to locate and construct cities, buildings, gardens and tombs, which is best known from the theories of Chinese geomancy, or *fengshui* (*kaso* in Japanese, and *p'ungsu* in Korean, all meaning 'wind' and 'water'). Many of these perceptions of the universe emerged already during the prehistoric times, were recorded in Chinese written manuals by the 500s BCE, including the *Book of Changes* (*Yijing*) among others, amalgamated in Confucian and Daoist theories, and merged into Buddhist doctrines when Buddhism spread from India around the beginning of the Common Era to China and gradually further to Korea and Japan.

As a result, a number of Chinese concepts, such as *dao*, meaning the 'way', became part of East Asian 'cosmologic vocabulary'. Daoism in particular, and later also Zen (Chinese Chan, Korean Seon) along with



other esoteric sects of Buddhism that were heavily influenced by Daoist thought – which was of great interest to Jørn Utzon (Drew 2000) – emphasized the relationship between man, nature and cosmos. The objective was harmony within the universe, that is, balance between the two cosmic essences of *yin* and *yang*. These cosmological conceptions formed a complex system of correlations and associations, which is also evident in architectural symbolism with the dualism of *yin* and *yang*, the cosmic life current *qi*, the eight *Yijing* trigrams, the five elements, as well as five colours, five tastes, five directions, and other categories of five comprising the cosmic correlations. In the term for cosmology, the first ideogram revealingly means architecture, specifically the home, and the latter stands for the universe (Kim 2011); in other words, a dwelling is regarded as an extension of cosmos.

In East Asia, a house is often considered a microcosm of the bigger universe reflecting the cosmological relationship of humans and their environment. The individual human being is understood as a 'micro-universe' and nature as the 'macro-universe,' with the house existing in between nature and the self. Among the various cosmological ideas frequently expressed in East Asian residences is also the balanced dualistic interrelationship of *yin* and *yang* in the use of paired concepts such as form/solid (roofed spaces) vs. emptiness/void (open spaces), figure (enclosed spaces) vs. ground (courtyards), passive rooms (*yin*) vs. active areas (*yang*), shade (*yin*) vs. light (*yang*), and so on (Knapp 2000). Yet, just like *yin* and *yang*, these are mutually complementary concepts, for there exists no *yin* without *yang* and vice versa. Accordingly, we should avoid the common division into two exclusive opposites, as in East Asian dualism both exist simultaneously, just as the house and the courtyard.

In order to bridge the enclosed building space (*yang*) and the outdoor courtyard space (*yin*), the transitional spaces have been functional features in both physical and ecological sense as well. These spaces played an important role in the connection of indoors and outdoors, but also contributed to the ecological performance of a house with semi-open transitional spaces that bring in natural elements of wind, air and light into the living areas, thus improving the indoor conditions. In this manner, the East Asian transitional spaces enhance the temperature control effect with no energy consumption by providing a buffer zone that can either connect or separate the interior and the exterior, depending on the climatic conditions outside and the adjustment of movable panels along the boundaries. Accordingly, a courtyard enhances the convection current due to the sun heating its surface which causes the heat rising upward and is replaced by the cool air flowing through the house from the shaded backyard. The eaves also contribute to the thermal comfort by providing passive cooling and heating, whenever either is desirable, with the depth of eaves depicted by the sun angles and temperature variations of a particular location in a given season of the year (Kim 2011). These features apply to East Asian houses in general, but because of space limitations, the focus below is Chinese and Korean courtyard typologies and their contemporary interpretations, not the least due to the conference venue location in Seoul.

One of the characteristics of traditional Korean houses, or *hanok*, is the layout that consists of several buildings that are rather asymmetrically arranged around connecting, and enclosed courtyards, called *madang*. This type of layout was influenced by Confucianism, particularly by the Neo-Confucian ideology of strict gender division. Consequently, a Korean house complex was divided into separated compounds: *an-chaе* for women and *sarang-chaе* for men, in addition to *haenrang-chaе* for servants in front of the house and *jungmun-chaе* that consists of storage rooms and the middle gate (*jungmun*) between the *an-chaе* and *sarang-chaе*. Further into the compound are other courtyards and attached or separate buildings, such as outdoor pavilions and ancestral shrines (*sadang*); the latter also reflect Neo-Confucianism, as ancestor reverencing was a significant component of the thought, while the ideal location on a hillside, opening to a valley and backed with pine trees behind was dictated by the Korean interpretations of geomancy. Also, the *sarang-chaе* in a Korean *hanok* is rather open to its surroundings, which reflects Confucian gender roles in the society, according to which men are in charge of the social representation of the family, while women are

responsible of family affairs (Sarvimaki 2003). Like always in vernacular architecture, local characteristics responded to the conditions of the climate and the site, available building materials and techniques, and other supplementary practical considerations, in addition to cultural values, customs, belief systems, and social hierarchies, contributing to the sense of place of each region as well as to that of each precise location.

