



SESSION 8

Design, Construction and Sustainable Spatial Processes

Nina Maritz

Principal, Nina Maritz Architects

Nina Maritz is the principal and founder of Nina Maritz Architects in Windhoek, Namibia. A graduate of the University of Cape Town School of Architecture in 1991, she established her firm seven years later with a focus on environmental sustainability and community projects. A member of the Namibia Institute of Architects, Ms Maritz has authored numerous papers on energy efficiency and sustainability within developing countries and is a frequent lecturer on sustainable architecture. Using an approach that is deferential to both the setting and its people, Nina's work draws not only from her familiarity with environmental and social factors, but also from an ability to delve into the detailed particulars of each place by simultaneously being both vernacular scholar and environmental designer. Utilising an honest expression of materials and structure, her firm's growing portfolio elicits a sensitive approach to place and climate, rooted in a deep appreciation of Namibia's unique history, culture and ecology.¹

¹ <http://ninamaritzarchitects.com>.

The session was moderated by **Phillip Lühl**, Lecturer, Department of Architecture and Spatial Planning, NUST.

Editorial note: The speaker structured her session into several sections and proposed having a discussion after each section. All images were sourced from the speaker unless otherwise referenced, and all images were taken by the speaker unless otherwise noted.

Introduction

When people hear the word *sustainable* they immediately think of green housing, of alternative materials, clay and then recycled materials, but we are not going to talk only about that today. The topic that we are addressing here touches on all the other aspects of design, so there might be some repetition of what has been said before during this Forum. The purpose of this discussion is to look at creative suggestions. We are not here to judge ideas to be totally useless; instead, we could assess whether something is less appropriate or more appropriate.

Under each topic I am going to talk about what prevails in Namibia, what some of the approaches in other parts of the world are, and then introduce some ideas to start the conversation. The topics will be Housing typologies, Construction and delivery, Sustainable housing, and Urban living – as housing is about living in an urban situation.

Let us start with some information: we are experiencing significant growth in urban areas of Namibia. In terms of housing demand: 52% of the population have monthly incomes of less than N\$1 500 with an estimated backlog of 45 000 housing units; 35% have incomes between N\$1 500 and 4 600, with a backlog of 30,000 units; 7,2% have incomes between N\$4 600 and 10 500, with a backlog of 4 000 units; and 5.7% have incomes of more than N\$10 500 per month, with an estimated backlog of 700 units.

The existing housing stock includes: 33% detached housing, 5% semi-detached housing, 4% apartments, 27% informal housing, and 31% traditional housing, which gives you an idea of the spread of current typologies.

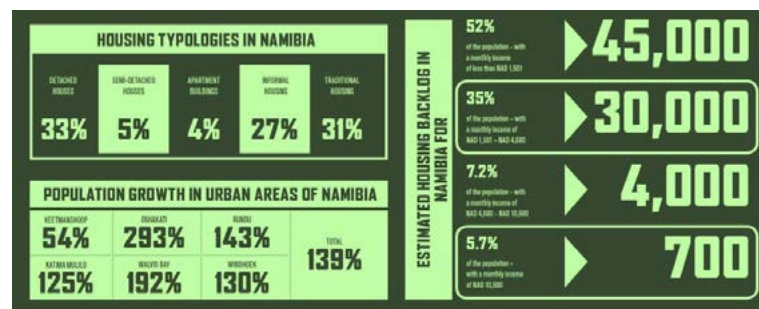


Image 8-1: Housing typologies in Namibia²

² Source: Graft. (2016). Architecture Activism. Birkhauser.

Part 1 – Housing Typologies

I want to talk about typologies first, about the form of the housing. This study shown on the slide was done by Graft Architects for their housing proposal (see Image 8-1). It compares the building cost and selling price of detached houses and villas; semi-detached and row houses; small and large apartments; and mid- and high-rise apartments, with green indicating the unserved market (Image 8-2).

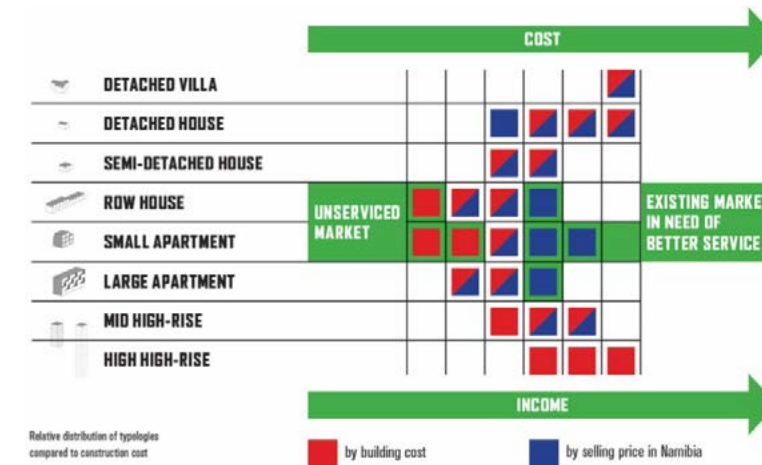


Image 8-2: Building cost vs Selling price for various typologies in Namibia³

³ See footnote 2

In terms of sustainability, the building form and orientation can have a big impact on the performance of the building in terms of its green ratings, the height to width ratio, keeping the heat in during winter and out during summer, the zoning implications, etc. I want to stress that we are talking about flexibility here: we are not saying one particular typology is the best performer and therefore we should only go for this one. What we are saying is that we look at the impact that the typology can have on the green aspects of a building.

If we look at the aspect of heat loss, the detached house performs much worse than the apartment building. You might think that heat loss is more relevant for European conditions, but in Namibia it can have a big impact when people put their electrical heaters on in winter.

