

# **Drying Area : A Missing Link In High-Rise Residential Buildings In Malaysia**

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**Key words:** Drying area, high-rise residential, affordable housing

## **SUMMARY**

The syndrome of the “Hanging Clothesline” or ”Hanging Laundry” , is synonymous to Asian residential high-rise buildings in urban areas in Singapore, Shanghai, Hong Kong, Bangkok and Kuala Lumpur to name a few, highlights a general dilemma that urban high-rise residents are are facing. This paper seeks to explore the physical and visual elements of the “Hanging Laundry “ syndrome. It is resognised that climatic conditions contribute greatly to the phenomenon of ”hanging flags syndrome”, since clothes are easier dried without much ”effort”. It is also observed that there is little thought process in planning and designing this aspect in high-rise residential buildings, and very often is neglected by parties concerned, i.e. rules and regulations, enforcment agencies, designers and developers. This paper suggests that further research be carried out to review the societal practice, current regulations and design technicalilities in providing possible solutions to overcome the situation.

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## **1. INTRODUCTION**

Drying area is a simple yet a necessity of daily living in providing adequate area or space for drying clothes. Malaysia is blessed with abundant eternal sunshine, so the need of drying clothes, whether in landed area or high-rise residential blocks is not be a critical issue. In practice, this is quite obvious, regardless of the building orientation as long there are spaces available, the laundry are blatantly exposed in full glory all around the perimeter or along the building façade. This “hanging laundry” syndromes are becoming an eyesore which constantly encapsulates the building envelopes of many residential high-rise blocks. To date, neither the designers, architects, developers, nor the authorities have given much attention to this phenomena as affecting the facades and the external building envelope.

This paper explores how existing “hanging laundry” can be designed in such a way to compliment the external built form and not creating an eyesore, while ensuring the necessities are met. This unassuming area so often neglected and overlooked by developers and designers will be the contentious subject to explore. This paper attempts to review the potentials by reviewing perspectives from literatures and some of the “new” buildings typologies to explore the possibilities to overcome such weaknesses. The scope of this study will focus on common types of high-rise residential layout, focussing on typologies of affordable housing, i.e. low and medium cost housing commonly found in the Klang Valley, which has the highest population concentration in the state of Selangor Malaysia.

## **2. BUILDING DESIGN AND CLIMATIC CONDITIONS**

Malaysia is located in the hot humid climatic zone with high temperature, high humidity, heavy yearly rainfall, and limited seasonal changes throughout the year. Under such conditions, buildings are generally designed to prevent heat gain by maximizing heat loss, either by removing excess heat through openings or using mechanical cooling devices. It is also crucial to have optimum building orientations to reduce considerable thermal heat gain by minimizing solar penetration. Although it is favourable to have rectangular building configuration that has shorter east-west wall exposure, it is impossible for all buildings having the optimum orientation with rectangular configuration. If building orientation is to be compromised, microclimatic design in the form of openings, recesses, corridors/verandahs or favorable sunshading devices have to be incorporated to reduce thermal heat gain.

Drying clothes or the ”hanging laundry” syndnrome on the other hand, requires maximum sunlight exposure. The east-west locations are beneficial taking full advantage of the sun path direction. Natural sunlight or day lighting are considered adequate in filtering into the buildings by gauging the building orientation so that sufficient sunlight uniformly is

distributed evenly into the interior. As Lam (1960) put it, “When buildings are designed to take into the account of the natural sunlight, one can witness the marked difference between great architecture and mere building. This can be measured largely by the skill on how sunlight is manipulated to its maximum advantage.”

The overall appearance of the interior where sunlight and shadows are rendered create a totally different ambient. This ambient quality is further enhanced by the details of the drying area layout, size and area location. Smith (2009) highlighted the depth where day-lighting illuminates into the interior space is generally two to two and a half times of the original light source from the “window” opening. Therefore the drying area, “window” openings and the dry yard orientation play a deciding factor to ensure adequate sunlight are able to illuminate into the interior space.

As mentioned earlier, the depth of day lighting penetrates into the interior is two to two and a half times from the “window” openings. Beyond the depth, there will be reduction in the lighting levels. This is important since the interior temperature will be the determining factor to ascertain the success of clothes drying. It is therefore, crucial to consider the spatial floor layout for the drying area, the depth area and the geometry layout of the “window” opening.

