

A

M

A

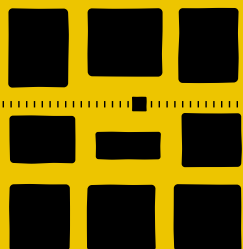
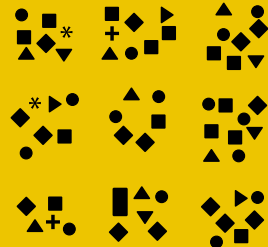
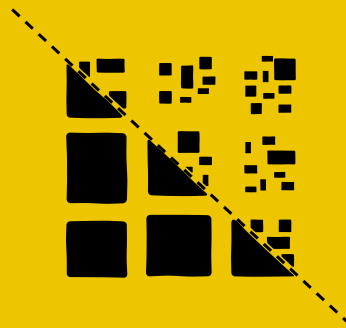
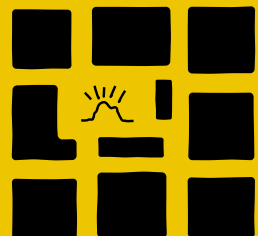
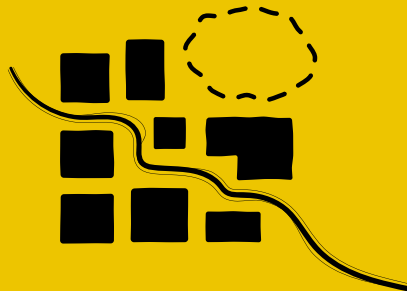
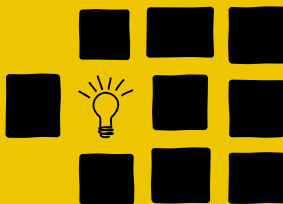
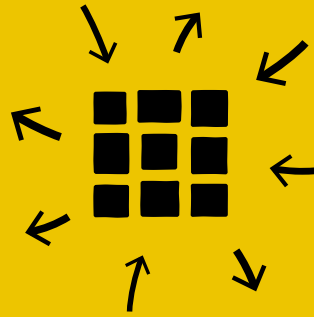
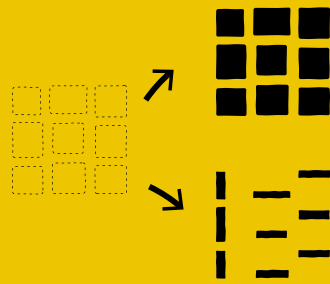
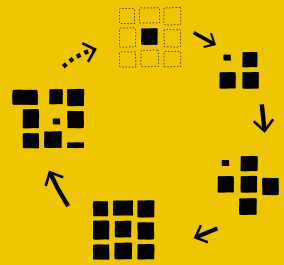
N

U

A

L

INTERNATIONAL  
NEW TOWN INSTITUTE



# A Manual 10 Principles for the Design of New Towns

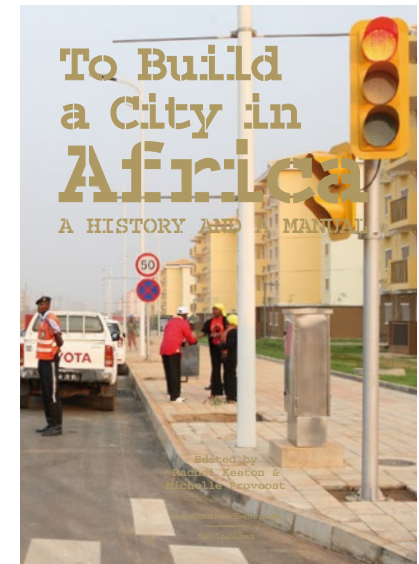
## Background

This Manual is part of the publication *To Build a City in Africa. A History and a Manual* (Rachel Keeton and Michelle Provoost (eds), NAI010 Publishers 2019). This book is about the role of urban planning and urban design in the genesis of an entirely new generation of new cities and New Towns that is being produced right now on the African continent. It is about the design of cities, not about urbanisation in general or even about the -equally important - economy, technology or governance of building cities.

It is widely known that Africa has become the world's fastest urbanising continent. This urbanisation is a huge challenge in areas with fragile institutional frameworks and chronic poverty. Existing cities often become overcrowded and congested. In response to this, both state and private developers increasingly see a market for New Towns – comprehensively planned, mixed-use urban developments on greenfield sites. To illustrate the extent of this phenomenon, the authors calculate that if all the New Towns in Africa that were announced by 2018 meet their targets, 77 million people in Africa (or nearly 10 percent of the total urban population), will be living in New Towns by 2030.

In many cases, these New Towns end up attracting mainly international companies and catering exclusively to the middle- and upper-income groups, disregarding the low-income groups who make up the majority of Africa's urban dwellers, and failing to adequately address ecological vulnerabilities.

In *To Build a City in Africa* we explored the complex implications of these new developments through an inventory of almost 150 New Towns, interviews with different stakeholders, in-depth case studies of five African New Towns in different countries, and essays that elaborate specific issues connected to these New Towns.



### **The Manual - 10 principles**

An important part of the book is the Manual, which offers an alternative approach for planners, developers and other decision-makers aiming to construct more inclusive and sustainable New Towns in Africa. The Manual consists of a set of ten design and planning principles:

- Planning is an ongoing process
- Plan for adaptivity
- No New Town is an island
- Use no cut and paste universal model
- Embrace new ideas
- Infrastructure and mobility for all, from the start
- Use a blue-green infrastructure as the central framework
- Incorporate local cultural heritage(s)
- Combine top-down and bottom-up
- New Towns need diversity

The principles are organised in a way that loosely follows the order from long-term and large-scale decisions and processes to smaller scale and urban design advice. The first three guidelines therefore address issues related to process and site selection such as the need for long-term planning and planning for adaptivity, affirming the need to view New Town planning as a process of evolution over time, rather than a product that is 'complete', as well as integration into large-scale spatial planning and existing networks at different scales. The fourth and fifth guidelines argue against the tendency to copy-paste urban models from elsewhere, plead for innovative, local designs, and recommend experimentation and exploration. The sixth and seventh address urban design issues and convey the lesson that successful New Towns include infrastructure for every modality right from the start, as well as the inclusion and integrated planning of green open spaces and water networks as the backbone of the urban plan. The final three guidelines deal with the need to embed the New Town in its local context, local culture, and heritage, and the needs for transparent public engagement in the planning process and inclusion of existing residents and communities.

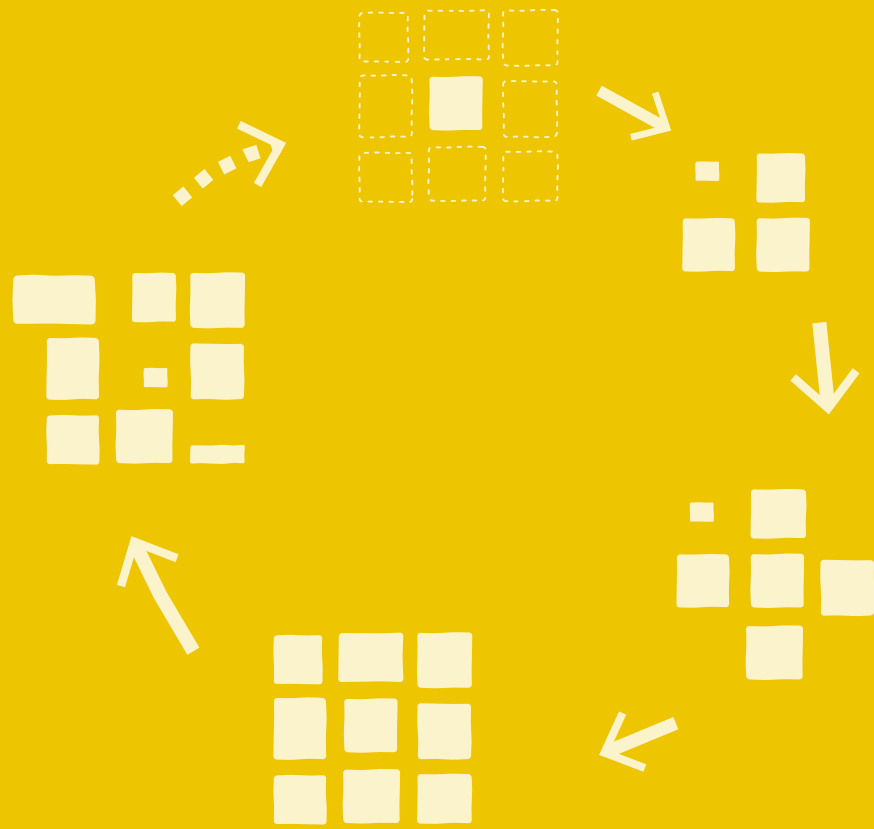
The principles were distilled from various research strands: first, they are based on historic research through close consideration of 20th century African New Towns. Second, they draw on our experiences with New Towns worldwide. Third - and most importantly - we have used our analysis of current and contemporary plans in Africa to identify the most common critical aspects in the planning of New Towns in Africa and have geared the principles towards these issues.