As for contemporary examples, we can examine the work of Byoung Cho as one architect among many who has interpreted the courtyard typology. His Earth House, for instance, is a case in point of exploring the interrelationship between a house and nature, as well as the entire cosmos – or ‘the other’. The minimalist house of 14 x 7 m footprint was designed to honour Korean poet, Yun Dong-Ju, who wrote poems about the sky and natural phenomena. Cho explains that “being underground, one can experience nature more strongly and vividly, especially as the sky and the light change.” (Cho et al. 2014) The courtyard below the ground level does, indeed, make the sky above the prime architectural element and focus of the house, emphasising the expansiveness of the sky. This is similar to the description of the role of courtyard by Aben and de Wit. Next door we find the Concrete Box House that is almost a reverse application of the same concept – like active *yang* in harmony with the passive *yin* of the Earth House. The Concrete Box on higher ground of the site is a 14 x 14 m box with a 5 x 5 m courtyard open to the sky in the middle with a small reflecting pool as its centrepiece. Cho is quoted as stating that “I wanted the presence of the moon and moonlight to be very strong in the interior.” (Ibid.) This evokes various associations from the moon viewing platform of Katsura Detached Palace in Kyoto, to the heaven and earth connection, and to James Turrell’s ‘skyspaces’ erected in different places across the world, including one in Canberra, Australia.

3. Chinese courtyard typology

Because Chinese courtyard typology was particularly significant transcultural influence for Jørn Utzon, we should briefly look at how the most common type is laid out, as Utzon experienced those layouts during his visit to China in the late 1950s. The *siheyuan*, or a ‘quadrangular dwelling’, is a typical form of traditional Chinese houses in northern China, especially in Beijing. A simple *siheyuan* building complex consists of a rectangular main hall of three *jian* (‘bay’ or ‘column distance’) and annexed wings around a courtyard; some large compounds have more of such complexes in a row to house extended families. Regardless of the form of the floor plan, the Chinese courtyard houses share a strong axial and symmetrical quality, which reflects the Confucian ideology of social harmony and balance. Each house has programmatic usages that are hierarchically determined from the most public and inconsequential spaces in the southern part of the house axis, gradually increasing in privacy and significance toward the north. Individual sections/ buildings are distinctively separated and defined: the main hall in the north is occupied by the elders; the east and west wings (known as ‘guardian dragons’) are for the junior members of the family, while the living room, the dining room, and the kitchen are placed in both wings; further separation is determined by a person’s status and gender with womenfolk occupying the inner quarters (Knapp and Lo 2005).

Within these zones are various kinds of courtyards and semi-open areas that connect the boundaries and act as transitional spaces, while the enclosing walls provide the whole house compound with privacy in the urban environment. As a result, Chinese courtyard houses are tightly enclosed usually with only one main entrance, which significantly isolates the house from the outside environment, as doors and windows open only to the courtyards. Except for the entrance gate, only small openings very high up are cut to the outer walls, providing ventilation and illumination but no views into the house. In addition to practical and social considerations, this kind of layout reflects the cosmological conceptions, particularly those of *fengshui* (Sarvimaki 2000). Similar to the axial symmetry of Chinese capital cities, with the Imperial Palace and the Emperor – the ‘Son of Heaven’ regarded as the Heaven’s representative on Earth – along the axis, a Chinese courtyard house represents the same Confucian hierarchy in the family scale.