This means that, when we speak about how much money we need to provide for housing, there is one important factor that does not require that much money – planning and design. It is what you do on paper before you start construction that is critical in terms of addressing the costs and impact on the building performance.



Image 8-3: Traditional house, Bloupoort, north-western Namibia

In Namibia, we have our traditional or vernacular houses which provide a lot of housing and need to be taken into account. We should stop stigmatising vernacular as bad because, in the rural areas, it can actually be very good to have a vernacular house.



Image 8-4: Idealised suburban dream living as depicted in Edward Scissorhands⁴

We also have detached houses or villas. The movie Edward Scissorhands depicts an ideal, American middle-class suburban house. The husband goes away in his car in the daytime and comes back in the evening, and the wife stays at home and curls her hair. That is the kind of dream that we seem to be pushing in terms of our housing typologies. We must decide if that is the right thing.



Image 8-5: Upmarket granny flats in larger properties in Windhoek, Namibia⁵

⁵ Source: Google Earth.

We have a lot of 'granny flats' in Windhoek, which is a back room with a toilet. And we charge students a hell of a fortune to live there. If we could double up on our granny flats, maybe rents could come down and a lot more students would have a lot more places to stay. But we are restricted by our current regulations on second dwellings in this city.

Then there is our typical NHE house, which was discussed at length in the workshop before lunchtime, and our sectional title townhouses in their gated communities, which we have all over Kleine Kuppe especially.



Image 8-6. Typical NHE houses.

⁴ Burton, Tim [Director]; Di Novi, Denise & Burton, Tim [Producers]. 1990. Edward Scissorhands. USA. 105 minutes.



Image 8-7. Kleine Kuppe townhouses, Windhoek, Namibia



Image 8-8. Freedom Plaza apartment building in Windhoek, Namibia.⁶



Image 8-9. An 'informal' structure in Namibia.

We also have new urban apartments that are going up. I don't know if anybody has looked at the rental and selling prices, but they seem to be expensive (Image 8-8).

And then let us not forget shacks! (Image 8-9) We keep on saying we do not want shacks, that we want to get away from informal settlements. We need to face it: people are going to live in shacks and informal settlements for the foreseeable future, so we need to look at what we can do to improve the conditions of living in informal settlements. We cannot ignore them because we think they are not good enough.

All of these typologies have one major problem for me, and that is not to do with the typology itself. The problem is that we cluster them all together with very few amenities. At most there might be a school, a clinic and/or a corner shop. In the informal settlements people really know much better because, there, they open businesses, start their own crèches, you can get your hair cut, and so on. And why do we have so few options? Seven options might look like

a lot, but they are not really all options if you are very poor. Number two to six in Table 1 below are really out of reach for the poor.

Now let me show you some other typologies. Something that is quite old-fashioned and has come a long way, but it is still used in many countries such as New Zealand, Australia and India, is the idea of the *boarding house*. This is a row of rooms with a shared bathroom and a landlady who runs the kitchen so that residents eat meals together and go off on their own ways. This is for single people and students or professionals that are just starting out. It could be working class, but it could also be any other kind of class.

Then there are many ideas about compact living. Fabio Todeschini,⁷ at the Urban Forum 2015 masterclass two years ago, said, "We all [would] like to have a farm. We're all farmers at heart. We also want the inside of our houses to be as big as farms." But there are all sorts of things that one can do, like putting your bed on top of your bathroom, which saves a lot of space. Many of the photographs I show here are very hipster, very high tech, very expensive; but there are a lot of people in informal settlements that are actually doing this kind of thing – just in a simpler way.

Here is an interesting phenomenon I saw in China. It is called a *tulou*. It is an enormous, often circular, rammed earth building with rooms on the perimeter. Often, one big clan of up to 800 people who built the structure communally that lives there. Each family has their own vertical unit. You have your storerooms, your bedrooms, your living room [and] your kitchen (sometimes combined with your living room). Sometimes they have internal, private staircases [and] sometimes they have communal staircases. The buildings in the centre are communal and include the temple.



Image 8-10. Communal housing in traditional rammed earth Tulou, Fujian, China

⁷ See: <http://urbanforum.nust.na/?q=node/46>

⁶ Photograph by the editors.

Then there is a thing called co-housing. It started in Scandinavia in the 1960s. People have their own dwelling unit, which has almost everything that a standard house has. Perhaps their kitchen/dining/living area is smaller because they also have a communal kitchen and living area. Residents take turns to do the cooking in teams. They maybe also have communal vegetable gardens. They coordinate day care. They have old people and young people mixed with families so that they have old people available during the day to look after the kids. It is usually quite compact and very cost-effective.

Co-housing comes in different styles, so it has nothing to do with the typology or the aesthetic appearance but more with how the complex is organised.



Image 8-11. Co-housing complex with central communal area between private dwelling units ⁸

⁸ The image belongs to the Livewell Co-Housing, in Canada. However, the organisation has now disbanded.



Image 8-12. LC710 Housing project in Mexico City, by Héctor Barroso. ⁹

⁹ Images courtesy of photographer Rafael Gamo. <https://rafaelgamo.com/>

Then there is courtyard housing. This (Image 8-12) is an example from the Mexico – which is interesting, because it is quite narrow. The idea is that the house is organised around courtyards.

Then there are *four-storey walk-ups*, [so-called] because you do not need a lift. This is the kind of low-income housing that was built in the Cape Flats for a long time. But the example I am showing here is working class housing that was built in the late 18th Century in Gothenburg, Sweden, and it consisted of a room and a tiny kitchen per family. The sanitary facilities were in an outhouse downstairs and there was a school in the complex.

