

Context, built form and space: A case of public housing estates in Hong Kong

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The context of public housing development in Hong Kong can be traced back to a deep rooted history when it was a need rather than a choice. At present, the public housing estates have become a much desired residential destination by the general people of Hong Kong although several changes in design have been observed that are not completely adapted by the residents. This study aims to investigate on the changing phenomenon of the context and the built form; and its impact on space in terms of adaptability by the residents. It has been found that, forced or formal communal spaces influenced by self-conscious culture discourage social interaction where quantitative measures are only applied, and informal communal spaces encouraged by unselfconscious culture bring happy social life. Contemporary built forms in the housing estates have changed a lot both externally and internally, and attention has been given to quantitative measures and formal spatial arrangements. As a result a gap is emerging between context, built form and adapted use of space. Therefore, measures such as qualitative approach, sensitively designed spatial arrangements are recommended to minimize the gap.

Key words: *Context, Built form, Space, Public housing, Social interaction*

1. INTRODUCTION

Over the last few decades Hong Kong's extreme high density of population and scarcity of buildable land has generated a distinctive circumstance. In the current context, more than half of the population of Hong Kong wants to live and work in close proximity to the Central area or Central Business District (CBD) and prefers a social life that mixes private and public space (Lau et. al. 2005, p.527). Currently, there are 650,000 public rental flats in Hong Kong Housing Authority's portfolio, accommodating approximately 2 million people which are about one-third of the population of Hong Kong (Yan, 2006, p.3). Apart from this rental system there are few schemes which permit people to possess flats at an affordable price. The flats here are rented and sold at a lower price than the market rate. The Public Housing Estates are therefore very much desired by the general people of Hong Kong. And the demand is increasing day by day.

To meet the demand the Hong Kong government has taken initiatives through redevelopment of older estates and developing newer estates, and the physical environment has been changing along with the built form. The physical environment or space produced by the built form plays a

major role towards the social aspect of a housing estate. Interestingly, the planning and design standard of the provision of social facilities has been rising over decades to meet the needs of different residents. However, the planning and design measures are mostly guided by quantitative approach. This study aims to investigate on the changing phenomenon of the context and the built form; and its impact on space and social life of Public Housing Estates, by comparing two public housing estates of Hong Kong which are constructed at different times, namely Wah Fu Estate and Shek Pai Wan Estate. The basis of selecting these two distinct estates is- they are both public housing estates and they capture different timeline.

2. OBJECTIVES

The objectives of the study are –

- To observe the changes in the spatial arrangements shaped by the context and the built form of the housing estates.
- To investigate the allocation of spaces and its impact on the residents.

3. METHODOLOGY & DESCRIPTION OF THE DATA COLLECTION INSTRUMENTS

To have a comprehensive assessment - desktop research, observation technique and direct communication with residents as well as key persons have been conducted for this study. The observation technique has been conducted to the residents following different times in the day to observe the change in the behavior of the neighbors in terms of use pattern and level of interaction. Though there are certain limitations in the observation method, such as- limited information, interference of unforeseen objects, expensive and time consuming; this technique has been chosen to understand the spatial use and behavior of the residents towards space and to eliminate the subjective biasness which may occur while studying literature. Major locations of the study areas, internal space feature of the built form, and access of residents were the main object of study. Therefore, a non-participant (i.e. observer's presence is unknown) and structured observation has been considered appropriate for this study.

A Small-scale interview was conducted with the residents as well as key persons in the study areas. For the residents, questionnaire was comparatively short and straightforward following multiple choice (alternative answer list), dichotomous pattern and open-ended questions. Random sampling method has been applied for residents' interview. The target of this structured interview was to cross check the result obtained from the observation method. For instance, level of neighborhood interaction, choice of roaming around etc. For key persons unstructured interview was conducted providing the idea/objective of the research.