### **3. VENTILATION AND BUILDING BY LAWS**

Ventilation is another important area to consider as constant air movement is essential for clothes drying besides living comfort. The drying area constantly needs air movement (ventilation) and sunlight to fulfill its function. Without these two components, the drying area will not function well. Under the Malaysian UBBL 1984 [Uniform Building by Law 1984], there is no specific provision for drying area or dry yard. The nearest to it is the provision for natural ventilation openings, which should be 10 % of the size of a given room. Unfortunately in Malaysia air speed is generally very low, thus inadequate “window” openings will result in poor ventilation. The governing factors for ventilation or air circulation in drying area have to be considered in totality with the overall building layouts. Air circulation and controls have to be viewed with the other zonation of the building layout, the locations of openings, recesses, corridors/verandahs, courtyards and windows orientations.

### **4. COMMON BUILDING TYPOLOGIES AND METHODS OF DRYING CLOTHES**

There are a few commonly found building typologies and layouts for the affordable types of high-rise residential buildings. The most common types comprises of:

1. Single slab or single block with common long corridors;
2. Sandwich or double blocks having central or punctuated air wells with internal common corridors fronting individual units.
3. Single point or single tower high-rise.
4. Single or sandwich blocks with additional or extension blocks

The commonalities of all these four (4) building types in relations to drying area that there are no due consideration in allotting any form of drying area. In most cases, it is usually a last minute incorporation to be left under the unit owners' discretion.



Fig 2: Common corridor along the building facade having laundry being exposed and dried along the common corridor and window openings.

Fig 1: Single slab or single block having common corridor along building facade

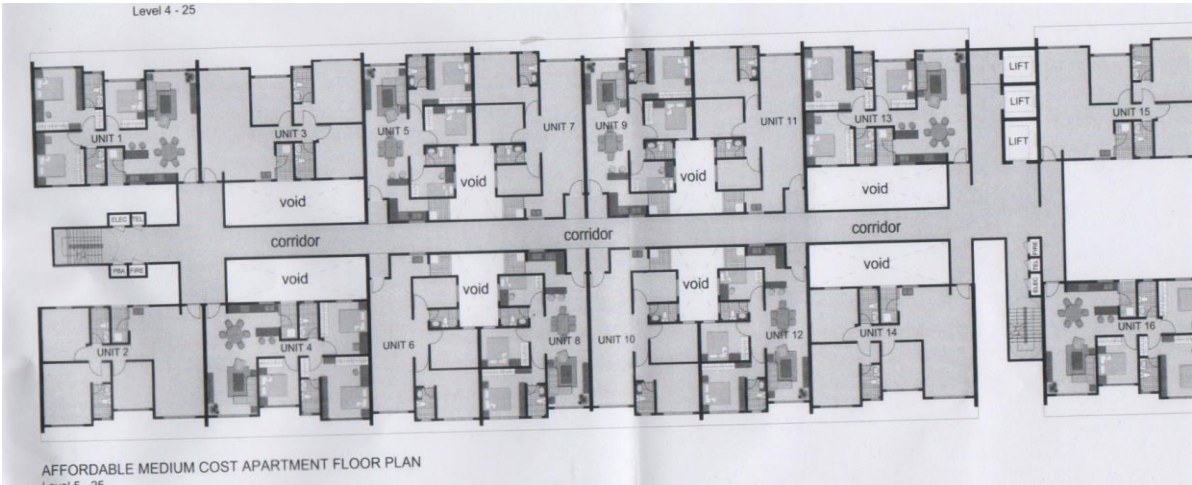


Fig 3: Sandwich or double blocks having common corridors with punctuated air wells flanking both sides of the block.

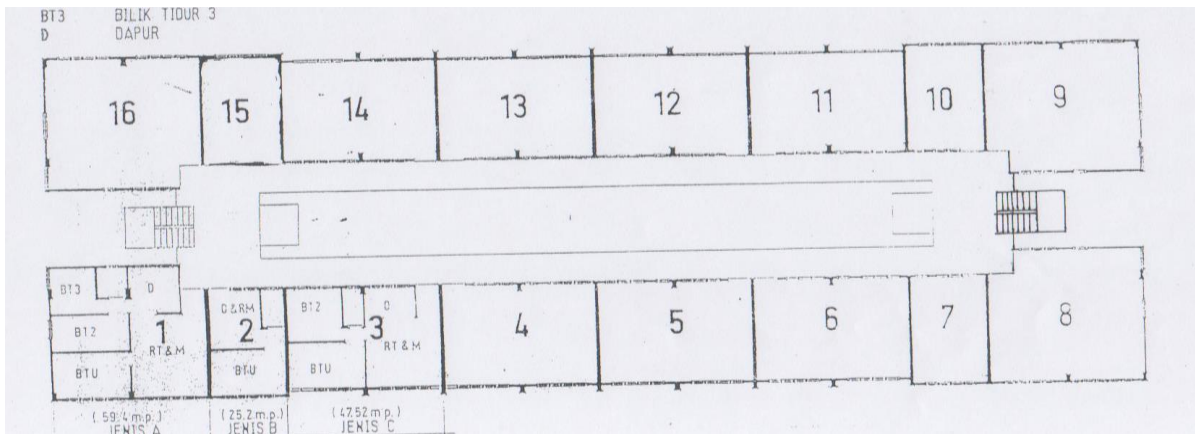


Fig 4: Sandwich or double blocks an early version of the affordable housing where the common corridors front individual units.

