CARBON IMPACT OF SHARED SPACES IN URBAN
HIGH DENSITY RESIDENTIAL PROJECTS: CHINA

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Abstract

Reducing greenhouse gas emissions has become a controversial topic that needs to be researched thoroughly. When reducing the carbon emission of urban high density residential buildings, decreasing and carbon emission caused by residents’ behavior along with the carbon emission of construction material and building’s heating/cooling energy consumption is of the same importance, while the former has always been ignored. In the design phase, decisions regarding shared spaces will influence the building’s shape, thus anyway considerable negative effect on carbon emission both at construction stage and building heating and cooling energy consumption. Therefore, it is not welcome when it is related to low-energy buildings. However, shared space such as the opened first floor or balconies can provide amenity places for residence so that on the other hand decrease the frequency of transportation on motor vehicles. This study will analysis the extent to which changes in shared spaces affect the physical and social performance of carbon emission of urban high density residential projects, and thereby provide pre-design information for future reference for residential buildings with less carbon emission and less environmental pollution.

The dissertation proves that the value of shared spaces in residential projects lies not only in the humanity aspect, but also in the contribution to carbon emission
reduction. This research displays a deeper and wider understanding in shared space, which provides new concepts on shared space for designers, policy makers, as well as normal residents, with which both the sustainability and living quality of the residential building could be enhanced.

**Key Words:** Residential building, Shared space, Carbon emission reduction