I am not suggesting that this is how we should live now, but it is worthwhile thinking that this typology is still being used 200 years later. Nowadays, people are combining two units: buying a second one and then converting the first one into a bedroom. The other one [turns] into the living area, the one little kitchenette into a bathroom, and so on. These were originally set to be demolished in the 1960s in the ‘bright’ age of modernism, but those which survived provide a lot of desirable housing today.



Image 8-13. 18th-Century working class housing, now gentrified; Gothenburg, Sweden.

Here is another example of narrow row housing, also with a courtyard. Narrow row housing is something that is quite prevalent in many parts of the world because you really save on services. Instead of having a property that is 30 m wide with 30 m of electricity, water [and] sewerage pipes, you have row houses that are 5 m wide so you can service six erven instead of one (Image 8-14).

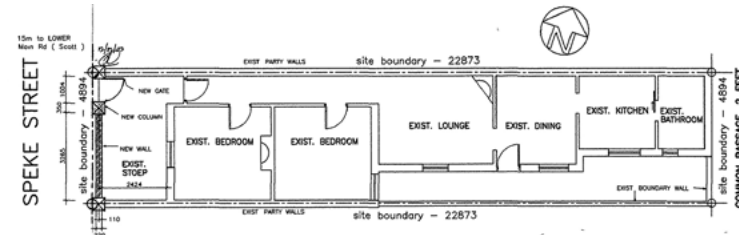


Image 8-14. Narrow Row House, Observatory, Cape Town, South Africa ¹⁰

The movement called the *Missing Middle Housing* aims to bridge the gap between single detached homes and mid-rise apartments.¹¹ They argue that people want homes that make them think of a neighbourhood. People do not [necessarily] want to live in high-rises. The urban apartments work for some, but others want something else. So, they suggest typologies like the *bungalow court* with a number of houses on one property;¹² a *multiplex* with a single building which houses four to six units; [or] a cottage co-op that is similar to the bungalow court or maybe a little larger. They suggest a variety of options – the basic idea being that these are smaller typologies that share the land costs, and they use simple construction technologies that any ‘bakkie-builder’¹³ can use.

Very importantly, they propose less space for parking. This allows increased density and, therefore, encourages businesses due to the increased buying power. Where there is a mix of businesses, people can walk and do not need that many cars and parking. Their proposed average density is 100 units per ha. They also talk about live/work units – and here is Winfried Holze’s shop-house concept¹⁴ as an example [of] a very viable solution proposed for Windhoek (Image 8-15).



Image 8-15. Model of shop-house proposal for Windhoek, Namibia¹⁵

I want to throw one or two challenges at you: what is a *minimum dwelling*? In order to decide what a *minimum dwelling* is, I suppose we should discuss who lives in one. We tend to assume that there is a mom and dad [and] two-and-a-quarter children, according to the statistics.¹⁶ But if you are Rosa Namises,¹⁷ you have three women and 18 children – because she has turned her three-bedroom house into an orphanage.

Or you might have a co-housing setup where you have people of different ages. So, when we think of [a] minimum dwelling, I think we must realise that it has to be flexible: it should not be cast in stone. [But] I am not saying that you build the minimum dwelling as a core house and then you expand on that particular minimum dwelling. Maybe you start the way I did: in a little garden-flat room with a little kitchenette and a bathroom. Then I moved to another place as I expanded my means.

What does a minimum dwelling need? It needs sleeping space, it needs eating space, food preparation space, it needs space for washing, and it needs space for family or socialising. Does it really need a separate living room?

What one has to think about, firstly, is levels of privacy between public and private which do not have to be static but can be flexible. Secondly, it is about a spatial separation between activities, meaning you sleep in one room and you talk in another. Or you can have time separation like the Japanese: they roll up their beds in the day, put them in a cupboard, and then the sleeping space becomes a living space. At night they roll out the beds and it becomes a sleeping space again. These are more multi-functional spaces, where you can actually have everything in a single space which you use differently, according to what your needs are at a specific time.

15 Image courtesy of Winfried Holze.

16 According to the latest census, the average household size is composed of 4.4 members. See: NSA. (2011). 2011 Population and Housing Census Main Report. Windhoek: Namibian Statistics Agency, p.63

17 This refers to the Dolam Children’s Home in Katutura, Windhoek. See: New Era, 7 February 2008. Old Mutual helps out orphanage. Available at <https://www.newera.com.na/2008/02/07/old-mutual-helps-out-orphanage/>, last accessed 13 August 2019.

10 Photograph by the editors.

11 See <https://missingmiddlehousing.com/about>, last accessed 12 August 2019.

12 In the Namibian context this would be referred to as sectional title and/or townhouse.

13 Colloquial term denoting small-scale building contractors, who usually operate from a light motor truck referred to locally as a bakkie, a term borrowed from Afrikaans

14 This project formed part of the exhibition on experimental housing projects during the 2017 Urban Forum.

Discussion on Part 1 – Housing Typologies

Jeremiah Ntinda from the NHE stated that he regarded it as characteristic of the local context to want to extend one's house.

Ms Maritz agreed, but said that there were different ways to do so, as [a house] could be extended horizontally but also vertically.

Mr Ntinda related his experience in trying to grow his property upward: it was not possible in the house he lived in because of the way it had been built. He moved to a different place with more land. He said he personally preferred to have a large plot and grow within it, rather than live in a small house and then move to a larger house.

Ms Maritz questioned this reasoning by asking what would happen if one did not have the money to buy a large plot in the first place.

Phillip Lühl of NUST agreed that the way that houses were built locally made expansion difficult.

Winfried Holze, a Namibian urban designer, noted a tendency to place the house in the middle of a plot of land, making expansion more difficult than if it were placed towards one side of the land.

Heinrich Schroeder, owner of Kavango Brick Block, opined that, in urban areas, expansion should go upwards, while in rural areas it should go sideways.

