

CHAPTER SEVEN: INCREASED DENSITIES

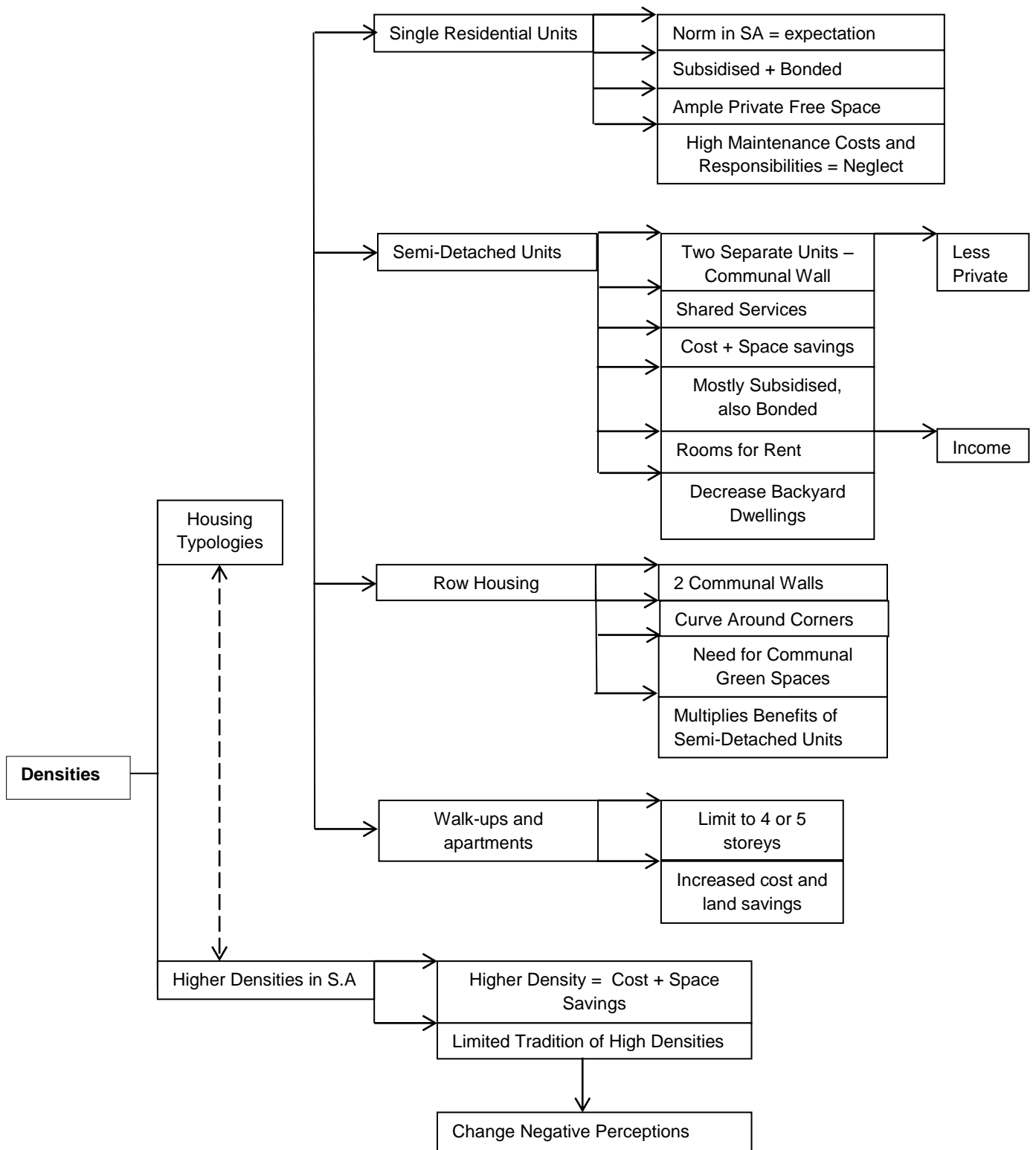


Figure 17: Summary of Chapter 7: Increased densities

Source: Own construction (2012)

The previous chapter discussed the informal backyard rental sector in South Africa as an opportunity to be harnessed in the hopes of improving development and living conditions. The facilitation of the establishment of legal and safe backyard rental options indicates an approach which facilitates increased residential densities.