4. PUBLIC HOUSING CONTEXT IN HONG KONG

4.1 Development Context

The development of public housing in Hong Kong can be traced back to 1953 when a large fire broke out in one of the squatter areas, Shek Kip Mei, rendering 50,000 people homeless (Yan, 2006, p.4). As a result, Hong Kong Government carried out a massive Resettlement Program to house the homeless people. By 1973, around 1.8 million people lived in public housing. With the advancement of the society, in 1970's, the housing policy had been changed with a view to provide Permanent Housing to the

citizens. As a result, old resettlement housing estates were converted and redeveloped, and more permanent public rental housing estates were built and facilities such as shopping centers were included in order to provide better services to the residents.

4.2 Policy Context

Before 1950s, there was no public housing in Hong Kong. Unexpectedly at that time, masses of refugee surged into Hong Kong as a result of the Civil War in China. These people started to live inside squatters and as a result the number of squatter houses increased radically. In order to accommodate this large number of victims, Hong Kong government started to provide public housing in terms of low-cost housing estate with affordable cost. These type of housing estates only provided living units with communal toilets. The unit size used to be 120 sq.ft/ family of 5 adults (Yan, 2006, p.4). In the early 1970, as a step forward the government introduced a "Review of Policies for Squatter Control, Resettlement and Government Low-cost Housing" to give direction in providing public housing to resettle the victims, and a Temporary Housing Scheme was launched. Under this scheme, the resettlement blocks became high-rise buildings. Internal facilities including balcony and toilets were provided inside each of the flats and general (i.e. external) facilities like open space and playground were provided in the estates.

4.3 Planning and Design Context

As a dense and compact city, Hong Kong supports a density of over 6,000 people per square kilometer mostly living in the urban areas. However, due to the scarcity of land resources, Hong Kong government had set up the 'Hong Kong Planning Standards and Guidelines' (HKPSG) to facilitate better land use management. For instance, the allocation standard for public rental housing is 7.0 m² per person of internal floor area; and the outdoor open space provision, including both passive and active, is 1.0 m² per person (HKPSG, Chapter 4, Section 1.8.4). According to Hong Kong Planning Standards and Guidelines some of the provisions related to spatial arrangements and use of space and enhances social life are-

- a) *Principles of Recreation and Open Space Planning* (Chapter 4, Section 1.5.1): The four principles, namely Quantity, Quality, Good Practice and

Vision have guided the spatial arrangement of recreation facilities and open space planning

- b) *Ratio between Active and Passive Open Space* (Chapter 4, Section 1.9.1): A 3:2 active to passive ratio should be applied in District Open Space to provide space for outdoor core activities as well as for passive recreation.
- c) *Recreation Facilities for the Elderly* (Chapter 4, Section 1.18): Appropriate outdoor facilities such as fitness stations with equipment suitable for use by elderly, Thai Chi areas with rain shelter and seating, etc. should be incorporated where they make frequent visits.

Other than the “Hong Kong Planning Standards and Guidelines”, there are some internal design guidelines from Housing Authority on the housing development, to consider the layout of the building blocks, the orientation of the site, the provision of open space and the recreational facilities.

5. CONTEXT, BUILT FORM AND SPACE: A THEMATIC LINKAGE

Context:

The time component implies that the past, the present, and even the future can provide vehicles for contextual relationships (Macasai, et al. 1982, p.333). Indeed contextual understanding is particularly significant when a building and spaces within are studied in relation to its surroundings. The same goes for discussion on housing sites where several built forms on the same site must correlate. Merrill C. Gaines (quoted in Macasai, et al. 1982, p.333) describes contextual issues as formal patterns, activity patterns, and climatic patterns and deals predominantly with the first two (the third being extensively covered in specialized literature). According to him –

- To observe formal patterns, architects have a geographic as well as a temporal range from which to draw inspiration. The geographic component suggests that influences can come from near or far; from immediate source, local sources or regional sources. Immediate geographic sources are those ‘next door’.
- In the case of activity patterns, the sources of inspiration are not built form, but rather observations about human behavior, such as: circulation, individual behavior, and group behavior. In each instance, the pattern is established by some type of human

activity within the contextual setting such as movement, socialization, territoriality, and so on.