Gabriel Marín Castro, the Minister of Urban and Rural Development's Special Advisor on Mass Housing, stated that families in Namibia were changing as values changed. As an example, he referred to the first houses he had built for teachers in northern Namibia in 1991. He had designed the houses with a living room, but people in the end rather used outside spaces for socialising. However, when television started to become increasingly widespread, the room was used more and more. He also noted that, in South America or Asia, a small house of 42 m² was considered acceptable. Emergency housing for catastrophes such as earthquakes or hurricanes was 18 m², i.e. two rooms measuring 3 m x 3 m. He noted a tendency in Namibia to regard the situation of the Namibian population as special, while with an increasingly globalised world, an urban mentality and a notion of being a member of the global community needed to be developed.

Ms Maritz asked how one could develop such an urban mentality.

Mr Castro replied that it could not be achieved simply by talking to people about it: one needed to experience urbanity in order to understand it.

Ms Maritz also pointed out that the concept of Namibia's 'exceptionality' was often used to reinforce prejudices.

Mr Lühl added that differences among people stemmed from their demographic group, age group, socio-economic group, etc. He noted that projecting one's own personal preference or experience onto others might not resolve their problems. He agreed in broadening the scope of options.

Catharina Nord, a Swedish researcher, related her experience from working in various contexts. She said she had stopped asking whether respondents' living conditions were "good or not" as people conformed to their situations and it became difficult to imagine how things might be different. Without exposure to other options, people may not have the opportunity to consider other ways of doing things.

Martin Namupala, an architecture student, felt that research was required to understand what worked in different contexts, and even in different types of settlements. He argued that housing should respond to its context.

Uazuva Kaumbi from the NHE stressed that Namibians should start imagining what they wanted instead of sticking to what was being done elsewhere. He said there had to come a point where one could agree on a practical and realistic solution after different options had been tested.

Ms Maritz asked Mr Kaumbi what would happen if the NHE offered more than one option. She also felt that the conversation was not about designing houses for individual households, but housing provision for lower-income groups on a larger scale.

An unidentified participant stated that there were examples of denser housing typologies in Namibia. For instance, he said he had grown up in a house with a 5-m front facade, and [Windhoek's] Okuryangava Extension 2 plots measured 10 m x 20 m, i.e. 200 m². He mentioned row houses in Khomasdal as another example.

Part 2 – Construction and Delivery

Construction and delivery is more about how houses are getting built than actual construction technology. The first delivery method that everyone thinks about is owner-building. That is the dream: you have a nuclear family, and you build your urban villa to house it. Then we have private developers who build multiple units or townhouses and sell them off. That is probably the most prevalent modality in Namibia. Next we have the MHDP/NHE-type Government housing interventions, and then the SDFN and *Build Together* initiatives.

18 OHCHR/Office of the United Nations High Commissioner for Human Rights. 2009. The right to adequate housing. Fact Sheet No. 21. Geneva: OHCHR. Available at http://www.ohchr.org/Documents/Publications/FS21_rev_1_Housing_en.pdf, last accessed 14 August 2019.

19 (ibid.).

Something which people often leave out of the equation is the amount of housing Government builds for its staff. We do not really know how many people are housed in hostels and staff housing for teachers and nurses.

An interesting quote I came across in a UN-Habitat publication¹⁸ about adequate housing says that there is no way that governments can provide houses for everyone. They argue that public resources are better spent in improving the existing stock of affordable housing, no matter how substandard. This means including shacks and implementing a range of innovative and flexible approaches to creating new stock.¹⁹

The first key word is a range of approaches – not just one way. They must be innovative, they must experiment, and they must be flexible. These are three very important criteria if we think about how we approach the housing problem. In terms of upgrading, UN-Habitat says you can do on-site upgrading (taking the existing and improving on that); you can resettle people on suitable land; you can make government lead a new public housing programme (which is what we are doing with the MHDP); you can do sites and services; and you can do incremental land development (which we do not yet do on a large scale in Namibia).

There are also city-wide housing strategies. These really interest me because, if you think a little more laterally, you can come up with options that can actually provide a lot of housing stock – not just at the low-income level, but right throughout the various income groups. We can forget about the wealthy because they sort themselves out. But if we can provide a lot of housing stock for the no-income, low-income and lower-middle-income groups, it will make housing less expensive.

Now the question is this: *What other methods to provide housing are there?* Co-ops are ways in which people get together to build something. Another modality is a non-profit organisation working with the community to provide housing. An example is the Clay House Project, which has built quite a lot of houses in Namibia, mainly in Otjiwarongo.



Image 8-16. Aerial image of Windhoek Central ²⁰

20 Source: Google Earth.

Then there is something I want to call infill housing for now. If you look at this aerial image of Windhoek central (Image 8-16), you can see that there is a lot of open space, including a huge amount of land that goes into buffer zones (so that we can drive at 120 km/hour around a curve!). This did not exist in old cities because the transport was slow and did not require such large safety barriers. If we start questioning how we plan, we could make a lot more land available.

We can also consider incremental building, like the work of Alejandro Aravena of Elemental in Chile. He designs half-finished housing units, and residents fill them in as they get money (Image 8-17).



Image 8-17. Incremental housing, Chile ²¹

21 Image courtesy of Estudio Palma, Chile. <http://estudiopalma.cl/>

Incremental architecture is not a new thing. There was a housing competition in the 1960s called PREVI,²² in Lima, Peru, and they did a lot of housing very successfully.

I must mention incentives – for example, the free residential bulk that you have in certain areas of Windhoek. If you build an office building, you can get a certain amount of free bulk as long as it is residential. So, you can put four apartments on top [of an office building,] as long as you provide enough parking. This is a good incentive, and you can earn some money from it.