7.1 Introduction to increased densities

Chapter 7 will discuss the importance of high-density development in low-cost residential areas as a measure to improve the quality of neighbourhoods delivered. According to Sivam & Karruppana (2011:2) the term density refers to the relationship between a certain physical area and the number of persons who inhabit or use that area, which can be expressed as a ratio of the number of dwelling units to area. Poulsen & Silverman (2005:2) states that traditional housing mechanisms in South Africa have promoted low-density development on the urban periphery, which reinforces the sprawling, fragmented, racially divided character of the South African city. Housing policies prior to the National Housing Code of 2009 have focussed on the provision of subsidised housing with a disregard for wide settlement planning. The integration of a range of housing typologies, price categories and socio-economic amenities were largely ignored (National Housing Code, 2009:9).

According to the National Housing Code (2009:9) the South African government wishes to address settlement inefficiencies through the development of integrated human settlements which contribute to a more compact urban form which provides a selection of housing and socio-economic opportunities. According to Mammon & Ewing (2005:4) problems related to the inefficient and fragmented state of the South African city, which is promoted by the provision of single detached housing, can be addressed by the introduction of a more compact urban form. An integrated, compact city will promote access and proximity to essential services, goods and institutions, especially for the pedestrian. The Urban Development Framework (UDF), (SA, 1997:12) states that South Africa has little tradition of high density residential development and that it is imperative that the current negative perceptions of higher density living are broken down.

The White Paper of 2001 on Spatial Planning and Land Use Management (SA, 2001:6) states that the general principles for land development reject low-density, segregated and fragmented development in favour of compact, integrated and mixed-use settlements.

Alternative layout configurations and the integration of different housing typologies are tools which can be utilised to create sustainable human settlements.

The UDF (SA, 1997:14) states that the benefits of higher density schemes include:

- An expanded range of nearby facilities.
- The promotion of integration.
- Providing increased access to quality recreational spaces.
- Limiting the use of valuable agricultural land and natural systems for urban development.

According to Poulsen & Silverman (2005:5) increased densities will reduce the need for large expanses of land for development and will also improve infrastructure efficiency by reducing the number of service connections required. Higher densities provide the opportunity to reduce total cost as well as the cost of land per unit (Sivam & Karruppanan, 2011:1). The Development Action Group (2009:138) furthermore states that cost reduction techniques apply to mass housing projects which implement high density development principles.

According to the UDF (SA, 1997), higher density living environments must be kept affordable to the people for whom they are intended. This can only be achieved through innovative design to ensure housing which is habitable in the longer term. It should be kept in mind that density in itself is merely a contributing development tool and will not independently resolve all issues.

When contemplating the increase of residential densities, design considerations should receive prominence. Sivam & Karruppanan (2011:4) states that well-designed developments which promote higher densities can help achieve a well-built environment.

According to Low (2010:9) apt design has the potential to mediate between policy and planning, community needs, spatial transformation and sustainable development. Design considerations should extend to the location of starter units, the integration of built and open spaces, providing access and ultimately the accommodation of higher density development with regard to unit design and typology.

UN-Habitat (2011:9) states that innovative planning practices should be implemented to foster more appropriate housing typologies, densities and function mixes. According to Mammon & Ewing (2005:8) a mix of land uses, including a variation in housing typology, promotes access to educational, health, recreational, civic and commercial uses.

The Development Action Group (2009:132) states that a mix of different housing typologies in the same development can enable the integration of various income groups by providing a broad spectrum of housing options in both subsidised and bonded formats. Mixed uses may facilitate social facilities and spaces for the establishment of small or micro enterprises which will support residents' livelihood activities, in turn promoting local economic development. According to Mammon & Ewing (2005:8) residential unit design should allow for a mix of living and working possibilities including home industries. The accommodation of said economic support should be encouraged through general neighbourhood layout and the choice of typology.