- The most important criteria of contextually responsive design are “appropriateness, reinforcement-amplification, and ambiance”.

Built form:

Again time cannot be ignored while discussion on built form comes over. In the past, traditional people searched built form incorporating new ideas to accommodate their functions and aspirations. Now-a-days city people rush to have a flat at an affordable price at their desired location to save time, money etc., although they yearn for the courtyard houses inherited by their forefathers. At this point Alexander (1970, quoted in Mitchell, 1992, p.33) sounds a note of caution, - ‘*Yes most definitely, both form and context have changed. But beware, un-adapted traditional form is unlikely to match the aspirations, changing ethos and world view.....*’ His notion is highly valid for the contemporary society. By the term ‘traditional form’ he wanted to indicate traditional way of arranging space that represented their living pattern. This means un-adapted living pattern will soon lose its identity, and it would no longer match people’s aspiration. The attention goes towards arrangement of space, i.e. quality of spatial arrangement supported by people’s aspiration. Because adapted or supported spatial arrangement will establish a harmonious relationship between people and space and that will enhance social life. Inevitably the idea of Abu-Ghazze (p.42, 1999) can be cited here, he says -“it is not the amount of open space, but the arrangement of space that helps determine the use of that area.” Although he pointed on open space, the basic concept goes for each and every space designed for the housing estate. Because space is shaped by built form and built form is shaped by context subsequently.



Figure 1: Location of Wah Fu Estates and Shek Pai Wan Estate.
Source: Google Map

Table 1: A Brief about Cases:

Name of the project	Wah Fu Estate I & II	Shek Pai Wan Estate
Construction duration	1960-67	2001-05
No. of Phases	5	2
No. of blocks	18	8

Legend

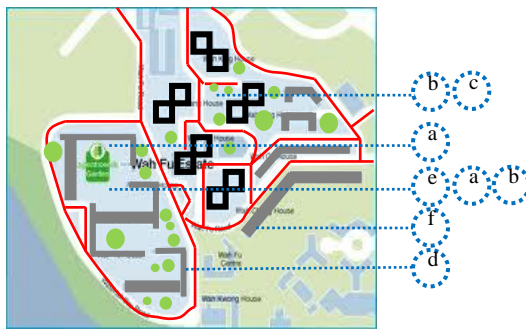
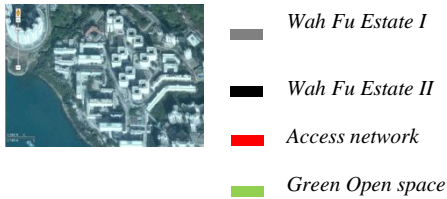


Figure 2: Wah Fu Estate, Master Plan & modified Master Plan showing different facilities in the Estate Source: Google Map

6. CASE STUDY

6.1 Wah Fu Estate

The Wah Fu Estate, located at the Southern District of Hong Kong Island, is one of the ten low-cost housings of the earliest public rental estates. The Wah Fu (I) Estate provides 4800 housing units accommodating 13500 residents and Wah Fu (II) Estate provides 4300 housing units accommodating 14300 residents (HKHA 2008a). Wah Fu Estate is the first estate in the form of a town (HKHA 2008b), which has its own shopping mall, it can be regarded as a pioneer of that time. In the form of community facilities around Wah Fu, there are parks, playgrounds, shopping centers, markets, schools, car parks and public libraries to fulfill the needs of the dwellers. Besides, the height of buildings varied according to their distance from the coast. Building near the coast is relatively low-rise and vice versa. The designs lead

most households to have a sea view (Yeung & Wong 2003).