Then there are legislative instruments. For example, in California, it is legislated that 25% of any new housing stock must be social housing. What we have here in Windhoek is that you pay a betterment fee for rezoning, which goes to the municipality. What if, instead of a betterment fee, there was legislation that you had to provide social housing equivalent to the value of the betterment fee?

Then we have upgrading, such as this project in Cape Town by an organisation called Urban ThinkTank. They took this little shack and they improved it. They built a new frame, covered it with the same kind of sheeting and added another floor on top.

This other example shows as an interesting project in Mozambique run by a European university (Image 8-18). Maputo is all single-storey. So they started with the first little shack, which they insulated; and then the second one, where they took an existing concrete block house and added another floor; and then they did the third one, which is three storeys.

22 The Proyecto experimental de Vivienda (Experimental Housing Project) was launched to challenge architects to design a strategy for mass housing as an alternative to the massive informal settlements that were dramatically taking place in Lima during that period; see <https://www.transfer-arch.com/reference/previ-lima-1969/>, last accessed 12 August 2019.



Image 8-18. Casas Melhoradas project in Maputo, Mozambique.²³

Again, I ask: why do we have so few typologies in Namibia? Is it, like people say, that Namibians want this or they want that? Is it market demand and expectations? Is it that the town planning regulations and the building regulations do not allow for different typologies? It could also be political grandstanding where, before elections, announcements are made, like “No more people in shacks! Everybody must have a brick house!” Maybe it could be that our thinking is just not creative enough. Or do you think there are other reasons?

Discussion on Part 2 – Construction and Delivery

Mr Schroeder stated that every Namibian was entitled to live in a brick house.

Ms Maritz argued that entitlement did not imply affordability.

Rymoth Mbeha, a Planning student, noted that housing prices did not reflect the various needs, such as that of young graduates.

Mr Ntinda mentioned that the financial sector was also an impediment when it came to the use of alternative materials.

Phillip Lühl of NUST stated that, since the MHDP Blueprint was being reviewed, it was the responsibility of all the stakeholders, including financial institutions, to review their position.

Ms Maritz asked how whether it was better to engage financial institutions through proposals or by inviting them to the discussion table.

Mr Kaumbi responded that the NHE had tried alternative technologies before. He explained that they had invited private entrepreneurs using different technologies to build different housing types. After that, the NHE had invited financial institutions to see the structures. While the institutions did not object to any of the structures, they said they needed to see if the houses remained robust over time because a mortgage might last for 20 years or more. In their view, if the material deteriorated in five years, then it served no purpose. Mr Kaumbi mentioned that South Africa had independent quality assurance providers that tested materials.²⁴ They also had a National Home Builders Registration Council that did independent quality audits.²⁵ However, in Namibia, there is none of that.

Ms Maritz responded that this was a clear example of something that the government could do.

An unidentified participant noted that, when there was a big gap between ‘the haves’ and ‘the have-nots’, it can be expected that ‘the have-nots’ want what ‘the haves’ have. He mentioned that the objective of independence was to have ownership. The focus of the discussion, therefore, was not on ownership but on remaining dependent on authorities. He proposed surveying informal settlements and issuing title deeds for inhabited plots with a clause prohibiting the sale of such plots for five to ten years. He also criticised that regulations in Namibia came from South Africa and that, even if one had a large plot of land, a regulation could prevent one from densifying it.

Mr Lühl agreed that the upgrading of informal settlements was indeed a necessity and that one of the challenges was the minimum plot size of 300 m².

²⁴ Agrément South Africa is an independent organisation that evaluates the fitness for purpose of non-standardised building and construction products and systems by applying performance-based criteria in its assessment procedure (<http://www.agrement.co.za/>).

²⁵ The NHBRC regulates the home building industry in South Africa. It was established in 1998 in accordance with the provisions of the Housing Consumers Protection Measures Act, 1998 (No. 95 of 1988), with the mandate to protect the interests of housing consumers and to ensure that builders comply with the prescribed building industry standards as contained in the Home Building Manual. See: NHBRC/National Home Builders Registration Council. 2014. Home Building Manual. Available at <http://www.nhbrc.org.za/>, last accessed 10 August 2019.

²³ Photographs courtesy of Johan Mottelson. <http://casamelhoradas.com/>

Ms Maritz remarked that, in the context of Namibia, many did not have exposure to alternatives, so the alternatives needed to be demonstrated locally. She proposed design competitions to solicit innovative approaches. She stated that research should not only be 'on paper', but that pilot projects could be developed to study how inhabitants responded to them. She also mentioned having seen a person submitting building alterations to create ten units in a single-family house – simply by making small changes and labelling spaces as “Entertainment area” or “Workshop”. She cautioned that she was recounting the example not to encourage breaking the law, but to encourage innovation through a more creative interpretation of current regulations.

Part 3 – Sustainable Housing

I want to talk about what sustainable means. *To sustain* in the dictionary means “to strengthen or to support physically or *mentally*”; *sustainable* means “to be able to be maintained at a certain rate or level”. If you think about housing, whatever solution we propose is something that must be able to continue to deliver at a certain rate. It must not be something that you do once. It is not about the housing: it is about what we are trying to support or strengthen through the housing – our society and our people. So, when we talk about sustainable housing, we are nurturing society, which is something that we must not forget.

There are four very important factors. Housing must –

- Be feasible: There is no point having fancy dreams about designs if they cannot be delivered, built and or afforded)
- Provide adequate shelter for a decent standard of living: It does not have to be a high standard of living, but it must be adequate
- Be durable: A lot of solutions nowadays last five or ten years and then you have to rebuild, and
- Be environmentally positive.

If you look at the resources that are needed for housing, we need land, roads, energy, water, materials – but we also need labour and finance. Housing also has to be properly designed: if it is not, no matter what else you throw at it, it is going to be a failure. The design needs to be based on research.