Given the importance of housing typology selection in higher density development, four typologies will be discussed:

7.2 Single residential units

7.3 Semi-detached units

7.4 Row housing

7.5 Multi-storey walk-ups (apartments)

7.2 Single residential units

Single dwellings on separate stands are the accepted norm when it comes to low-cost housing delivery under the Reconstruction and Development Programme (RDP) in South Africa. Along with the housing already provided as example and the continued promises of politicians, people have come to expect and demand this form of housing.

Lynch & Hack (1984:272) states that the detached home offers many benefits which include the provision of ample garden space, direct street access, privacy and a notion of independence. These advantages promote the high demand for single residential units. The possible positioning of single residential units on individual stands is illustrated by Figure 18.

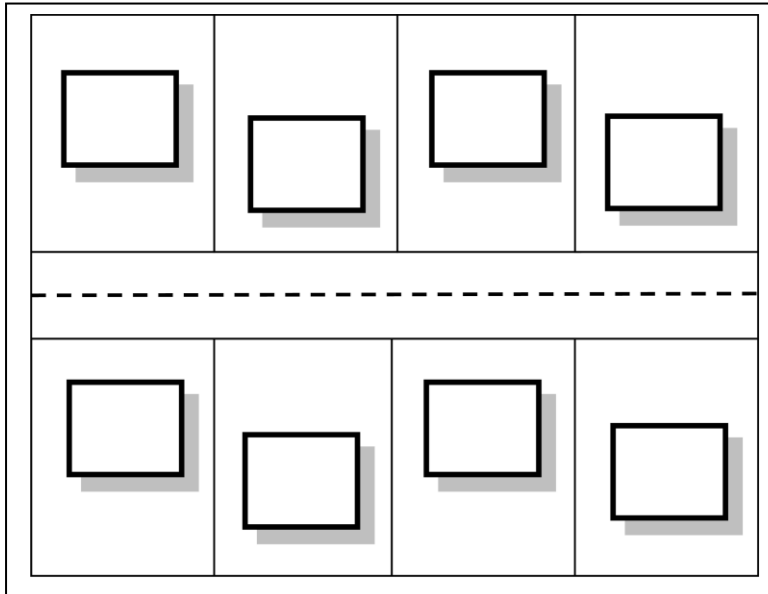


Figure 18: Illustration of single residential units

Source: Own construction (2012)

One of the main criticisms of the single detached unit is its contribution to urban sprawl, which causes major economic disadvantages in terms of the ever increasing cost of land (even on the periphery) and high servicing costs (Lynch & Hack, 1984: 272). Whatprice (2005) mentions that all maintenance and running costs become the owner's responsibility. This leads to many a home being neglected and left dilapidated in low-income areas, due to a lack of private funds. Housing beneficiaries are also often forced to sell their homes as a result of unaffordable operating costs. Where beneficiaries are able to maintain their units, complaints about poor quality finishes and the lack of space provided are endemic (Poulsen & Silverman, 2005:2).

From a delivery point of view the single unit approach facilitates easy development given the mass produced nature of provision (Poulsen & Silverman, 2005:3). Where detached units are provided Lynch & Hack (1984:272) suggests a reduction in stand width or the introduction of more panhandle stands, which will reduce street frontage and service costs

7.3 Semi-detached homes

The Development Action Group (2009:135) states that the two units comprising a semi-detached house or duplex, normally mirror each other, consisting of two homes built next to each other sharing a communal wall on one side only, as illustrated by Figure 19. This allows these units to share services such as plumbing and electricity lines which makes financial sense. Open space consists of front and rear areas, as well as space to one side of each unit. According to Lynch & Hack (1984:276) the elimination of one side yard when developing semi-detached units, reduces land and service frontage, which further reduces cost. The fact that semi-detached units are cheaper to supply, implies that better facilities, finishes and increased sizes may be provided.

Figure 19 illustrates the traditional placement in a layout where semi-detached units are provided.