According to Kenneth Frampton, pre-eminently amongst modern western architects of the 20th century the Danish architect Jørn Utzon is notable for the extensive range of his inspiration from non-western sources, particularly the Chinese courtyard houses. These transcultural influences informed the design of his most iconic building, the Sydney Opera House, but also his prior Kingo Houses and Fredensborg Houses, which are his highly regarded courtyard housing projects in Denmark. These are an outstanding translation to modern architecture of the enclosed garden, taking inspiration from the traditional Danish farmhouses built around a central courtyard and also the courtyard houses along the *hutongs* of Beijing. Not only were Utzon's courtyard housing projects highly efficient in terms of land use, compared to typical suburban housing, but they were also highly successful in providing a great degree of privacy within the *hortus conclusus*, like a Chinese *siheyuan*, while at the same time engendering a considerable sense of community, through the creation of an extensive area of interstitial green common areas that flow between the fingers of the connected courtyard house units. Still, more than fifty years on since their realization, they remain greatly admired and held up as a model for further future development. According to Frampton, Utzon "strove for a building culture that would be more accessible to the society at large. For him there ought to be no inherent division between modernity and the continuity of architecture as a universal culture" and goes further to suggest that the validity of this approach "would never be more convincingly demonstrated than in the compact low-rise housing schemes that Utzon built in North Zealand, Denmark between 1956 and 1963" and that "no other architect in the West has demonstrated more convincingly the land conserving, socially cohesive and socially accessible virtues of this model." (Frampton 2004)

Utzon sought to promote and introduce his *hortus conclusus* form of courtyard housing to Australia, but unfortunately his early departure from the country, did not give him the opportunity to pursue this further. However, some of his Australian contemporaries, most notably the Melbourne architect and critic Robin Boyd, whose own and other houses, as well as those of other contemporaries, particularly in Melbourne, during the 1950s, 60s, and through to the 70s demonstrated the benefits of this typology, that is so appropriate within a climate and culture so focused on outdoor living. Since that time there have been a few outstanding examples of the *hortus conclusus* within Australian architecture, in the work most particularly of Richard Leplastrier, who worked with Utzon in Australia and with Kenzo Tange in Japan. Leplastrier's palm oasis of the Bilgola Beach House in Sydney, surrounded by a rammed earth wall, is a most transcendental experience of the return to a tropical garden of Eden. Other notable Australian architects working with this typology and with influences from Asia, includes Brit Andresen and more recently the practice of Brian Donovan and Timothy Hill, in sub-tropical Queensland. However it is a typology that has seen limited development until more recently, with such pressing issues as necessity for densification, increasing demand for multi-generational housing, and distinction between private and public, has seen a return of the enclosed courtyard.

4. Conclusion: Contemporary courtyard goes vertical

In Utzon's homeland Denmark Bjarke Ingels has elevated and stepped the courtyard housing typology, as in the Mountain Housing in Copenhagen. However, it is within recent Asian architecture, that the most significant design evolution has occurred in terms of integrating nature within very large, high-density urban housing developments. The innovative and influential ecologically-minded Malaysian architect Ken Yeang was among the first architects in Southeast Asia proposing bio-climatically well-considered development of green skyscrapers, with *hortus conclusus* on virtually every level. While Yeang is concerned with architecture as living constructed ecosystems, the architecture of the Vietnamese architect Vo Trong Nghia focuses on the more phenomenological human needs to connect with nature and therefore seeks to re-introduce trees and greenery back into dense urban contexts that have otherwise become disconnected from nature.

Similar notions inform the work of the Australian/ Singaporean practice of WOHA, which sees the possibility of re-introducing the landscaped ground plan, as clearly articulated ‘sky-gardens’ many times over at intervening levels within a dense urban structures, as a means to moderate and humanize vast high-rise building complexes; through creating a closer contact to the verdant nature within these elevated *hortus conclusa*. The increasing scale and volume of such projects that WOHA and others are designing, not only in Singapore, but also internationally, suggest that such a focus on re-introducing nature by means of the *hortus conclusus*, but artificially raised up from the ground plain is becoming an ever more significant and transformational element of the built environment, within Asia and increasingly in Australia, as elsewhere; in the age of the mega city. Although the above-described courtyard typology is an ancient precedent, as discussed in this paper, future research and development will demonstrate its potential continued relevance and benefit in ecological, social and experiential aspects. That is to suggest that we still yearn to return to the ‘paradise’ of the enclosed garden in a rapidly changing built environment and climate, for which the courtyard typology offers a well-proven solution.



Fig.1. Evolvement from Utzon's Fredensborg Houses, to BIG's Mountain Housing, to WOHA's Vertical Cities Asia.

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