

Abstract

Nowadays Bangkok metropolitan area encounters the same housing problem as other big cities in the world. The escalating population density together with the constraint of high pricing and limitation of land availability in the central of Bangkok forces the middle-class to struggle for small-sized housing near workplace, for example, condominium near BTS. Furthermore, design of condominium has not responded well to the exact needs of specific resident groups. In the same manner, the influx of traffic into CBD (*central business district*) from those who live in the remote suburban area has exacerbated the traffic congestion problem. Accordingly, the “compact modular house” design, that can be built on the small plot of land with flexible and adaptable function based on the modular system, aims to reduce the price of the house by building on smaller plot of land, but still located in the urban area.

This study focuses on 3 main objectives: 1) To analyze the overall situation of housing need in Bangkok and withdraw the housing demand of Bangkok's middle class, who are compact house's target group, as determined by the price, the size and location selected; 2) to find out spatial design method and technique employed in compact house's case studies from abroad (10 compact house's case studies) and finding adaption of modular system from 3 designers who have created modular houses in Thailand that decrease the cost and time for compact house construction by using modular and manufactured system; 3) to present compact house's model as guidelines for developing the housing and house regulations in Thailand.

This study investigates the document and researches concerning compact house modular system and also comparison of the area ratio of case studies. A compact house of 6x9 m is planned on 35 sq.m site and comprises of 5 modules, each 3x3x3m. The plot size is smaller than the 50 sq.m for a single house as controlled by land subdivision regulation. The dwellers focus on the number of room and spatial functions more than the size of house. The finding is revealed through questionnaire answered by 130 people who work in Bangkok regarding their attitude toward nowadays housing and on compact house proposal.

The study presents that nowadays a Bangkok's family has about 4 members and if dwellers look for the next habitat they mostly target on new single houses built on their own land. Among these, 20% have decided to live in compact houses and the most popular style is

“modern style”. The target group gives high score for the model of compact house and the 5 factors that people choose compact house are: 1) The location being nearby workplace or convenient regarding transportation; 2) reasonable price; 3) good design and good quality materials; 4) adaptable function; 5) house area being appropriate to family size. The first hypothesis postulates that the compact house main target would be young families who just start their married life; however, it turn to be the group of 40-45 year old families, that are going to retire and do not need the big space for family to grow anymore.

The price of house and land at about 2.5-4.5 millions bath is an acceptable price for the target group and the small size is not a problem if the house still be able to serve all functions and located in the convenient area of Bangkok. This study will be beneficial to the housing property investment or house owners in Bangkok who want to build their houses on their own land and also could be guidelines for the amendment of housing law concerning plot size in the future.