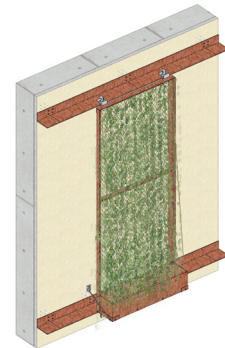
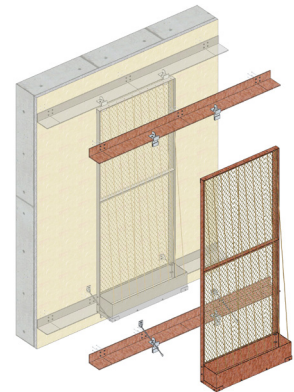


BONAN YANG

PLANTING GREEN TO THE SKY

- vertical greening of existing residential building facades in Gothenburg



BUILDING DESIGN FOR SUSTAINABILITY

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The background of this thesis is based on the development and expansion of modern cities, especially in downtown areas, resulting in a large reduction of green lands and the decline of urban ecological environment. With the increasing density of buildings, architects should think about how to increase the greenery coverage by design, thereby improving the urban environment. This thesis focuses on the design of the building-facade greening.

The main research object of the thesis is the existing residential buildings in Gothenburg, and making greening regeneration for different types of facades, which should be in the principle of feasibility and adaptability, low cost and maintenance. The projects could provide solutions, in both aesthetic and ecological ways, to the house upgrading.

The first section is about the studies on the context, like the influence, types, plants and maintenance of conventional façade greening around the world, and the situation of climate, residential building and suitable plants in Gothenburg. The second part is to find greening strategies for different building conditions, like height, material, orientation, components, and think about how to reuse materials and rain to make the system more

sustainable and low-cost. The third part is about greening design of three chosen facades in different conditions, which consists of their general greenery views, constructions, materials, details, suitable plants and maintenance.

As the result of this thesis, I design multiple methods of façade greening for different building conditions, by listing their adaption and suitable plants, showing their constructions, details and materials. These methods are utilized on the three chosen building facades, bringing the facades more beautiful and ecological appearances with green elements. In addition, these greening methods are flexible, and they can bring more potentials of façade patterns, when the combination are different.

There are many parameters impacting on the success and sustainability of the greenery system, such as climate, building conditions, plants, maintenance. It is important to have integrated and holistic analysis of these parameters, thereby finding right solutions for different projects.

Keywords : Vertical greenery design, Residential-building facade regeneration, Maintenance of plants & irrigation, Recycled material, Detail solutions.