We must think of all these resources that go into housing. If we reduce these resources, if we need less energy, fewer materials, less labour, less skilled labour – because skilled labour is expensive – and we need less transport, housing becomes more sustainable.

What we also have to think about is not just what we use to produce the housing, but what people require to maintain or sustain it. To put it quite

simply, it has to be energy-, water- and resource-efficient, and it must address on-site as well as off-site impacts on the environment. When I talk about the *environment*, I mean people as well. So, an impact on the people might be that they can actually afford that bond or that they can afford the transport from their house to their place of work.

It is often thought that the technology, the material of the walls, is the solution. We have conventional materials, found natural materials, recycled materials, prefabricated materials and hybrids of these. Most housing is a bit of a hybrid. I once did this analysis of conventional concrete and brick versus low-tech alternatives versus prefabrication to find out which one was the best, but there was no such thing as ‘the best’: each one worked better under different circumstances. For some people, a shack might be the best solution because they are only in the place for six months, or they only have a couple of hundred bucks to pay for a few corrugated iron sheets, some lumber and a couple of nails to put it together. As soon as you start getting too narrow-minded about your construction methods and materials, then you are limiting your options.

You start with ‘low-tech local’,²⁶ self-sufficient systems. High-tech autonomous systems²⁷ are not necessarily appropriate in Namibia, unless you go for hybrids²⁸ such as putting solar water heaters on shacks. Offsetting is also something that has not been done in Namibia, such as when we build a big housing scheme, we can actually plant a lot of trees to offset the carbon we released during construction.

It is not only about being ecologically sound but also about identity. Passive design – in other words, the way you design your building to respond to the climate and to its environment – is the first step, because that does not require money. You first do a good design and then you add technology. The design must be frugal: you use the minimum means to get the maximum effect. It must be flexible. Passive design in the Namibian context, I think, must be low-tech. I know a lot of people do not agree with me: that is something that we can discuss, and I must accept that we already use a fair number of high-tech items in our construction. Our door handles, for example, are all made in factories; they are not low-tech anymore, they are not handmade.

And then we need to look at urban and neighbourhood scale. There is no point in designing the perfect house if it is not part of a proper neighbourhood. How are you using the land? How dense is it? In other words, how efficient is the way in which we use the land? Is there accessibility and do people have a choice in transport? If the only land that is provided for affordable housing is the furthest away from the city, we are actually putting those people into a transport-cost trap: they will be spending all their money on travelling back and forth, and not spending money on their house.

Another important aspect is green space. Developers often bulldoze the site flat, put in the services and then construct the houses. There is not a single

²⁶ Examples of similar terminology are: alternative, traditional materials; totally natural, low/zero emissions; back to nature, with roots in the green movement; small-scale.

²⁷ Examples of these are: latest technologies for services, super-insulation, solar photovoltaics, waste water recycling, building automation systems, etc.; energy-efficient construction, e.g. the Passive House concept; the Living Building Challenge for sustainability in the built environment; large-scale and expensive.

²⁸ Mixture of low-tech and high-tech.

29 Jonathan Rose Companies. 2011. Location efficiency and housing type: Boiling it down to BTUs. New York, NY: Jonathan Rose Companies. Available at https://www.epa.gov/sites/production/files/2014-03/documents/location_efficiency_btu.pdf, last accessed 13 August 2019.

tree left. Research in the USA on the psychological impact of greenery on people has shown that people who live in neighbourhoods with trees have a much lower crime rate than people who live in treeless neighbourhoods.²⁹ In Namibia, we usually start with sites that have trees – and then we take them out.



Image 8-19. The relationship between urban density and household energy needs³⁰ (Note: BTU = British Thermal Units)

According to the US Energy Information Administration (EIA) energy usage in the household and the energy used to build the house is not as significant as the energy used in transport.³¹ So, if we want to start mitigating the greenhouse effect, if we want to start reducing global warming, we really need to reconsider how we get from A to B. That is where urban planning and the design of housing projects start becoming really important. What they the US EIA show is that you can save up to 64% by managing your home and your car more energy-efficiently: up to 30% if it is just the home; up to 50% if the home is in a transit-friendly location. About 50% of a person's carbon footprint is energy spent on transport.³²

We have to think about the long-term financial impacts I have already spoken about. People should not get into a debt trap because of bond repayments or transport costs. We need to consider time. How early do people in Havana have to get up to get to Klein Windhoek to work? They cannot say, "There is a 07:00 bus, so I will get to work at 08:00," because the 07:00 bus might not come. They get up at 04:00 or 05:00 and, when they are finished, they get home at 19:00. That time is not spent with their children, which means that [their children] can join street gangs or that they don't do their homework. [The time used for transport] could also be used to earn another income. It is a further financial burden that you are placing on people by taking their time.

We need to think about space [as well]: space to do things, space to meet your friends, space to meet your family. If we only put in little rows of houses and there are no social or communal amenities, we are actually depriving people: we are depriving them of community, the ability to form a community around a certain node.

Nature has certain functions which impact in the long term that people often overlook. Firstly, it cools us down from the heat. If we destroy the vegetation and we build a lot of little brick or concrete houses, you create what is called the Urban Heat Island Effect, which pushes temperatures in the city up by as much as 5% to 6%.

[Secondly,] if we bulldoze everything and do not leave some trees, we get erosion problems when it rains. The stormwater blocks up all the drainage and we get major ecological problems. This means we need to incorporate nature in such a way that it can perform those functions for us efficiently. Trees clean the air! If we have a lot of greenery it helps to filter the air, reducing the dust so people have fewer respiratory problems. In Windhoek, the mica in soil is one of the biggest causes of respiratory problems.

Before we go to urban city life, I would like us to talk about sustainability, about what people consider sustainable housing to be.

