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Multiple and intensive land use: case studies in Hong Kong

S.S.Y. Lau, R. Giridharan, S. Ganesan*

Department of Architecture, University of Hong Kong, Hong Kong, Hong Kong

Abstract

Multiple Intensive Land Use (MILU) achieves intensification of land use through mixing residential, commercial and other uses at higher densities at selected urban locations, while being supported by an efficient public transport and pedestrian network. Successful case studies in Hong Kong have more than five uses, i.e. Residential, Commercial, Recreational, Community facilities and Transport facilities. The residential component in these projects is usually between 30% and 65% of the total gross floor area. The MILU concept is being implemented in subsidized public housing projects as well. Multiple land uses within the podium, together with access to five or more modes of public transport and an accessible network of multilevel pedestrian links create the necessary variety, vitality and viability. The paper examines three different generations of MILU fabric and discusses the integrating design variables, while focusing on the life style and design approaches of Hong Kong.

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Historical introduction to MILU

The ever-increasing world population has continually stressed the need for intensive but sustainable development. There is a strong belief among professionals that multiple intensive land use (MILU) has the potential for achieving sustainable development (Walker, 1997). But, there is limited empirical evidence as yet to support such a contention (Rowley, 1998). Mixed use can be broadly defined as multiple land use where no one type dominates. As a guideline, floor area allocated to any single use in a development should not be more than two-thirds of the gross floor area of the entire development. Multiple uses have been categorized as mixing of revenue producing uses i.e. commercial, residential, recreational, institutional and industrial including

*Corresponding author. Tel.: +852-2859-2133; fax: +852-2559-6484.

E-mail address: sganesan@hkusua.hku.hk (S. Ganesan).

different types of housing, owner occupied and rented accommodation, public and private uses, as well as accommodation of different social groups (Coupland, 1997).

Most of the European cities before the industrial revolution were of mixed use and self sustained low-density locations (Coupland, 1997); people had shops and offices on the ground floor and the residential facilities on the upper level or levels. These cities became crowded after the industrial revolution. Architects and urban designers responded to these population pressures with distinct patterns of settlements. Technological developments within and outside the building industry significantly influenced the emerging concepts and urban forms. The *suburbia concept* was prominent among these. For example, Frank Lloyd Wright conceptualized the Broadacre City in the 1920s as a suburban model for American cities, partially as a response to higher residential densities building up within existing urban areas. The Broadacre City accommodated various uses in a land of four square miles at low density. Its viability was predicated on high automobile use. Lloyd's concept also displayed a particular architectural character in the eyes of many (Krohe, 2002). In principle the suburbia concept became popular with better access to automobiles and speedier transport facilities (Argan, 1968; Krohe, 2002).

Le Corbusier floated the Radiant city concept in 1933, which also could be described as a response to increasing population and overcrowding. The concept incorporated mega structures with multiple uses where the buildings stood out in contrast to nature and in a less harmonious posture with the existing landscape (Argan, 1968). Le Corbusier's concept was considered a machine age product and never materialized, perhaps because it was not socially acceptable at that time. This machine age character was to be seen on a small scale in his later design of the Indian city of Chandigarh.

Fishman (1998) has postulated that Ebenezer Howard's "Garden City" concept was not entirely new, and incorporated features advocated by Lever (1852–1925) and George Cadbury (1839–1922) in their designs developed for the industrial workers in UK. The garden city concept provided the impetus for Greater London's expansion in 1944, which was achieved at low density and dominated more by diverse, single use concepts rather an integrated multiple land use model. This diversity was carved out on a human scale amidst the existing green and natural environment. The garden city concept was essentially a suburbia concept. In the end all these suburbia concepts led to urban sprawl and created other environmental problems such as privatization of open space, soil erosion, fragmentation and reduction of agricultural land and water bodies and reduction of social capital (Rowley, 1998; Coupland, 1997; Freeman, 2001). House building on private plots in the suburbia demanded large tracts of land for infrastructure and social services. Especially, the hard surfaces of the road networks contributed to urban heat island intensity. Urban migration and huge increases in population also indirectly compounded the problems of the suburbs.

Planners had to respond to this in part by developing high-density residential settlements within the city limits. Until the 1960s, to a large extent these developments in both American and European cities were developed on a single use-zoning plan; the developers in the UK often rejected mixed-use models on the grounds of high development costs (Coupland, 1997; Rowley, 1998; Zhang, 2001). Cities such as Chicago, Los Angeles, Berlin, Liverpool, Manchester, Paris and etc incorporated low-rise walk-up apartments in single use neighborhoods at moderate densities to accommodate the industrial workers especially after Second World War. In the mid-1960s Asian cities such as Bombay, Karachi, Colombo, Bangkok and Seoul also adopted similar

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