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The Impact of the Variation of Sky View Factor on Landscape Degree of Enclosure of Urban Blue and Green Belt

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Abstract : Urban Green Belt and Blue is a part of the city landscape, it is an important constituent element of the urban environment and appearance. The Hsinchu East Gate Moat is situated in the center of the city, which not only has a wealth of historical and cultural resources, but also combines the Green Belt and the Blue Belt qualities at the same time. The Moat runs more than a thousand meters through the vital Green Belt and the Blue Belt in downtown, and each section is presented in different qualities of moat from south to north. The water area and the green belt of surroundings are presented linear and banded spread. The water body and the rich diverse river banks form an urban green belt of rich layers. The watercourse with green belt design lets users have connections with blue belts in different ways; therefore, the integration of Hsinchu East Gate and moat have become one of the unique urban landscapes in Taiwan. The study is based on the fact-finding case of Hsinchu East Gate Moat where situated in northern Taiwan, to research the impact between the SVF variation of the city and spatial sequence of Urban Green Belt and Blue landscape and visual analysis by constituent cross-section, and then comparing the influence of different leaf area index – the variable ecological factors to the degree of enclosure. We proceed to survey the landscape design of open space, to measure existing structural features of the plant canopy which contain the height of plants and branches, the crown diameter, breast-height diameter through access to diagram of Geographic Information Systems (GIS) and on-the-spot actual measurement. The north and south districts of blue green belt areas are divided 20 meters into a unit from East Gate Roundabout as the epicenter, and to set up a survey points to measure the SVF above the survey points; then we proceed to quantitative analysis from the data to calculate open landscape degree of enclosure. The results can be reference for the composition of future river landscape and the practical operation for dynamic space planning of blue and green belt landscape.

Keywords : sky view factor, degree of enclosure, spatial sequence, leaf area indices
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