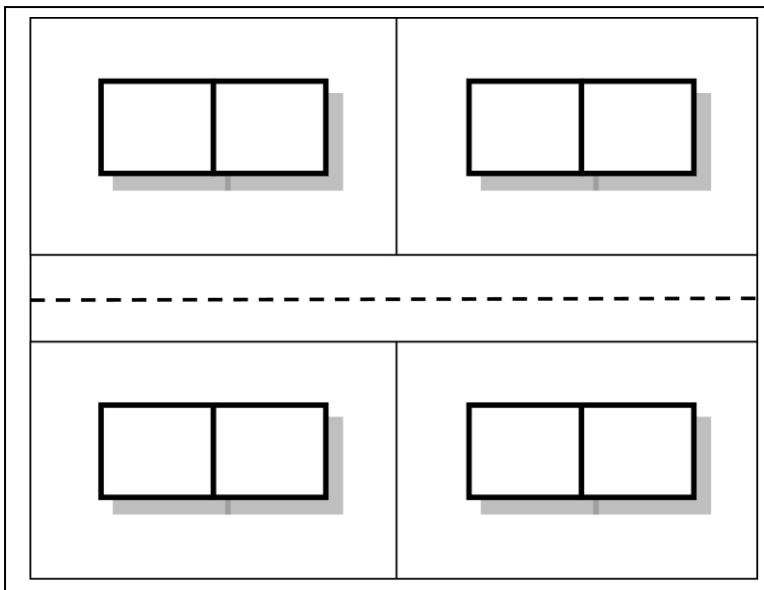


Figure 19: Illustration of semi-detached units

Source: Own construction (2012)

According to Whatprice (2005) semi-detached dwellings still give inhabitants a degree of privacy by providing separate entrances and semi-private yards. The responsibilities of maintenance and repairs are also still the duty of each separate owner, which may serve as a negative in low-income areas, as is experienced with single residential units.

Semi-detached units are traditionally placed with all units facing the street, providing both with direct street access (see Figure 18). As is well known, street frontage is expensive and placing semi-detached units in a different configuration could further save costs and promote community interaction.

Once one considers building two story semi-detached units with separate homes on each floor, further savings and benefits are encountered. The space saved by building higher makes the need to purchase more land per dwelling obsolete, as these units require less land compared to traditional single unit development (Poulsen & Silverman, 2005:3). Each stand housing two units can now accommodate four residential units, by providing one separate dwelling on each floor. This leads to greater savings and thus more funding to improve living conditions.

A variation on this concept can be provided by the provision of rental rooms on top of semi-detached or single residential units. According to Lynch & Hack (1984:275) it is common practice internationally to provide multi-storeyed semi-detached units which provide the opportunity for occupation by the owner on one floor and occupation by renters on the other.

Rental rooms will provide the owner with an additional source of income. This will further promote a sense of ownership, reinforcing the concept that the house is in fact an asset to be maintained and looked after. The availability of safe and neat rental rooms will also help decrease the occurrence of unlawful rental extensions and backyard dwellers.

Money earned by letting rooms can be directed towards the maintenance and upgrading of the home in the form of lawful extensions and aesthetic improvements. Rental accommodation, with a focus on the backyard rental sector, is extensively discussed in Chapter 6 (p 73) of this study.

Semi-detached homes are already seen in various housing projects in South Africa, such as Cosmo City and Olievenhoutbosch in Gauteng (See Chapter 11, p 150), but are not the norm.

7.4 Row houses

According to the Development Action Group (2009:135) row housing constitutes a continuous row of housing in which the internal side walls of each individual unit is shared with neighbouring units. Residences may be uniform or may portray individual designs.

In row housing concepts, the fact that almost all units share two boundary walls with a neighbouring unit, as seen in Figure 20 implies that financial savings are possible. The benefits derived from semi-detached development are multiplied in the provision of row housing.