Fig 3 and Fig 4 suggest that over a period of time affordable housing layout have become more sophisticated and complex but simple and mundane issue on the hanging laundry is inevitably still not resolved.



Fig 5



Fig 6

Fig 5 and fig 6 suggest that

the common corridors and main entrance to the individual units become the drying area.



Fig 7



Fig 8

Fig 7 and Fig 8 show that the drying area is the central open air well along the common corridor edge.

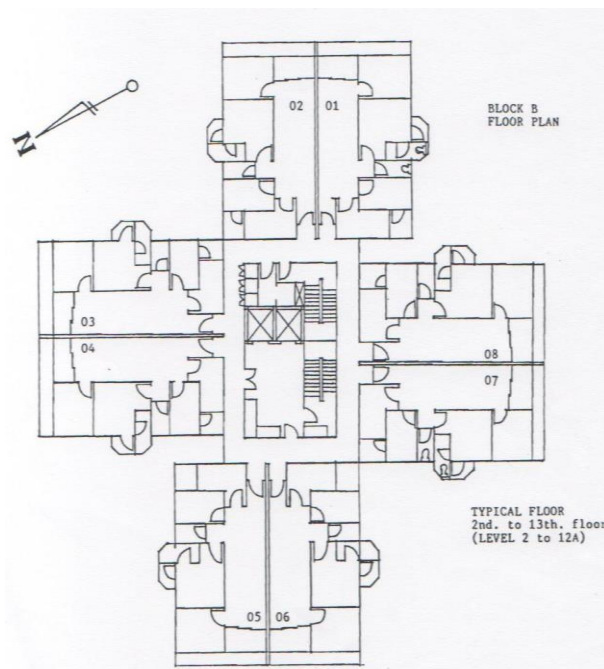


Fig 9 Single

point or tower or single tower



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Fig 10  
Fig 11

Fig 10 & Fig 11: In the single or tower point designs, designated hanging laundry locations are clearly defined in the form of “caged laundry”.

Fig 12 Variation of double sandwich block with intermediate air wells and additional blocks

extension in the upper central area and towards the far left end of the fire stair.

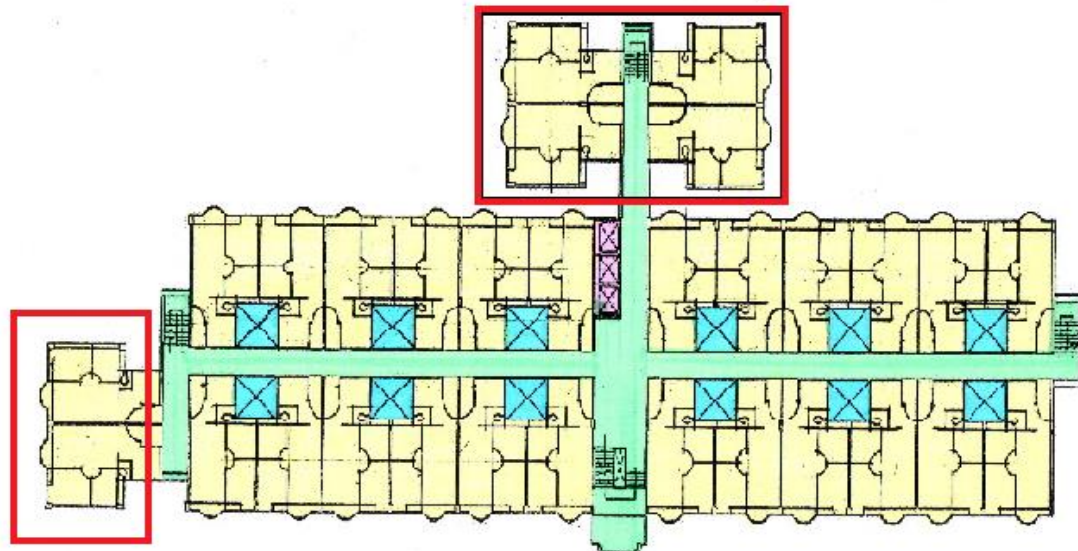


Fig 12 : The air wells are rather square instead of rectangular and with long corridors, sun penetration will be limited for the lower floors. In normal situation, only the upper two (2) storeys from roof level will have sunlight penetration, thereafter no sunlight will be able to permeate into the interior. The long corridors will create dark alleyway thus artificial lightings are needed to ensure the corridor is well lighted, and thus consume more energy.