The principles have been developed as an addition to the *New Urban Agenda* by the United Nations (2017). Underlining the general recommendations for planning and urban design in this document, there are a number of issues that specifically apply to the physical planning and design of New Towns, which have not been addressed in the *New Urban Agenda*. This Manual hopes to rectify this omission and offer advice on essential steps in the planning and design of New Towns.

An early draft of these principles was first presented at the first International New Town Day in Almere, the Netherlands, 2016. Later in 2016 they were presented in Quito, Ecuador at Habitat III. Following that, they were further tested through workshops with New Town stakeholders, reviewed by multi-disciplinary experts, and refined through extensive discussion with planners, developers, politicians, and residents of African New Towns.

This Manual is free to use and disseminate. Let us know what you think at: [info@newtowninstitute.org](mailto:info@newtowninstitute.org)

You can order the publication R. Keeton, M. Provoost (eds), *To Build a City in Africa. A History and a Manual* here: [www.nai010.com/nl/publicaties/to-build-a-city-in-africa/139474](http://www.nai010.com/nl/publicaties/to-build-a-city-in-africa/139474)



### 1. Planning is an ongoing process

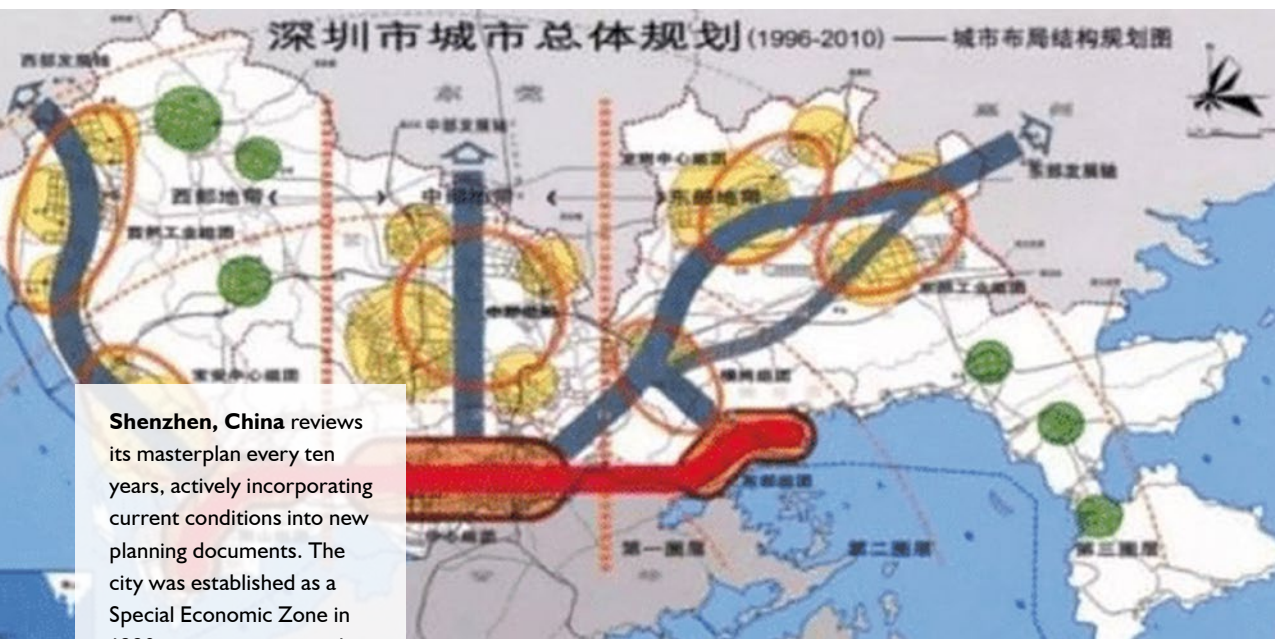
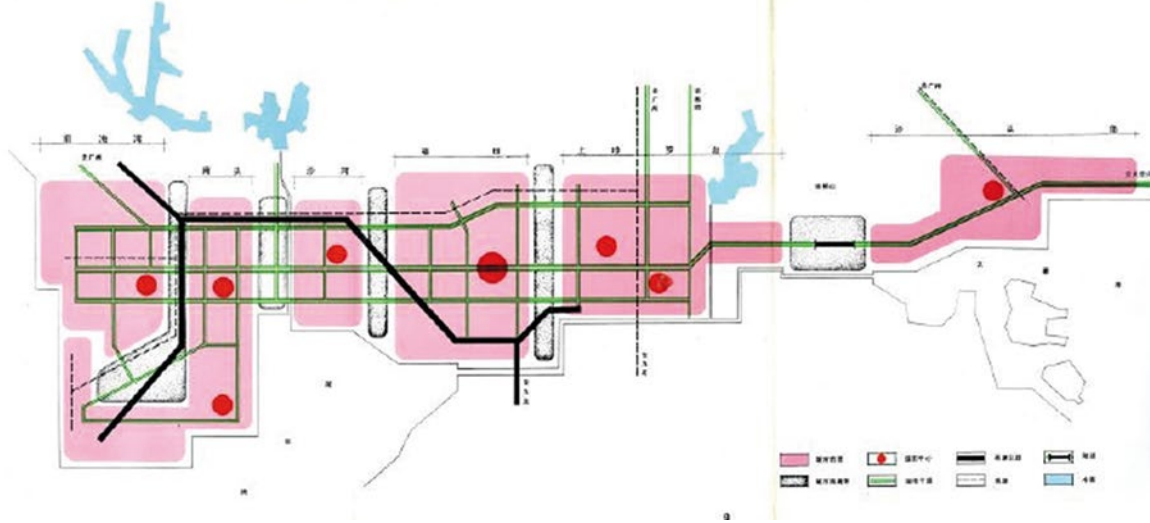
No city is permanent or static, and everything that was once modern eventually becomes outdated. The cities that are most effective are those that reflect and adapt to changes over time. New Towns should be conceptualised as a very long-term process, rather than a short-term product. They need time to develop into complete and vital urban environments. All cities continuously evolve over time, and this evolution should be clearly addressed in terms of phasing, sequencing, maintenance, and financing.

To do so, the (master) planning documents must be re-evaluated at key stages, and especially when growth-related, large infrastructural or programmatic choices are being considered. Monitoring and evaluation should be ongoing throughout the New Town's life cycle, so that current conditions are understood, changes are documented and their consequences can be processed in consecutive planning phases. It usually takes New Towns at least 50 years after initiation and sometimes longer to reach maturity. Private developers should therefore work with local governments to achieve long-term results. No city is ever finished.



**Cergy Pontoise, France**, one of the Villes Nouvelles around Paris, is based on a Masterplan designed in 1970, allowing for continuous growth of the city (presently 200,000 inhabitants) within the infrastructural framework of the plan. The programme, density, design and architecture of the individual districts is adjusted according to the demand, economy and financial possibilities of the moment. Therefore, the identity of each district differs greatly, reflecting the needs and zeitgeist of each decade. Fifty years after the initial masterplan, the framework is still being used to expand the city, while the urban design of the new districts is completely contemporary.

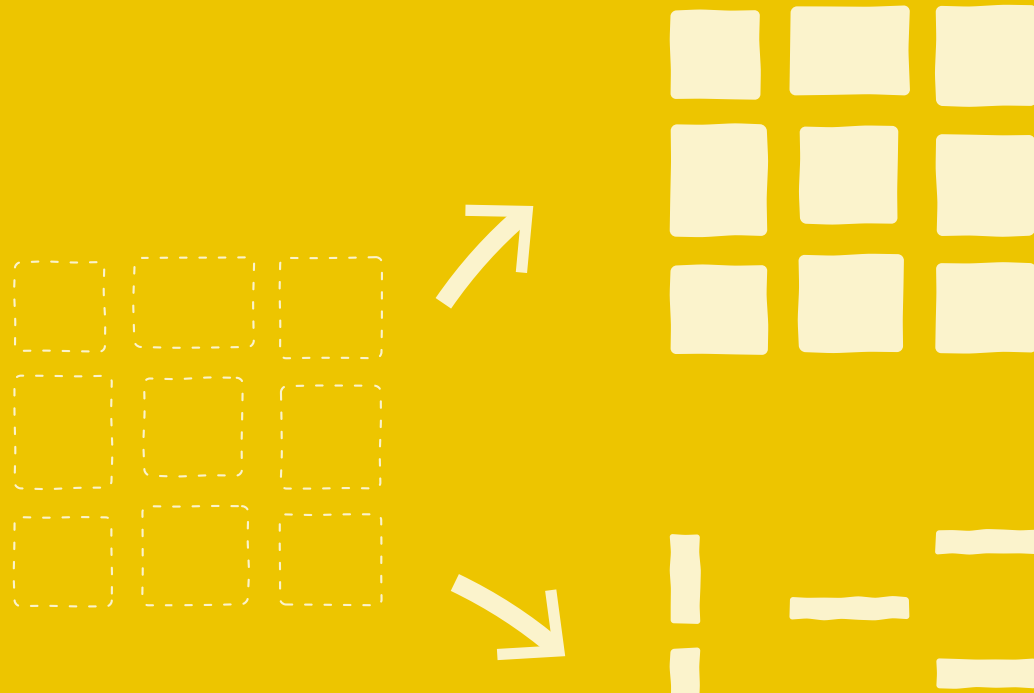
(Photos: M. Provoost, 2014)



**Shenzhen, China** reviews its masterplan every ten years, actively incorporating current conditions into new planning documents. The city was established as a Special Economic Zone in 1980 as an economic and political experiment. The first masterplan was quite rudimentary and mapped the outline of the new city as a linear city developing along a few main highways. Subsequent masterplans have been issued every decade to cope with the fast pace of development of the city: To steer the development, but also to invite it; to not frustrate development; and to make negotiations and detailed plans possible on more detailed levels.