The context of planning for Wah Fu Estate was aimed to attract people to move away from the concentrated urban area within Victoria Harbour. To achieve that goal, Wah Fu Estate was designed to have adequate community facilities for the residents. Facilities are placed in accordance with the daily use and need of the people. Though there is little physical exercising facilities provided. The shopping centre provides a great opportunity to residents for social interaction

Site planning: (space & spatial organization)

Refer Figure 2.

Facilities in Wah Fu Estates

a	Sitting out areas (scattered in the estate)
b	Open spaces
c	Children Play Areas
d	Elderly Home
e	Outdoor fitness areas
f	Shopping centre



a b and c



d and e

Figure 3: Different spaces of Estate.



f f

Figure 4: Shopping and Wet market

The usage of the space drops after a period until evening when some residents go out to sit or have a walk after their dinner.

Built form

For the building design, the Wah Hing House and Wah Sang House was the first floor plan to adopt the “Twin-building” design (Figure 6) which differed from the past style, “Central Corridor” and “Linked to balcony” (Figure 5).

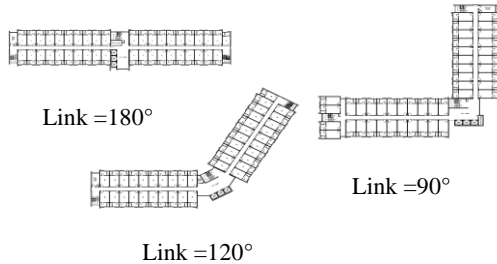


Figure 5: “Central Corridor” and “Linked to balcony”, HKHA, 2012

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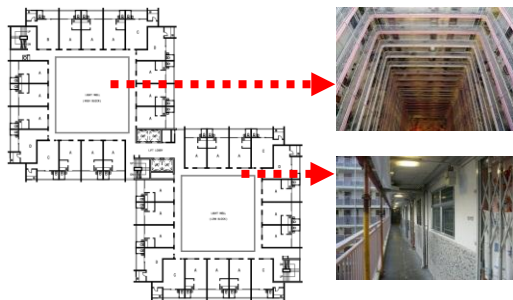


Figure 6: Typical floor plan of “Twin-building” design, Single loaded corridor phase II, Source: HKHA, 2012

6.2 Shek Pai Wan Estate

The Shek Pai Wan Estate (Figure 6, 7 and 8) is a rental housing managed by Hong Kong Housing Authority, located at the southern part of Hong Kong Island (HKHA 2008c). One of the characteristics of this estate is that it has undergone 2 generations as the estate had been cleared and redeveloped during the development timeline. The 1st generation Shek Pai Wan Estate, was firstly built in 1966, with only 7 buildings with minimum 7 to maximum 16 stories (HKHA 2008d)

During the day time, the sports grounds remains quiet and less crowded and sometimes nobody is found to use it (Figure

9: a,b). But the scenario changes during afternoon. The basketball court becomes full of teenagers. Residents sit on the seating area and chat with their friends and neighbors. The fitness area for the elderly is also situated beside this open space (Figure 9 d). The area outside the primary school and kindergarten is another place for parents to have interaction (Figure 9, c). The large open space with hard surface seemed empty and the space lacks greenery (Figure 9, e.).

Site planning: (space & spatial organization)



Figure 7: Shek Pai Wan Estate, Master Plan, Source: Google Map

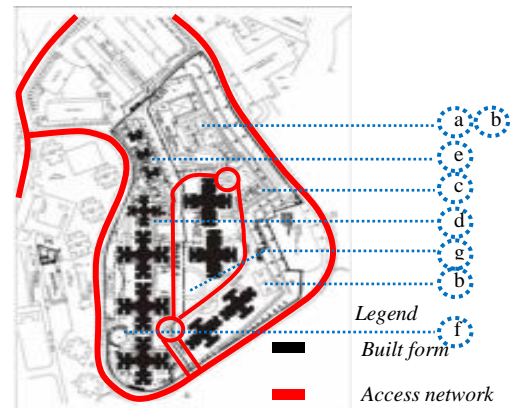


Figure 8: Modified Master Plan showing different facilities in the Estate, HKHA 2012.