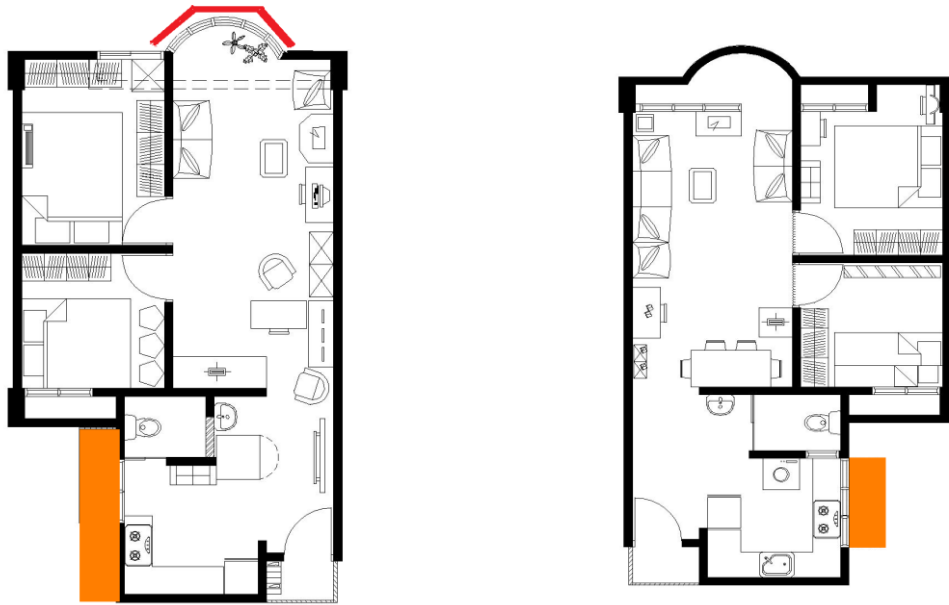


Fig 13 Typical unit layout and mirror image of the unit

Fig 13 : The hatch or darken colors of the two areas suggest possible laundry locations by the unit's occupant. The hatched color indicate the common designated laundry location at the open air well immediate from kitchen area of the apartment unit.

Another variation shown in Fig 14 indicates additional three (3) point blocks attached or linked to the main single slab or block by a common corridor. Additional intermediate air wells are located at the single block for intermediate units allowing laundries location at the air-well vicinity.

Hanging clothes along the common corridor without any control or along the open air wells are common in most affordable high-rise housing and to certain extend, those living in the condominiums (Fig. 15 & 16)





Fig 14 Single block with additional three (3) point blocks attached or linked by common corridors.



Fig 15 Clothes line along common corridor



Fig 16 Cage laundry along open air well

It is observed that high-rise residential buildings incorporating long internal corridors with alternate air wells or a single long air well has its own disadvantages. Without much natural sun lighting penetration into the interior air well, the whole environment indeed has a dark and gloomy outlook. Clothes can only be “air dried” but not adequately “sun dried” as shown in Fig 5, Fig 6, Fig 7 and Fig 8. Whereas point blocks towers where laundries are located, exposed and fronting the building facades have better options for drying clothes. Given thorough thought process in locating the dry yard will indeed compliment the overall building facade design. This is quite obvious as shown in Fig 10 & Fig 11. The defined laundry

location provide a balance and enhance the overall aesthetics building facade treatment.

## 5. CONCLUSION

Over the past decades since the building of the first low cost high-rise residential housing in the Klang Valley, the external façade and building layouts had gone through major cosmetic progression, for instance Fig 3 and Fig 4. Amidst such “advancement”, there has been little or no transformation taken place for hanging laundry in high-rise housing, especially the affordable and low cost types. The normal practice is in the mercy of loose interpretation of the by-laws by the developers as it is not spelled out as “essential space”, although it is a daily necessity. In addition, the prevailing hot humid climatic conditions conveniently provide excuses for all parties, including the authorities in reviewing the decades old by laws. Thus, it is timely that this aspect be reviewed and a better holistic solution be proposed.

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