**Abuja, Nigeria** was originally developed according to a comprehensive masterplan. However, as the city grew, certain officials looked the other way as illegal neighbourhoods and squatter settlements mushroomed within areas slated for other development. That relaxed attitude has shifted significantly in the last two decades. Beginning in 1999, the masterplan was revised regularly, in 2006 and 2016. Each review has been followed by new commitments to safeguard green space and subsequent shanty demolitions and resettlement projects. In 2018, the city's administration commenced another resettlement programme to move indigenous communities living in the Federal Capital City to peri-urban areas. The programme has been met with active resistance and questions regarding fair compensation.



## 2. Plan for adaptivity

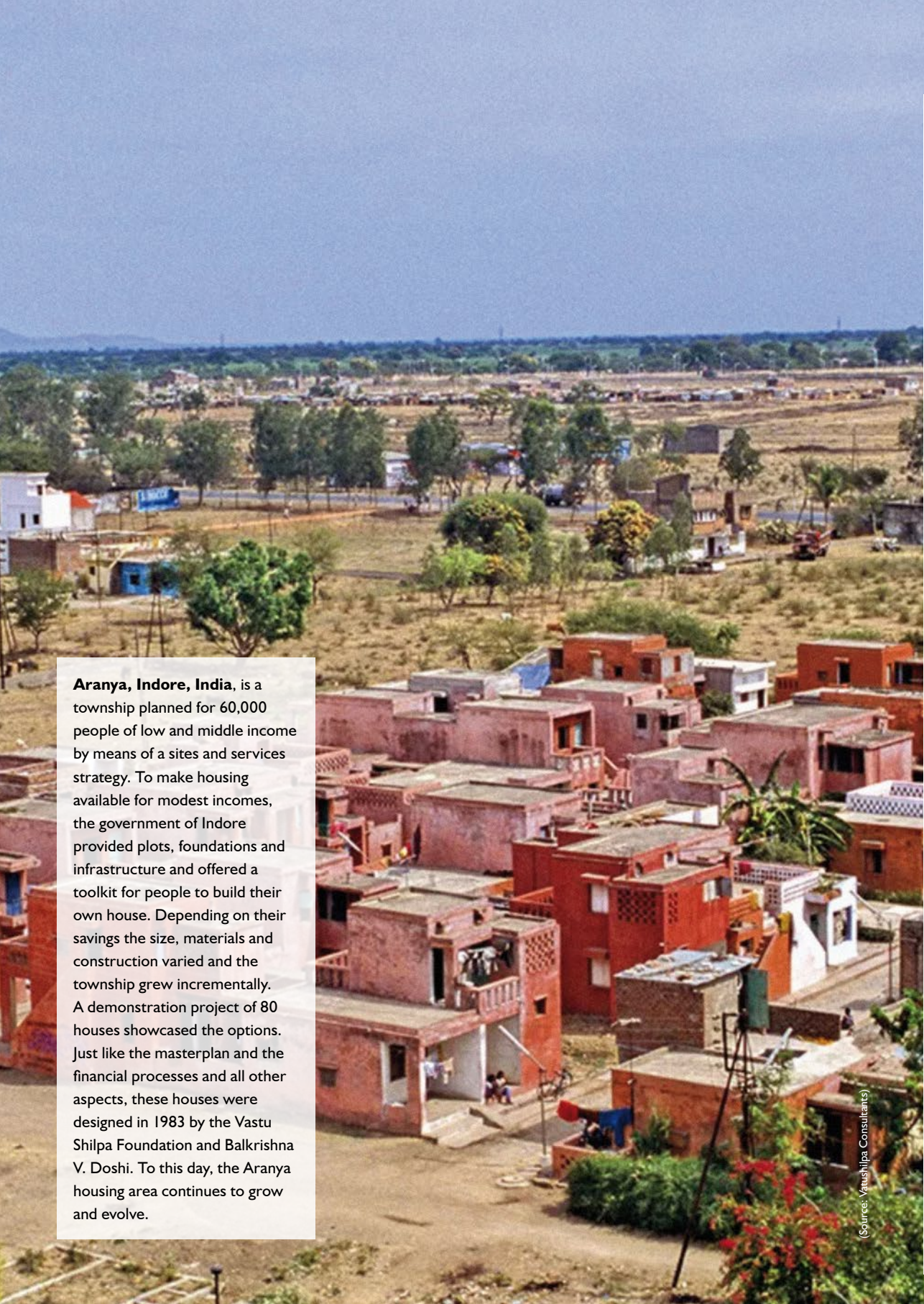
When a city is conceived according to a masterplan aimed at a single, final result, it limits the New Town's capacity for change. For this reason, New Towns have historically struggled with the need to adapt to dynamic economic or social conditions. Their masterplan was conceived at a single moment in time, and because planning inevitably reflects the conditions at that one moment, a masterplan is frequently obsolete before it is even realised.

Demographic projections indicate continued urban growth over the next century throughout the African continent. The masterplan for Abuja, Nigeria (1979), for example, was planned for a projected population of three million after 25 years, but its metropolitan area currently has six million residents. Others, like Dodoma, Tanzania, have never reached the population size they expected to achieve. To adapt successfully, New Towns must be able to absorb influxes (of varying sizes) through increased density and/or extension, becoming increasingly compact over time without degrading public and green spaces.

Demography is just one of many factors that may not crystallise as expected. New Towns will also have to address future issues that we simply cannot anticipate. The organising urban form should therefore create spatial conditions that enable adaptation to a number of variables, including: demographic, economic, and environmental. Urban planning should leave space for reinterpretation over the course of time. A masterplan should not create a final image, or a blueprint that needs to be realised, but rather a spatial vision for the future and a solid framework to reach this goal while leaving space for new insights and infill. Planning for adaptivity requires the capacity to accept uncertainty.



**Ningo-Prampram, Ghana** is a plan for a new city of 1,500,000 inhabitants in the fast urbanising coastal area east of Accra, co-designed by UN-Habitat. Rather than a masterplan, this is a strong framework for the development of a naturally growing city. Based on an infrastructural grid system coupled with ribbons of green and water, this design addresses the need for inclusive housing areas, the need to accommodate excess flooding during peak rain season and the explosive urban sprawl in the Accra region.

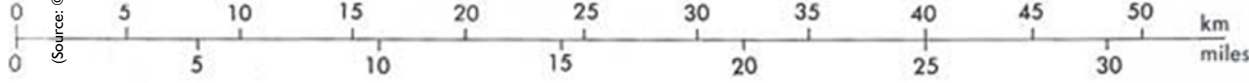
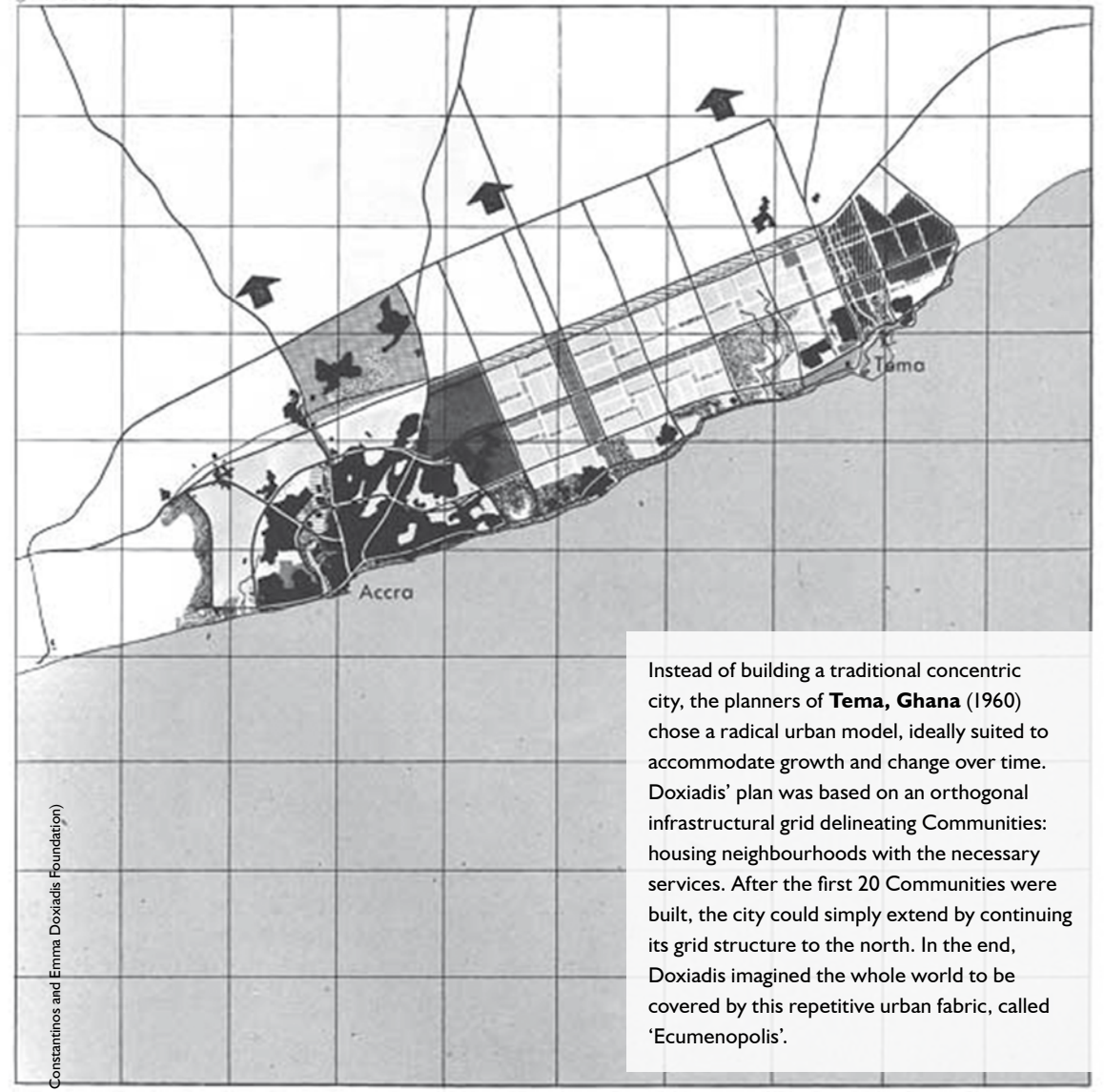


