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Shop-Houses Facing West or Southwest in Hanoi - Reconceptualised in View of Indoor Thermal Comfort and Energy Efficiency

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Abstract

Shop-houses remain a popular (and favourite) housing pattern in Hanoi nowadays, especially in central districts and even in new urban areas where high-rise apartment buildings are constructed on a large scale. However, in many shop-houses, both old and new ones, the “shop” and the “house” conflict with each other. In addition to noise and exhaust gas from heavy traffic flows, shop-houses facing west are largely affected by solar radiation and hot wind. Thus they should be regarded (and selected) as the most disadvantageous and difficult case study. A new layout concept will then be developed to solve the problems radically.

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1. Introduction

Shop-house was the oldest urban housing pattern in Hanoi – a city with an over-one-thousand-year history. There are three shop-house generations: traditional shop-houses in the Ancient Quarter before 1885 when the French occupied the city and began to establish their domination, colonial shop-houses which were constructed in the French Quarter between 1885 and 1954 and contemporary self-built shop-houses which have been popular since 1986, the year saw the radical reform from the socialist plan economy into an open market economy. The first two

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types, if still original, may be categorised or classified as “architecture heritage” and should therefore be considered for conservation purpose. Then the paper focuses on contemporary shop-houses only. Most of them are no longer appropriate for living as a consequence of an uncontrollable spatial transformation in the open market economy. For those shop-houses facing west or southwest, the problems will be more difficult to solve and selected as a case study in this paper, because they are not only affected by the negative influences in a fast-growing mega-city with a very high building density and heavy traffic flows, but also by the most unfavourable climate factors on account of their directions.

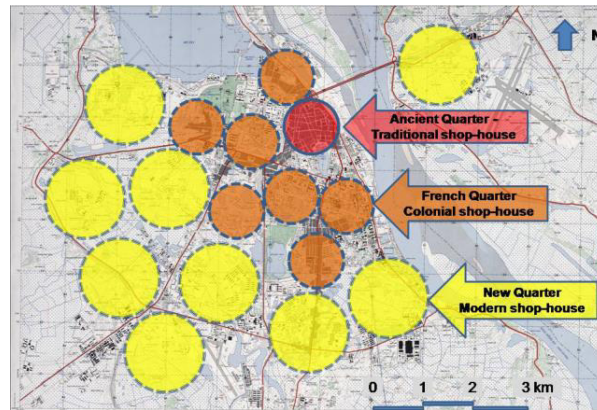


Fig. 1: Zoning of distribution and location of shop-house types in Hanoi [1]



Fig. 2: Typical shop-house patterns in Hanoi throughout the city development history [2] (a) First shop-house generation in Hanoi (in the Ancient Quarter); (b) Second shop-house generation in Hanoi (in the French Quarter); (c) Third shop-house generation in Hanoi (in New Quarters – post-1986 era)

The following characteristics of typical modern shop-houses should be noted and considered for a proper new building concept, first of all for floor plan layout and then for façade design:

- Width: around 4 m in most cases
- Length: around 20 m in most cases
- Height: three to four (sometimes five) storeys, 3.5 m per floor
- Shop area or office for rent in the front: around 20 m² (4 m x 5 m) for a small or medium-size shop, and around 30 m² (4 m x 7.5 m) for a large shop

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