- a Basketball Court
- b Badminton Court
- c Children Play Areas
- d Integrated Children & Youth Centre
- e Neighborhood Elderly Centre
- f Fitness Area for Elderly
- g Large open space (with hard surface)

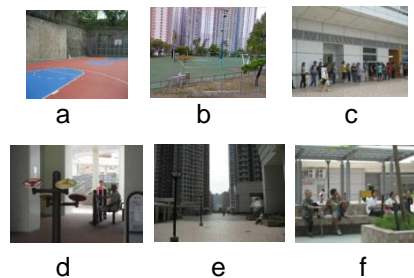


Figure 9: Different outdoor spaces in the Estate

During the day time, the sports grounds remains quiet and less crowded and sometimes nobody is found to use it (Figure 9, a,b). But the scenario changes during afternoon. The basketball court becomes full of teenagers. Residents sit on the seating area and chat with their friends and neighbors. The fitness area for the elderly is also situated beside this open space (Figure 9, d). The area outside the primary school and kindergarten is another place for parents to have interaction (Figure 9, c). The large open space with hard surface seemed empty and the space lacks greenery (Figure 9, e.).



Figure 10: Shopping mall with posh outlook and MTR entrance

The estate is connected to a shopping mall with posh outlook and MTR entrance (Figure 10).

Built form

The built form appeared as a prototype character with rigid and formal pattern of space quality in the corridor spaces. This lobby space has been found less interactive towards the neighbors as the spatial arrangement doesn't allow community gathering (Figure 11).

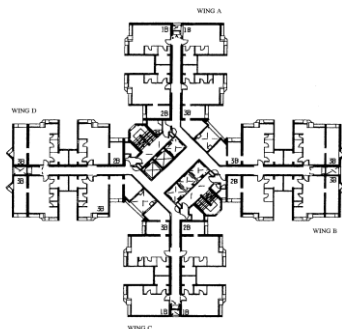


Figure 11: Typical Floor Plan of Shek Pai Wan Estate, HKHA, 2012.

7. SURVEY FINDINGS AND ANALYSIS

The level of neighborhood interaction has been found moderately better in Wah Fu Estate than Shek Pai Wan Estate which is a result of social space. The conducted questionnaire survey revealed that in the earliest estate (Wah Fu Estate) most people knew each other and their level of

interaction is moderate, while in Shek Pai Wan Estate most of the residents know little about each other (Figure 12).

During leisure or free time the Wah Fu residents tend to stay inside the estate and enjoy the sitting areas and open spaces scattered around while the Shek Pai Wan residents are more willing to go outside the estate, stay at home or go to shopping (Figure 13).

7.1 Interview Summary

Two interviews were conducted with District Councilor and Chief Architect, Housing Department respectively.

A collection of key points from the two interviewees are discussed below:

According to Mr. Chai Man Hon (District Councillor)-

Since the elderly population in the estate has increased, there is a rising demand in the provision of facilities like benches and physical exercising equipments in the parks and public spaces. Public spaces are randomly located in the estate so gathering of people are not as concentrated as in Shek Pai Wan Estate.

According to Mr. John Ng (Chief Architect, Housing Department, HKSAR)-

Shek Pai Wan Estate is located in an urban context; residents may therefore have less chance to interact. On the other hand, Wah Fu Estate is at discreet location, the residents tend to interact more among themselves. As there are some active NGOs in Shek Pai Wan Estate which organize residents' activities, the residents thus can have more interactions than in Wah Fu Estate.