**Aranya, Indore, India**, is a township planned for 60,000 people of low and middle income by means of a sites and services strategy. To make housing available for modest incomes, the government of Indore provided plots, foundations and infrastructure and offered a toolkit for people to build their own house. Depending on their savings the size, materials and construction varied and the township grew incrementally. A demonstration project of 80 houses showcased the options. Just like the masterplan and the financial processes and all other aspects, these houses were designed in 1983 by the Vastu Shilpa Foundation and Balkrishna V. Doshi. To this day, the Aranya housing area continues to grow and evolve.

(Source: Vastu Shilpa Consultants)

- |                         |                                     |
|-------------------------|-------------------------------------|
| residential area        | central functions (class V)         |
| existing city           | light industry-workshops            |
| civic-commerce-business | industrial zone                     |
| institutions            | military area and civil aviation    |
| academic area           | open spaces-parks-green areas       |
| harbor                  | green spaces with special buildings |

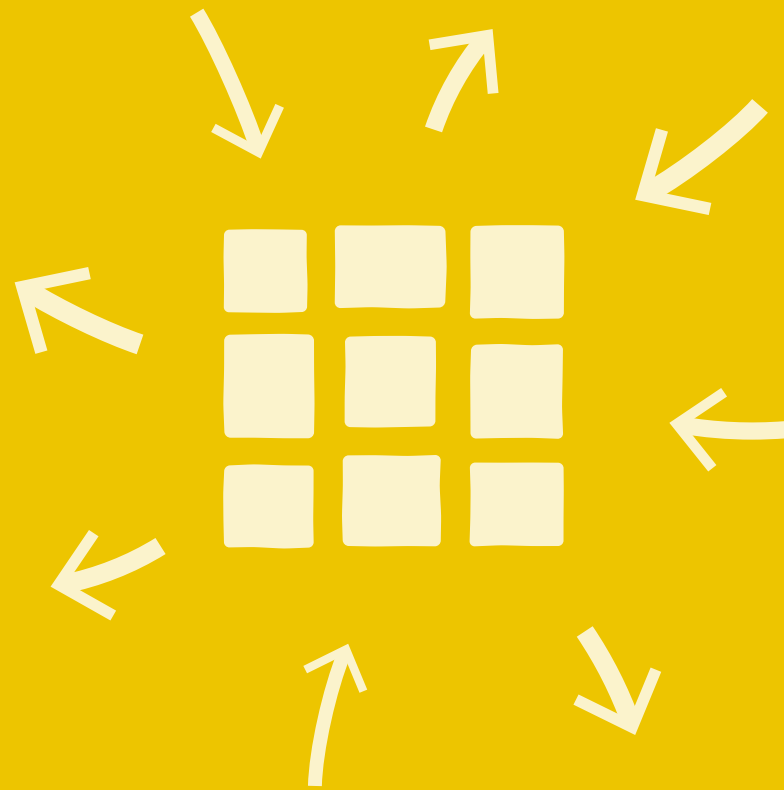
grid 5 x 5 km



(Source: © Constantinos and Emma Doxiadis Foundation)

Instead of building a traditional concentric city, the planners of **Tema, Ghana** (1960) chose a radical urban model, ideally suited to accommodate growth and change over time. Doxiadis' plan was based on an orthogonal infrastructural grid delineating Communities: housing neighbourhoods with the necessary services. After the first 20 Communities were built, the city could simply extend by continuing its grid structure to the north. In the end, Doxiadis imagined the whole world to be covered by this repetitive urban fabric, called 'Ecumenopolis'.

**Fig. 27**  
Accra-Tema metropolitan area:  
a Dynametropolis with three nuclei growing parallelly

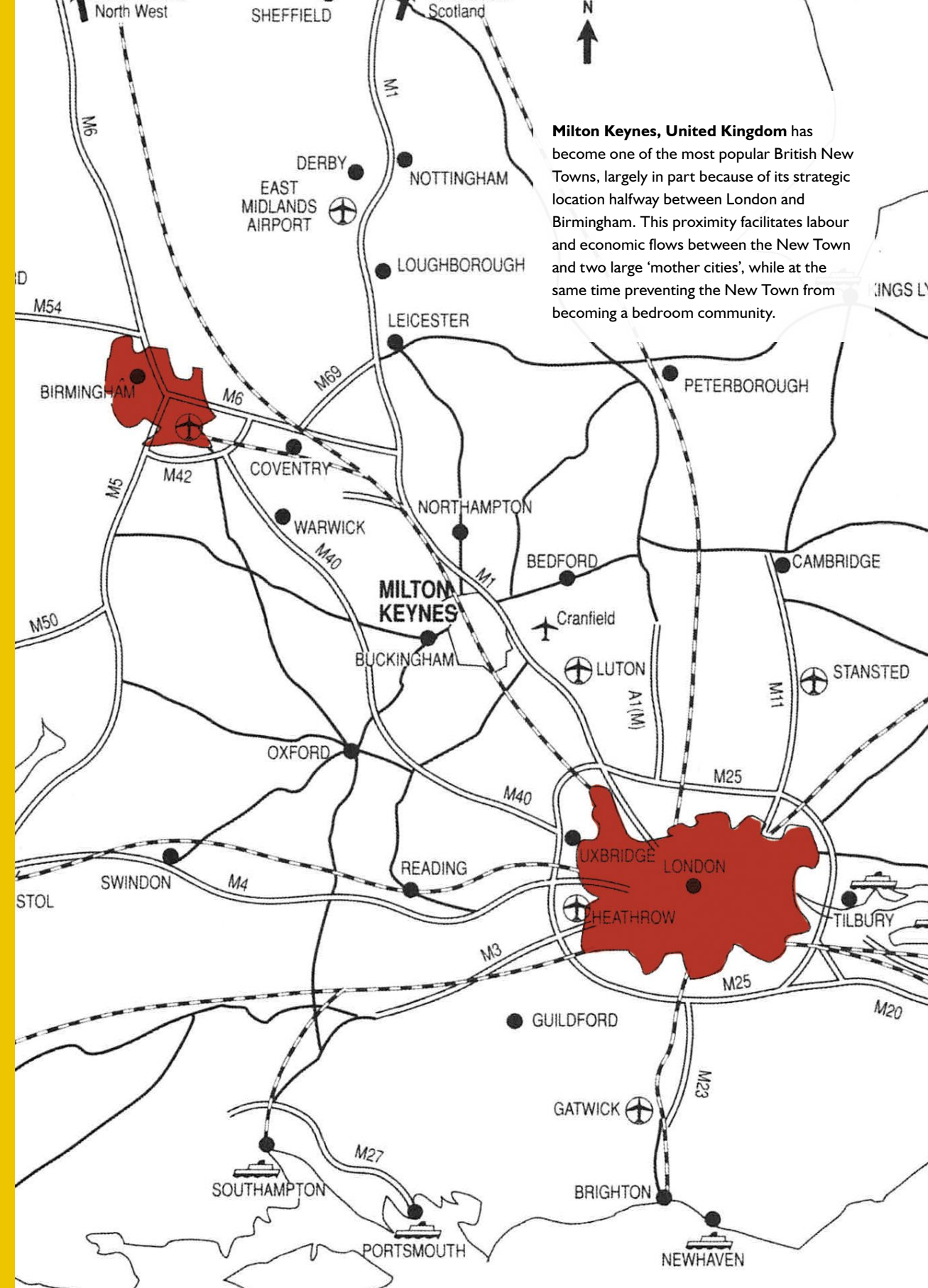


### 3. No New Town is an island

Many New Towns in Africa are developed on sites that are chosen for their low price, the transparency of ownership, or relationship to a person with political influence. This can cause problems related to access as New Town residents find themselves with long commutes to and from a 'mother city'. A location that is not connected by existing infrastructure can also seriously limit the New Town's growth: residents or businesses are less likely to move to a New Town that is difficult to access.