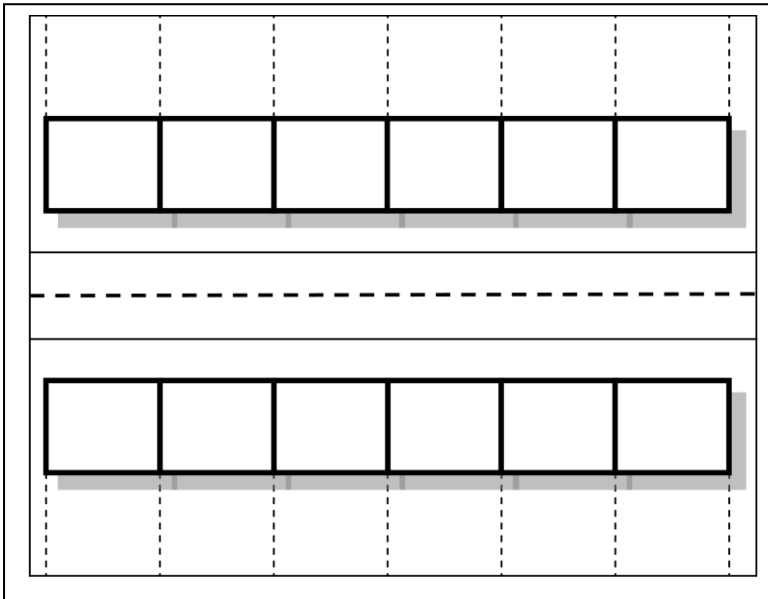


Figure 20: Illustration of row housing

Source: Own construction (2011)

According to Lynch & Hack (1984:277) row housing provides the most living space at the lowest cost and is also the cheapest typology to maintain compared to detached and semi-detached units. Whatprice (2005) states the inexpensive nature of building row homes as a primary advantage. Units boasting a larger size, better facilities, services and more pleasing finishes are made possible with the adoption of row housing options.

According to Whatprice (2005) a lack of privacy and a separate yard may deter certain occupants and large communal open spaces such as parks will have to be provided close to row homes as compensation for diminished outdoor space. Furthermore the Development Action Group (2009:136) states that backyard access is only made possible by passing through the main unit. This may prove to be an unacceptable compromise in low-income neighbourhoods where backyard structures are traditionally provided to renters.

As with semi-detached units, configurations and layout possibilities are endless. Row houses can curve around corners and courtyards or can stretch an entire block (Lynch & Hack, 2005:277). However a minimum number of four units will have to be provided for the sake of cost efficiency. A grouping of more than ten units should also be avoided (The Development Action Group, 2009:135). Row housing can furthermore be used as successful transitions between different forms of housing typologies, especially when varying heights are introduced.

7.5 Walk-ups and apartments

According to Kader & Ettouney (1996:1) apartment block development has continuously proved to be the most suitable form of housing for low-income development. However the introduction of drastic density increases by providing high apartment buildings will intrinsically imply the need for the instillation of some costly items. These possibly include passenger elevators and the use of fire-proof construction materials and practices (Lynch & Hack, 1984:280). The increase in building costs will imply a need to significantly increase densities in order to reduce per-unit land costs. Buildings of up to 20 storeys will have to be provided in order to compensate for additional expenses.

It is thus much more feasible in the South African setting to introduce walk-up units of up to four storeys which will not require elevators or imply exponentially increased construction costs.

According to the Development Action Group (2009:138) a four storey limit was established by the following:

- The strain of using stairs when building higher.
- Residents become disengaged when living higher than the fourth storey.
- Conventional building systems and meeting structural and safety requirements.
- More favourable unit costs.

7.6 Conclusion to the need for increased density development

In conclusion it is hoped that higher density development will be implemented as the norm in future low-cost residential provision in SA. The more common introduction of the typologies discussed may prove to be an effective tool in the quest to increase residential densities provided that cultural differences and preferences are acknowledged. The introduction of different typologies hinges heavily on the education of the community regarding the benefits related to alternatives. Once the community accepts these structures, truly integrated and varied developments will be possible. Where possible higher density and cost saving layouts integrating different typologies in conjunction with alternative and more eco-friendly construction materials could prove vital to future success. In this regard the value of alternative construction materials is discussed in Chapter 8.