8. DISCUSSION ON FINDINGS FROM THE ANALYSIS OF THE INTERVIEW AND SURVEY RESPONSES

Random location of open spaces in the older estate has encouraged an informal space quality which plays a major role to increase neighborhood interaction. The internal communal spaces are also designed to nurture community gathering. The informal spaces thus provide scope for social interaction among neighbors.

Recent housing estates are mostly designed for the urbanites that tend to be very busy with modern life rather than social life, and therefore a third party, such as NGOs are welcomed to organize residents' activities

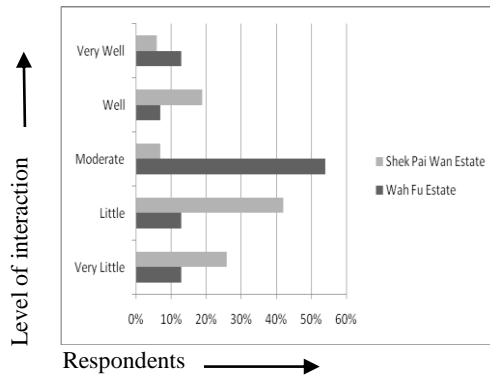


Figure 12: Level of Neighborhood interaction

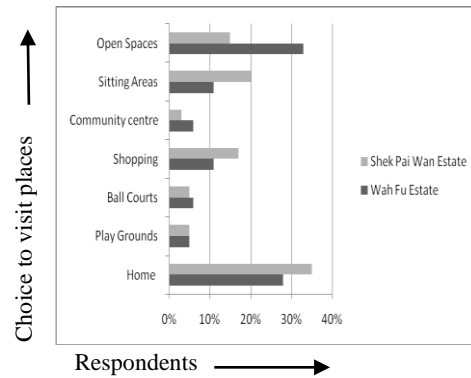


Figure 13: Choice to visit at free time

for social gathering whereas the older estates do not need such initiatives. Moreover, the communal spaces (i.e. corridor/lobby) somehow appear as a formal space. Thus the newer generations are losing the culture of social interaction. However, modern sports grounds turn out to be a place of interaction among teenagers although they remain empty at day-time. Thus attention is needed to enlighten the qualitative side of the estate.

9. A COMPARISON OF COMMUNITY AND OPEN SPACES BETWEEN BOTH CASE STUDIES

From the resettlement housing of Shek Kip Mei Estate to the self-contained Wah Fu Estate and latter the new Shek Pai Wan Estate, residents have been making use of different community spaces to interact and develop their community network. The entrances of units in older estates used to be facing each other and they could interact through corridor ways. In contrast, the lobby space and corridor in the new design is narrowly planned. Thus the internal layout of newer residential blocks has influenced the activity pattern and is found to discourage social interactions, and the space remains un-adapted being a formal access way. These factors greatly reduce the chance of social interaction among the neighbors. (Figure 14)

In the Wah Fu Estate the open spaces are scattered and lots of green areas are conserved. The indoor as well as outdoor spaces have been found informal and well adapted by the residents. And community facilities are adequately placed for the residents. As a result a comfortable living environment exists all through the estate. For the case of Shek Pai Wan Estate, although facilities are placed in accordance with the Hong Kong Planning Standards and

Guidelines (HKPSG) to facilitate better land use management, the living environment has been found less interactive. So there are differences in the standards of the provision of facilities as well as in the built form of the newer public housing estates. Thus the estate provides open space and facilities according to the standards set in the HKPSG which deals only quantitative measures, but not qualitative approach. The new Shek Pai Wan Estate provides open space and community facilities according to the standards set in the HKPSG. The approach is thus only quantitative. Any qualitative measure or assessment is absent here. The distribution of space and built form shows a formal approach. The open spaces are either designated sports ground or access way floored by hard surfaces.