The site selection phase is therefore critical to the future success of the New Town. Potential locations must be considered within their regional and national contexts. The sites should be selected based on accessibility (efficient infrastructural connections to surrounding urban areas), local needs, geographic conditions, potential for growth, and position in existing social, financial and production networks.

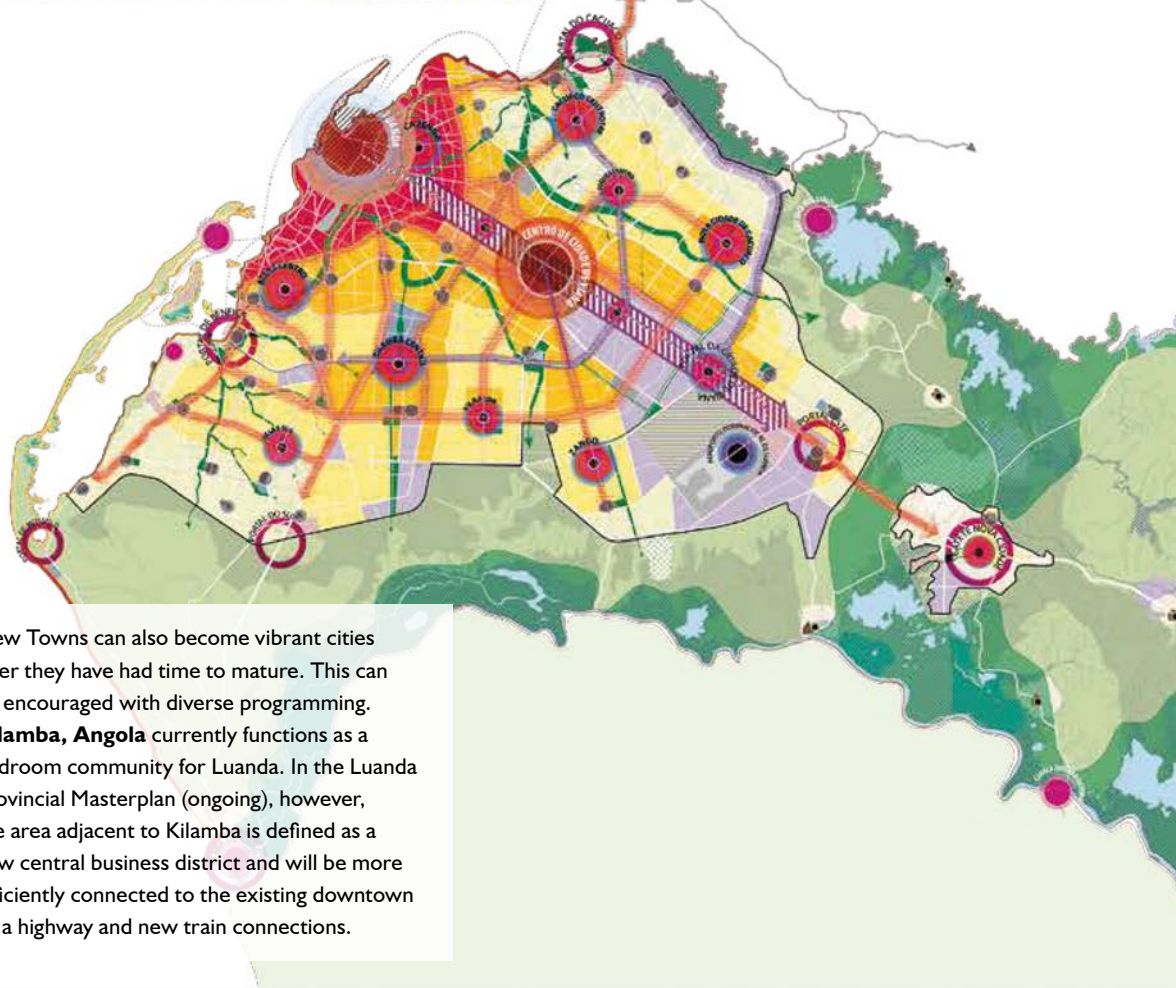
Planning New Towns requires a thorough evaluation of the position of the city with respect to regional, national, and global flows. To ensure their success, future New Towns should be based on a comprehensive national spatial policy and not planned as isolated projects.





# ESTRUTURA DE DESENVOLVIMENTO E CONCEITOS

## DEVELOPMENT FRAMEWORK & CONCEPTS



New Towns can also become vibrant cities after they have had time to mature. This can be encouraged with diverse programming. **Kilamba, Angola** currently functions as a bedroom community for Luanda. In the Luanda Provincial Masterplan (ongoing), however, the area adjacent to Kilamba is defined as a new central business district and will be more efficiently connected to the existing downtown by a highway and new train connections.

### LEGENDA

- |  |   |   |
|--|---|---|
| 01. Limite da Área de Projecto<br>Project Area Limit                     | 07. Luanda Centro da Cidade<br>Luanda City Centre               | 13. Principais Corredores de Emprego<br>Key Employment Corridors            |
| 02. Estradas Principais<br>Main Roads                                    | 08. Luanda Cidade Interior<br>Luanda Inner City                 | 14. Principais Rotas de Transportes Públicos<br>Key Public Transport Routes |
| 03. Estradas Secundárias<br>Secondary Roads                              | 09. Viana Cidade Interior<br>Viana Inner City                   | 15. Linhas de Transporte Marítimo<br>Ferry Routes                           |
| 04. Ferrovia (Mercadorias e Passageiros)<br>Railway (Cargo & Passengers) | 10. Residencial - Densidade Alta<br>Residential High Density    | 16. Parques<br>Parks  |
| 05. Planos de Água<br>Water Bodies                                       | 11. Residencial - Densidade Média<br>Residential Medium Density | 17. Espaço Aberto<br>Open Space   |
| 06. Limite de Área Urbana<br>Urban Area Limit                            | 12. Residencial - Densidade Baixa<br>Residential Low Density    | 18. Paisagem Protegida: Bosque<br>Protected Landscapes: Woodland            |

(Source: Broadway Maylan, 2016)



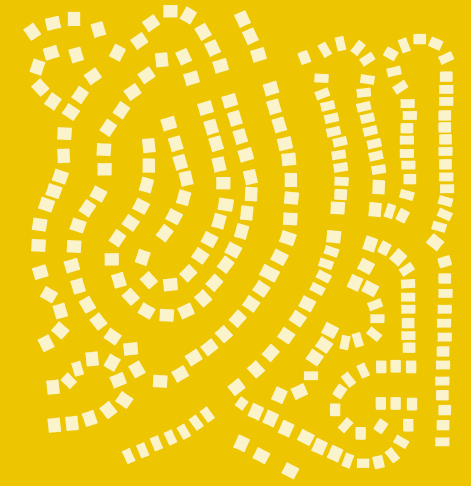
(Source: H. den Hartog, 2010)

The ten New Towns developed as satellite cities around **Shanghai, China** play a role in decentralising the development and mitigating population growth of Shanghai. They are close enough that residents can commute easily, and well-connected via public transport. They are also far enough from Shanghai that the New Towns must provide adequate urban amenities and commercial facilities in order to survive.



Access is defined by distance as well as availability and price of transport. Increasing access can be as simple as supplying adequate public transportation options. Cape Town recently extended their Integrated Rapid Transit (IRT) network to include a new bus line to Atlantis, South Africa, a New Town (presently 70,000 inhabitants) that was planned in the Apartheid era and subsequently valued isolation of the 'black and coloured' population more than the connection to Cape Town, 40 km to the south. The new bus service provides residents with safe and frequent service to other parts of the city.

(Source: [www.cape-town-greenmap.co.za/blog/mycity-bus-service-operating-atlantis](http://www.cape-town-greenmap.co.za/blog/mycity-bus-service-operating-atlantis))



#### 4. Use no cut-and-paste universal model

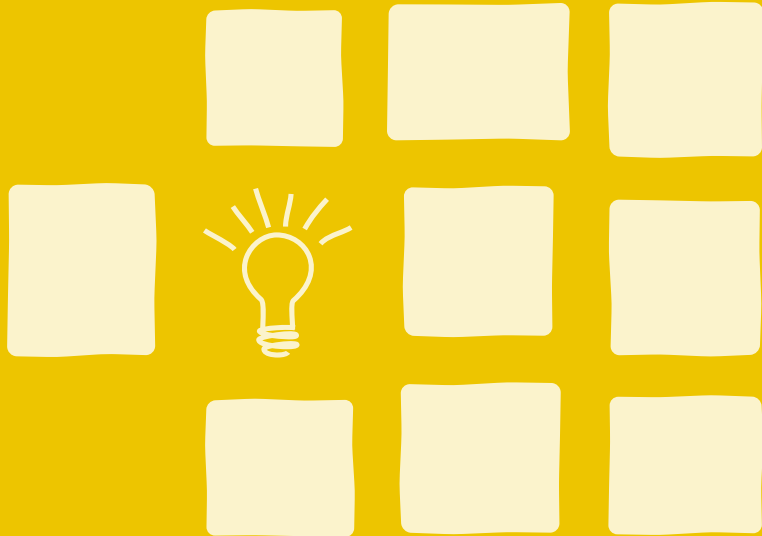
There is no one-size-fits-all model for New Towns: models from one part of the world don't guarantee success when exported to another part. The economic acceleration of a city like Dubai doesn't mean that a similar model can be equally successful or appropriate in African countries with completely different economic and demographic compositions. However, we are witnessing a growing number of planned cities in Africa that take models from the Middle East and Asia as archetypes to emulate.