Discussion on Part 3 – Sustainable Housing

Mr Ntinda said he agreed in having food or church options near one's house, but the place of employment should be one's choice.

Ms Maritz agreed, saying her argument was indeed about choice: to be able to have transport options – i.e. not only by car, but also efficient public transport – as well as the choice of being able to work near one's house if that was desirable. However, due to zoning, it was more often the case that one had to commute considerable distances to work.

Mr Ntinda replied that housing providers had no control over that.

Tshukoe Garoes, Director of the Habitat Research and Development Centre, informed the participants that there was a proposal for a quality assessment certification process with the Government at the moment. They were also engaging the Namibian Standards Institution to find how they could work together in this respect. Ms Garoes added that the Urban and Regional Planning Bill³³ was under way as well, which, in principle, should address some of the outdated planning regulations. She had three questions: (1) whether it had been proved that conventional methods were not sustainable; (2) whether there was currently alternative and affordable materials in Namibia; and (3) whether, to promote these, one needed to relax regulations, or whether it was possible for such materials to meet current standards.

33 Since passed as the Urban and Regional Planning Act, 2018 (No. 5 of 2018).

Ms Maritz clarified that conventional materials were not necessarily less sustainable than their alternatives, but that it depended on what was being built, who was building it (e.g. the end user, a developer, government), where it was being built, etc. All these factors impacted on the choice of materials. The definition of material also mattered, she said. In this regard she mentioned the Kavango Brick Block, which was considered alternative in Namibia, but since it employed cement, it could not be considered alternative in the broader sense. She mentioned sand as a widely available material in Namibia, and how building with sand bags could be something that could be explored further. She acknowledged that sand bags could be used structurally or for walls, but that those two elements were not the only ones making up a house: one still needed taps, door handles, fittings, etc., so using sand bags was not the solution to lower costs. She also noted that standards for walls specified they had to resist at least 7 MPa of pressure, while the actual load of a single-storey residential building's foundations in Namibia was no more than 1 MPa. She gave the Habitat Research and Development Centre as an example, explaining that they had used Hydraform interlocking bricks that were able to resist 4 MPa, and they were still performing well after almost 15 years. She concluded that standards ought to be revisited, as they may have not been adequate or appropriate in the first place.

Mr Schroeder felt that materials should be tested locally, and that South African standards should not necessarily be welcomed uncritically into Namibia. He also pointed at the variety of standards that already existed in Namibia, such as the standards that the banks and the NHE used. He noted that standards varied even within the same organisation; in this regard he mentioned the NHE.

An unidentified participant stressed that alternative transport should be considered. Bicycles, in his view, were the answer. He stated that a N\$2,000 bike represented 100 days of paying N\$20 for a taxi every day. He also noted how increasingly bad traffic was in Windhoek and that road safety was a deep concern.

An employee at Kerry McNamara Architects mentioned that there could be a regulation compelling developers of industrial areas to place bulk infrastructure in 'Greenfields',³⁴ so that the area could subsequently be developed, and the others could simply tap into it.

Ms Maritz noted that this was already taking place with electricity, as the first development in a Greenfield site needed to pay for the transformer.

Mr Schroeder suggested the potential of simply redeveloping the central parts of Katutura instead of looking at expansion.

Ms Maritz agreed that there were ample possibilities within the existing boundaries.

Part 4 – Urban Living

In this last section I am going to throw a lot of ideas at you which are not necessarily sequential.

The UN definition of *adequate housing*³⁵ includes –

- Having security of tenure
- The availability of services, materials, facilities and infrastructure
- Being affordable
- Being habitable
- Being accessible
- Being well-located, and
- Being culturally appropriate.

Notice that they did not say anything about being pretty.

UN-Habitat defines a *slum*³⁶ as a settlement that –

- Lacks certain services
- Is dilapidated and poor-quality buildings that break building bylaws
- Is overcrowded – which does not necessarily mean that it is a dense development, it just means that it cannot handle the population that it has
- Is unhealthy
- Is often located on hazardous or undevelopable land, which is insecure and where people might be evicted easily
- Usually has high levels of poverty and social exclusion.

Again, still nothing about being cute or pretty.

We have a bit of an aesthetic prejudice in Namibia that I often see when we talk about informal settlements, when we talk about incremental development, and when we talk about settlement upgrading. I would like to discuss a project from India, where incremental development evolves from Kuccha (which means “temporary, flimsy”) to *Pukka* (which means “the right thing, the solid thing, the permanent thing”).³⁷ So, we can see what the different stages of development look like. I am sure if I showed this slide to most of the people at the Ministry of Urban and Rural Development and to people at the municipality they would say, “Oh, my God! We don't want that!” But that is an aesthetic prejudice because it does not look neat or pretty. If it does not have the characteristics of a slum, and it provides those aspects relating to adequate housing, I think we should be ready to accept it. It is very important that we do not apply our preconceived ideas of what things look like aesthetically to the performance of housing and urban settlement.

In Namibia, we have a high housing demand that is not being met by our current housing models because they are too expensive, they are bad for

³⁵ See Session 6 herein.

³⁶ UN-Habitat. 2011. Housing the poor in African cities. Urban Africa: Building with untapped potential, Vol. 1. Nairobi: United Nations Human Settlements Programme.

³⁷ Kucha and Pukka are the two types of housing erected in India.

³⁴ Greenfields refers to land not previously built on.

the environment, they are socially isolated, and we continue to create such environments. We all know about this, so what is our solution? What should housing provide? I think it is important that housing should provide at least those three things: it should be healthy, there must be enough space for what people want to do, and they have to have access economic opportunities, environmental benefits and so on. All of these go without saying, but it is important that we keep having this in the back of our minds.