10. SYNOPSIS

In Wah Fu Estate the built form is found to be linear with central corridor system and square form with single loaded corridor system. The “Twin-building” design (Figure 6) in Wah Fu Estate provided a better environment than the previous one as the units front towards un-built central space, and residents could interact with each other from different floor levels. This goes with the eminent architect Doshi’s (1995,p.129) philosophy. According to his experience of designing several living environments through housing projects in India, ‘Houses to front the un-built spaces for increased rapport and sense of belonging’. On the other hand, the layout of Shek Pai Wan Estate provides a prototype layout of cruciform arrangement, where each flat is faced to the corridor and corridor is linked to the lift lobby. This layout has been depicted from HKHA’s (Hong Kong Housing Authority) portfolio of ‘Harmony’ type design. The arrangement seems extremely

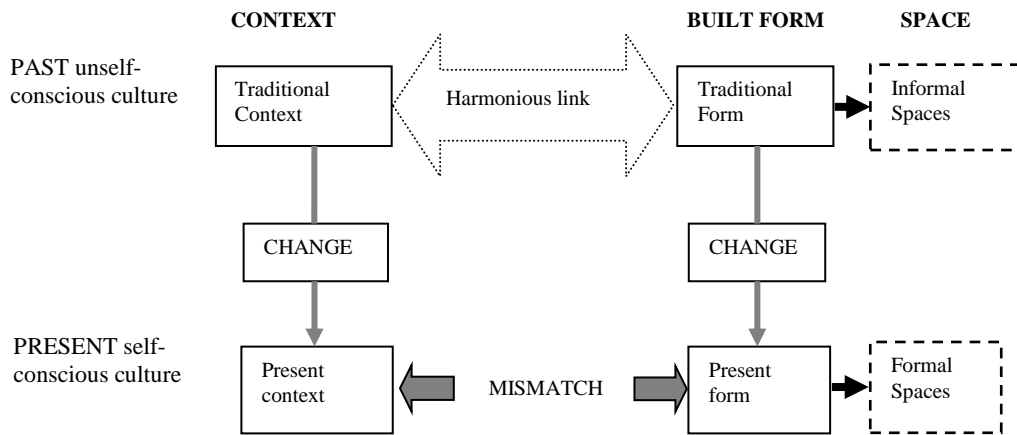


Figure 14: Modified diagram showing the effect of change on the fit between built form and context. Mitchell, et al. , 1992, p.34.

formal (i.e. corridor connectivity, unit orientation etc.), thus it tends to discourage community interface.

In the past, traditional built forms derived from unself-conscious culture used to provide informal spaces with flexibility. Over years the built form has changed along with context and so as the perception of space. As discussed Mitchell and Bevan (1992, p.33) –

“Buildings have changed. Context, as represented by physical environment, techniques and materials, social and cultural aspirations, and economy, has also changed. Built form no longer fits the context like a glove. There is mismatch. In Alexander’s terms, we have moved from an unself-conscious culture to a self-conscious one”.

Christopher Alexander (1970) has proposed a useful model for examining the relationship between built form and context, and the effect of change on that relationship (Mitchell and Bevan, 1992, p.33). His proposed model shows that in the past there was a harmonious link between a building and its environment. This study has taken this idea into account and found evidence of subsequent mismatch due to forced or formal space which is un-adapted as well. Figure 14 incorporates the findings from this study.

11. CONCLUSION

A change has been seen in the built form along with the gradual change of context.

From findings and discussion it appears clear that, forced or formal communal spaces influenced by self-conscious culture discourage social interaction where quantitative measures are only applied, and informal communal spaces encouraged by unselfconscious culture bring happy social life. To obtain such environment the standard provisions need to be revised and qualitative measures along with pre and post occupancy assessment should be included. Designers & Architects seek continuation of design components to unite the whole environment and to minimize the gap. When there is a change in the context, alteration of built form may also be needed towards both external and internal space requirements along with flexibility in estate design.

Thus sensitivity should underlie through the whole design process. Therefore, measures such as qualitative approach, sensitively designed spatial arrangements are recommended to minimize the gap. And then a harmonious living environment can be presented to the lives of the housing residents.

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