The reason for this is that international companies have pinpointed urbanisation in Africa as the next global opportunity for profit. Not only private companies, but also state-owned companies in China, South Korea, and Singapore aim to prolong their success in other parts of the world by exporting standard urbanisation models from their own countries. As a result, the influx of foreign parties also results in the import of foreign urban concepts, often uncritically adopted by local governments. This shows how global capitalism has become perhaps the most powerful force for homogenization of contemporary urban environments. It also helps explain the uniformity of the African New Towns presented in this book, and their strong similarities with New Towns in parts of the world such as Asia, Latin America or the Middle East.

Instead of accommodating this imported uniformity, every country should be capable of developing its own urban models based on local culture, climate, politics, social needs and financial possibilities. To support this contextualization, local capacity-building within the planning discipline, planning and design education, and training are necessary and should be stimulated at national, regional, and local levels. Next to that, there is a need for a mentality change to inform future urban design, including an awareness of the incredibly diverse African urban traditions and the unique characters of present day urbanisation processes in Africa.







## 5. Embrace new ideas

The culture of New Towns is forward-looking, with an emphasis on innovation and experimentation. This ambition is optimistic and should be fostered. Every New Town in history has attempted to surpass cities of the past and showcase state-of-the-art urban design, technology, finance, or architectural techniques. Recent innovations have included experiments in the fields of sustainability, climate change response, and energy, as well as social changes such as participatory design, resident engagement, and revisions of the relationships between government and residents.

For future New Towns this means the development of new solutions (not only in technology but also social, cultural, political and financial innovation), should be supported in order to improve the fairness and competitiveness of the city. New Towns can be excellent laboratories for experimentation, as well as implementation of the sustainable urbanism goals outlined in the New Urban Agenda.



(Sources: Wikimedia, photo: Ronit105)

**Magarpatta, India**—A farming community outside of Pune watched as urbanisation spread towards them. Other farmers were selling off land to developers for small sums, but then struggling without long-term sources of income. Aware of this, the Magar clan pooled their land and became developers themselves, thus retaining ownership of what eventually became the New Town of Magarpatta. By maintaining ownership through collective action, the farmers have ensured a profitable future for themselves, and become active participants in decision-making processes related to Magarpatta's growth.

The future city of **Vinge** is currently **Denmark**'s largest urban development project, combining nature and technology. The intention is that Smart Grids and Smart Technology come into play when monitoring energy consumption, rainfall, humidity and so forth, enabling the community to strive for a sustainable lifestyle. In addition, technology should serve as a tool to use decentralised renewable energy, to develop low carbon mobility, to optimise the operation of infrastructure and services, to create distributed places of work and learning and to organise participatory governance and planning. Citizens should be able to communicate with each other and share ideas and visions with the planners through various digital platforms, thus becoming active participants in the creation of their future city.



(Visualization: Henning Larsen Architects and Third Nature)



exchanged for 1kg of food.



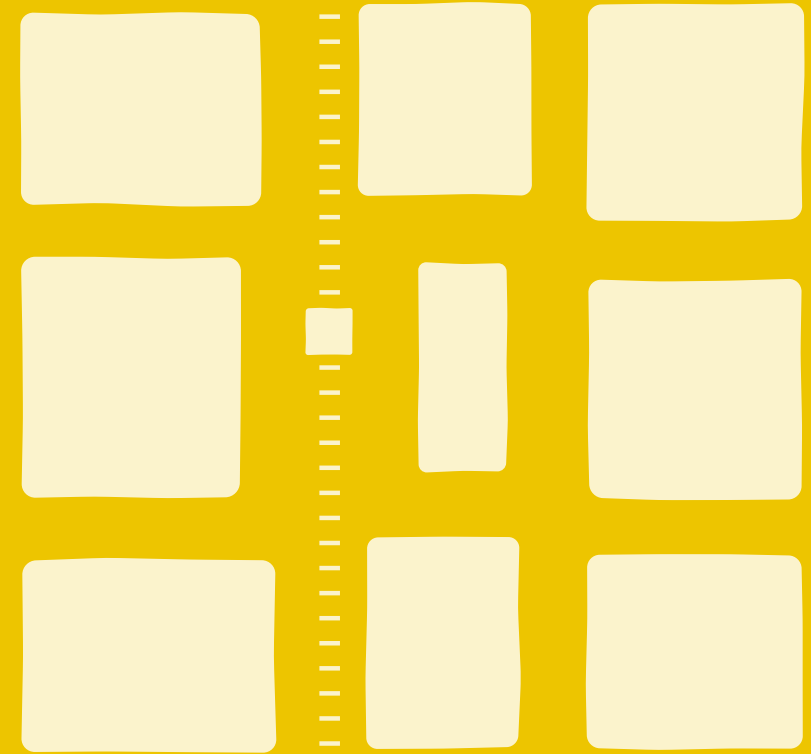
(Sources: www.curitiba.pr.gov.br/)

**Curitiba, Brazil**, has become well-known as an innovative and sustainable city. Without a budget for standard waste recycling plants, the city started the 'Lixo que nao e Lixo'; (garbage that is not garbage) and 'Cambio Verde' (green exchange) programmes, both dealing with waste management. With 'Lixo que nao e Lixo' the city established complementary currencies to reward people for separating their organic and non-organic recyclable wastes and bringing them to waste stations, where they can be exchanged for public transport tickets, food, and school-books. 'Cambio Verde' is a programme where citizens receive locally grown, organic, healthy foods in exchange for their recyclable waste or can buy them at 30 percent cheaper prices than in regular stores. This way, the city combines waste management and promotes healthy food consumption at the same time.



One of the first 'eco-cities' to be constructed, **Masdar City, United Arab Emirates** was envisioned as an environmentally sustainable New Town, using state-of-the-art technologies to aim for carbon neutrality in a country powered by petroleum profits. Masdar planners Foster and Partners designed both passive and active energy solutions for the New Town, including building-mounted solar panels, shaded pedestrian walkways, narrow spaces to capture prevailing winds, an electric 'pod' transport system, and water conservation techniques. These innovations were ambitious and ground-breaking, and while Masdar has not grown to be the carbon-neutral city that was promised, it remains an inspirational example of how a New Town can function as a laboratory for experiments aiming for new standards, rather than repeating what has been done before.

(Photo: R. Keeton, 2015)



## 6. Infrastructure and mobility for all, from the start

New Towns are usually located at a short distance from their 'mother city' but still programmatically connected when it comes to work and services. Strong and diverse transportation connections are therefore essential. Many New Towns begin phased development with housing construction, leaving public transport for a later moment, and usually this has proven to be a mistake. The provision of public transport within the city and to surrounding cities from the immediate start of development is a main factor in the success or failure of New Towns. Without good and efficient mobility options the image and attraction of the New Town will suffer in a way that is hard to overcome at a later stage. To combat this, services, amenities, road infrastructure, and public transport must be provided and should be initiated before housing becomes available. Various constructions have been developed to support this approach, such as temporarily reduced rents for early service providers.

Transport and mobility plans should be an integral part of the urban design and overall territorial plans, connecting the density and programme to the availability of transit options (commonly called transit-oriented development, or TOD). The urban plan should promote a wide range of mobility options and not prioritise cars over other transit types. It should include mass transit options such as trains, trams, or buses, and encourage slow traffic by providing distinct routing for carts, bicycles and pedestrians. Increasing the diversity of transport options makes mobility safe, efficient and accessible for a wider range of users.



# Busway

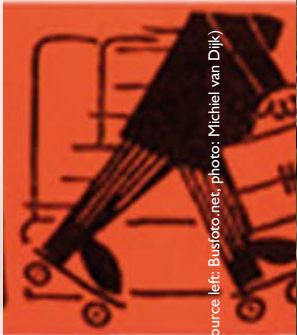


ices are ONE MAN OPERATED and equipped with a remarkably simple device designed for your bus service.  
e on your way sooner because when you pay there are no tickets to wait for.  
your help – please have the correct fare ready up fellow passengers. So remember the th

se, have  
y before



estination  
into box.  
money to  
can be  
box.



source left: Busfoto.net; photo: Michiel van Dijk

Both the masterplans of **Almere, NL** (1976) and **Runcorn, UK** (1967) were designed on the basis of a separate bus lane. With this experimental basis, public transport became the fundament and the structuring element of the masterplan. It connects all local centres and the stops are at a short distance, so no inhabitant ever has to walk more than 5 minutes (400 metres). The bus lanes are separated from car and bicycle traffic and have priority at intersections, which makes their itinerary more reliable and efficient. That way, the bus becomes competitive to a journey by car.