We must not create the following: financial burdens; soil, air and water pollution; social problems; urban sprawl; etc. So, what is our definition of a *house*? It is a place to do all of those things: it is a place to sleep, eat, clean and store things and it is a place for family. But it is not just that. It is also a place to work and earn, a place to study and learn, a place to meet and grow, a place to rest, a place to play, a place to create, a place to fly.

And this is where I want to ask the questions *What is a house?* and *What is a city?* What do we expect the house to provide and what do we expect the city to provide? Or are they actually so intertwined that the house and the city should work together to provide all of those things?

So, when we are talking about having gardens, if people have a village green – a place where there is a garden or park where they can get together – does it have to be that I also have my private garden that I fence?

If people want to have a party with 50 guests, must they be able to fit it into their living room? Or can they have their 50 guests party in their neighbourhood square, which is next door?

Do you need a full home kitchen with all the 'drama'? You know, in China, they have hot water stations within a short walking distance of every little street; so, you can go there, and you can get boiling water to cook your food. It is a service that is provided for the community. In many places in Europe, people do not use their kitchens anymore because they eat out all the time. They go and get their coffee and their pastry on their way to work, they eat lunch somewhere near their work and, in the evening, they get a takeaway.

Bathrooms: if people cannot afford to have their own shower, basin and flush toilets, how about providing them with public bathhouses, so they can have a proper hot shower in sanitary conditions, they can use a proper toilet, and they can wash their face and brush their teeth in a proper basin without having to go and squat behind the bush?

So, again: what is the house and what is *the city*? We have had a lot of discussion this morning and yesterday about *the informal*. There is a lot of prejudice against the informal in Namibia. This is an informal market in Italy (Image 8-20). They consider this as one of the high points of Italian civilisation to have their informal vegetable market in the street.



Image 8-20. Market in Italy.

Discussion on Part 4 – Urban Living

An unidentified participant pointed out that, in Windhoek, there were not so many playgrounds, so the options left were malls and Zoo Park.

Ms Maritz replied that, if one had to take a car to get to a playground, it was not a neighbourhood playground.

The unidentified participant remarked that a community and a nation were built through the provision of public spaces.

Ms Maritz referred to Richard Dobson's presentation³⁸ on the work of Asiye eTafuleni in Warwick Junction, noting how an area-based management and a multidisciplinary team, working with local government, had yielded admirable results. She favoured this approach instead of simply sending engineers to service land, place roads, and only leave leftover funds for amenities.

Mr Lühl reminded the audience of the definition of adequate housing, particularly the notion of *progressive rights*. He noted that it was not necessary to 'check all the boxes on Day 1', but that prioritisation, identifying immediate intervention needed, and tasking someone to drive it, were required. He invoked the notion of *progressive rights* to counter the need to meet set standards or to move away from the discussion of what was 'right' and what was 'wrong'.

An unidentified participant asked whether large-scale titling programmes had been undertaken and what the outcomes were.

Mr Lühl explained that land titling had been debated since the 1980s, but that it is usually been promoted as a one-size-fits-all solution. However, in places of high inequality, once titles were issued, those with money were

³⁸ See Session 3.

able to purchase the land from those with few means who were more prone to sell in distress. This led to a new round of displacement and new informal settlements, so he cautioned against considering titling as a magic wand. He clarified that the aim should be to protect and enable those who had already settled somewhere.

Ms Maritz asked what the audience thought was the best way to convince politicians: field trips to familiarise them with other examples or developing pilot projects.

Richard Dobson from Asiye eTafuleni noted that what had mainly been discussed were strategies pre-empting what the end user was going to think. However, he felt an education programme might be a more effective measure in some respects. He warned against using examples from places that had been 'urban' for generations, as many were themselves trying to come to terms with a variety of challenging transitions currently taking place. He also noted that many of the contributors were making proposals reflecting their privilege gained through reading, travelling, etc. However, the challenge was how to engage meaningfully with the average person that had just moved to the city and was trying to make sense of what was happening. He also expressed some scepticism in building pilots: even if one developed only a few units, it would take years for the space to develop into what was originally intended to demonstrate.

Mr Lühl agreed that an overt focus on the technicalities of housing itself could make one forget about the social process. He cited as examples the sessions with Sheela Patel and Rose Molokoane, which stressed the social process.

An unidentified participant mentioned how the River Walk Project³⁹ could open up possibilities for urban living in centrally located areas with abundant green space.

Mr Lühl noted that the River Walk Project was an ongoing project with potential for inner-city densification. However, he said, he had also become aware of a lack of coordination between the project and other ongoing initiatives, such as the Windhoek public transport plan.

Mr Ntinda stated that, whatever solution was discussed, it needed to consider existing informal settlements, as they would still be in existence for the coming decades, and a solution needed to entail benefits and improvements for them as well.

Mr Namupala remarked that new interventions were invariably in the periphery of cities and proposed bringing development to inner-city areas.

Ms Maritz responded that most of the inner-city land was already in private ownership, but she suggested that an audit could be done to identify underused space, and that the mechanism of *eminent domain*⁴⁰ could be employed to recover these.

An unidentified participant noted that, if this (invoking *eminent domain* to expropriate land) was done, there should be a mechanism to encourage owners to develop the land.

Ms Maritz stated that there was already a similar regulation for new land purchases which compelled the new owners to develop the land in the immediate years following the purchase to avoid an increased tax burden. She added that open underdeveloped land owned by government could also be utilised to develop housing.

³⁹ The Namibian, 11 May 2018. Kazapua's dream for Windhoek – a river walk. Available at <https://www.namibian.com.na/index.php?page=archive-read&id=177270>, last accessed 14 August 2019.

⁴⁰ A term used to indicate the supreme power of the state over all property under its jurisdiction; including alienating the land from an owner in instances of public interest.