(Photo: ©Ralf Rolletschek / rolletschek.at)

The capital of **Austria**, Vienna, is preparing itself for a large increase of inhabitants and has started to develop **Aspern Seestadt**, (Aspern Lake City) on the north bank of the Danube. To make this mixed use development attractive for its 20,000 future residents and many businesses, Vienna invested heavily in a metro line and station, which were ready when the first inhabitants arrived. Now the metro offers a comfortable transport to all layers of society and a 25 minute ride to downtown Vienna as well as to the Slovakian capital Bratislava.







The city of **Milton Keynes, UK**, is mostly known for its invention of the car-based grid structure. But it was also designed with an experimental bicycle-network: in the vast green areas, safely separated from the car traffic by underpasses and viaducts, a 273 kilometers long network stretches to all corners of the city. Though well suited for leisure it can be argued however that the Redways (named after the colour of their tarmac) are not ideally laid out for functional commuter needs.

## 7. Use a blue-green infrastructure as the central framework

New Towns often treat their underlying landscape as a *tabula rasa*. This omission can contribute to (unintentional) environmental destruction. It can also make New Towns more vulnerable to the effects of climate change, which are becoming increasingly visible in the form of droughts, floods, and natural disasters. It is critical to consider the specific opportunities and limitations offered by individual sites, especially in areas facing rapid urbanisation or located near water systems. A solid backbone of (green) open spaces and a (blue) water network can provide a robust and distinctive organisational framework for a New Town.

According to UN-Habitat's urban design principles, green spaces should account for 30 percent of total area and offer safe, quality public spaces that are open and accessible to all. Green spaces should be multifunctional areas for social interaction and cultural exchange. This network should underpin every New Town design by combining ecology, flood prevention, and water retention with public space and leisure.

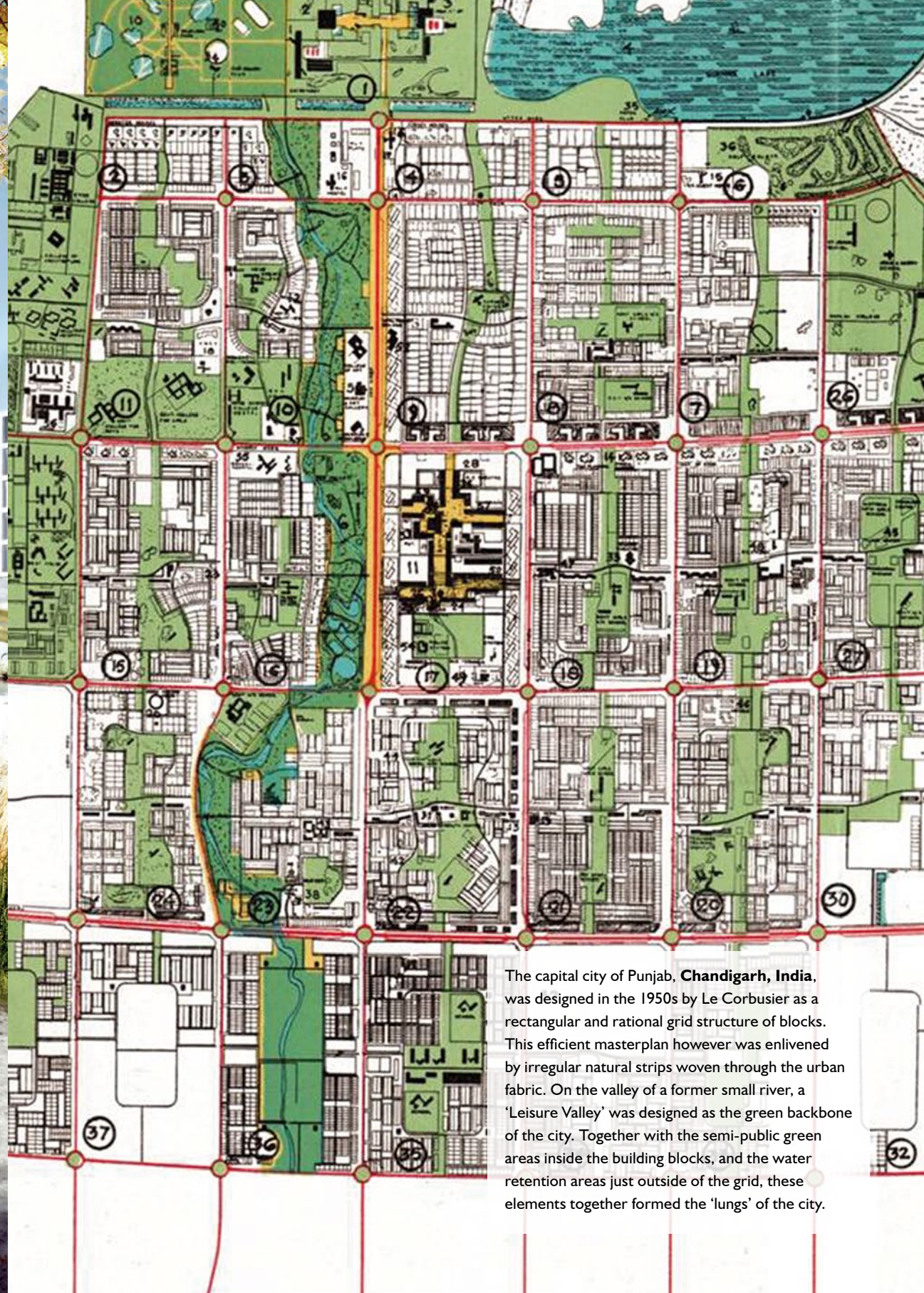
Spatial planning (where to build) and urban design (how to build) are powerful instruments to increase a New Town's resilience. Any urbanisation puts a burden on local resources and environmental conditions, and increases the demand for water. This can result in competition (with industry and agriculture) for limited natural resources, and it may also increase waste, pollution, the risk of flooding, and depletion of non-renewable groundwater. The scarcity of drinking water, wastewater treatment, and the ecological quality of aquatic ecosystems in any New Town and its immediate surroundings are therefore important considerations for the design of an urban plan.





The backbone of **Vinge, Denmark**, a new development of 370 ha that is expected to have 20,000 inhabitants and 4000 jobs when fully built, consists of green and blue landscape. This elongated ecological zone connects all the different housing neighbourhoods. While providing structure and handling rainwater, it also offers spaces for leisure and roads for slow traffic, combined with collective services, shops, and schools. Even the train station is connected to this central green zone.

(Visualization: Henning Larsen Architects and POWER)



The capital city of Punjab, **Chandigarh, India**, was designed in the 1950s by Le Corbusier as a rectangular and rational grid structure of blocks. This efficient masterplan however was enlivened by irregular natural strips woven through the urban fabric. On the valley of a former small river, a 'Leisure Valley' was designed as the green backbone of the city. Together with the semi-public green areas inside the building blocks, and the water retention areas just outside of the grid, these elements together formed the 'lungs' of the city.



Surrounding foodsheds should be protected and growth should be structured so that it does not threaten productive agricultural land. **Nakuru, Kenya** is an example of a city successfully combining urban and rural fabrics. Nakuru is organised like an African version of Frank Lloyd Wright's Broadacre City, a grid structure with houses on large plots of land. The town provides urban amenities but also protects and preserves adjacent agricultural fields, ensuring the town's continued food security as it grows.

(Photo: S. Routs, 2015)



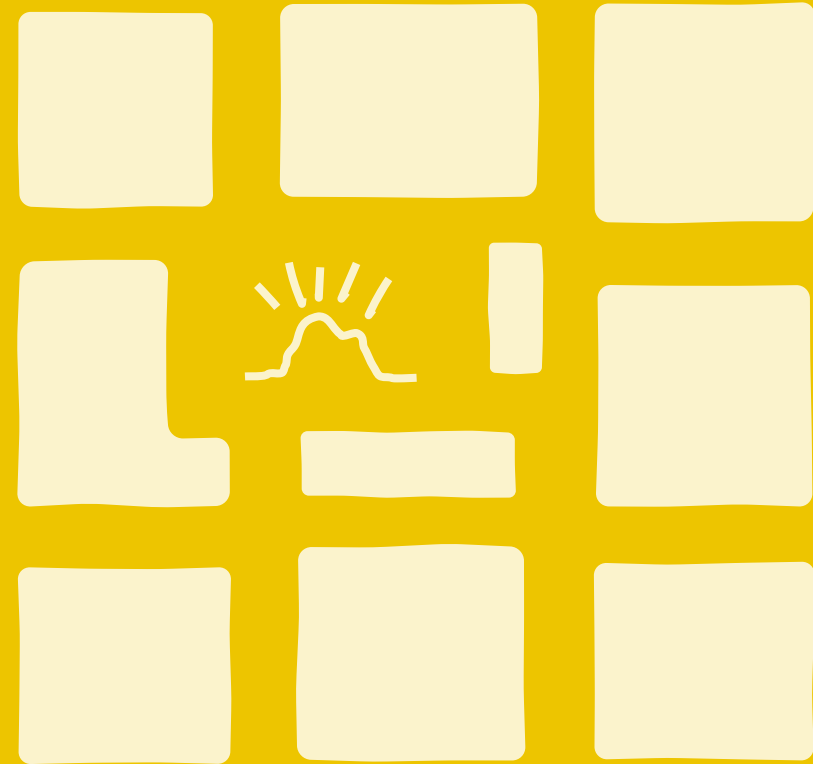
(Photo: R. Keeton, 2017)

Climate change and variability will create extreme situations in the African context and urban planning must address and mitigate these threats. Long-term impacts of climate change (flooding, desertification, etc.) should be reflected in design decisions. Water retention and release are critical issues for any urban area. Excessive rainfall can cause flooding when surfaces are unable to absorb water. Residents at **BuraNEST, Ethiopia** planted a eucalyptus forest adjacent to the New Town. This acts as a natural sponge, absorbing water as well as holding soil in place to prevent landslides and erosion.

# 屋面雨水收集利用示意



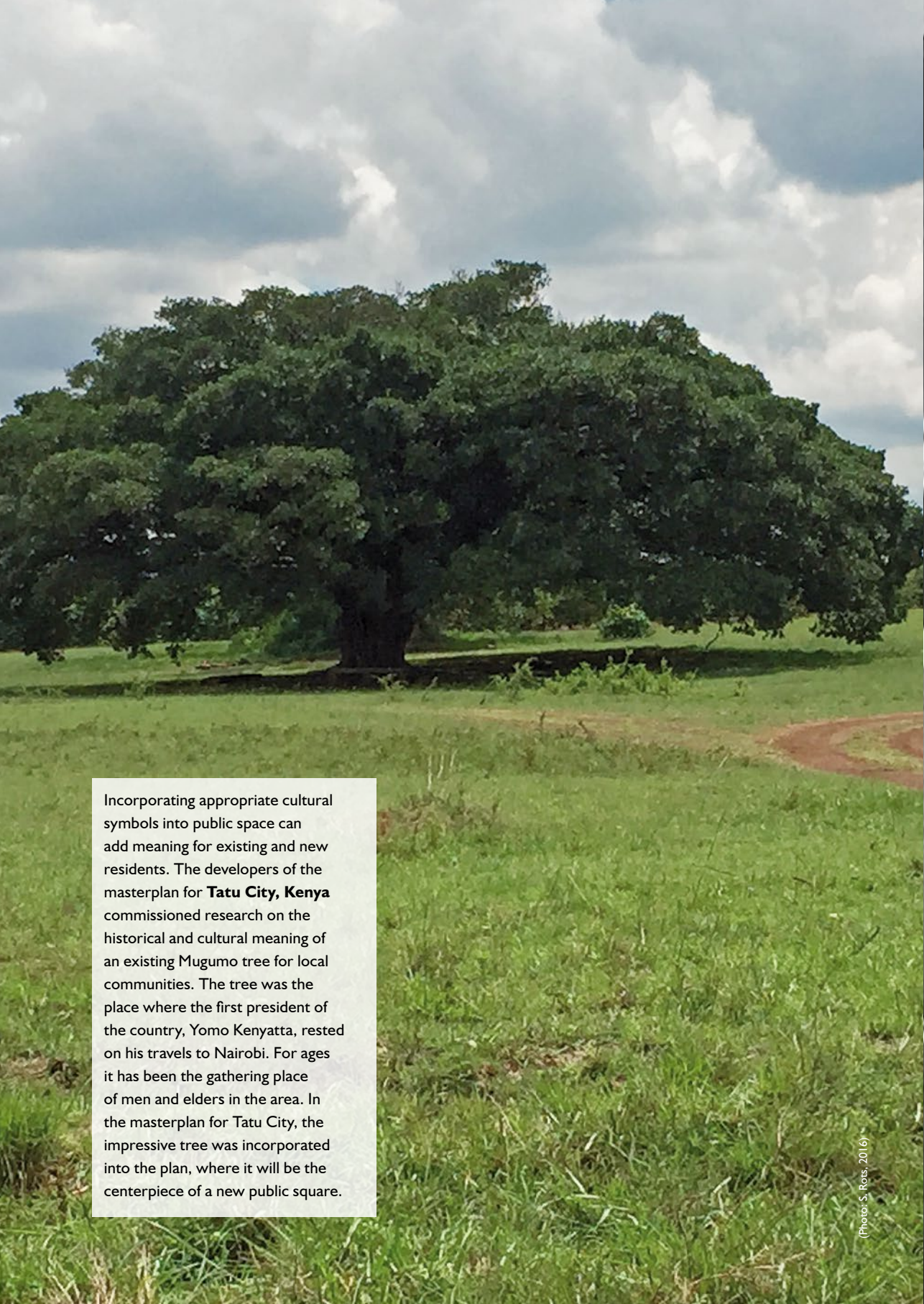
In **Tianjin Eco-city, China**, designers have developed innovative water catchment plans and preserved existing wetlands. Connected green spaces in the New Town act as urban 'lungs'. This combination of high-tech and natural systems allows the New Town to respond effectively to heavy rainfall and extreme weather conditions.



## 8. Incorporate local cultural heritage(s)

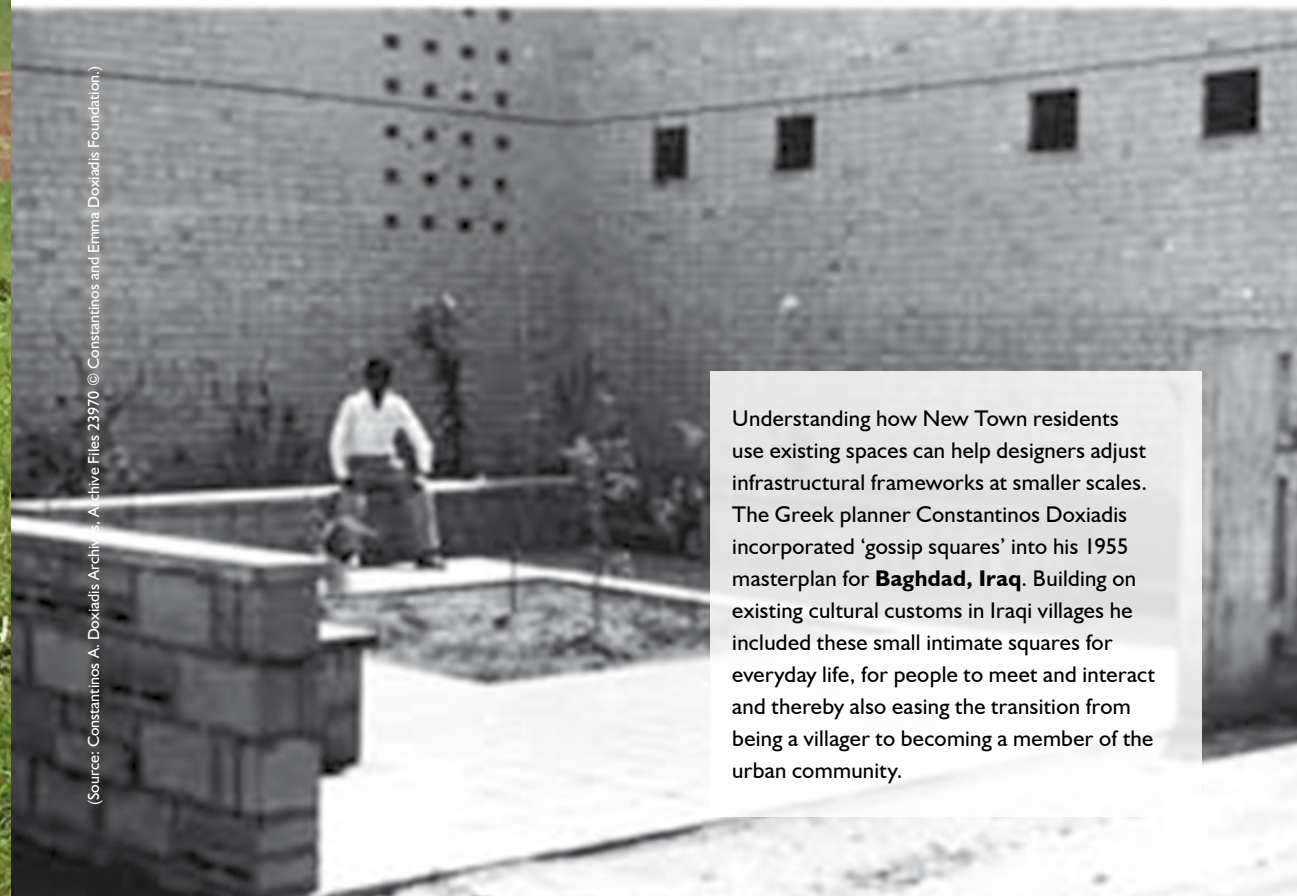
Many contemporary New Towns are developed by international companies with limited knowledge of the local context. This can result in New Towns that use generic urban models and architecture and miss opportunities to provide more vibrant and authentic urban environments. Alternatively, embracing local heritage has the power to stimulate the inclusion of more groups of people, and increase the connection between people and place. Heritage can be architectural monuments or natural landmarks; it can also be local habits and histories or local building techniques and traditions.

Cultural heritage, whether tangible or intangible, is an enrichment in the development of any New Town. Incorporating heritage can help create unique and authentic environments that people can identify with, and that are instantly recognizable. Cultural assets of local populations should also be integrated in plans and researched throughout the planning process. This supports the development of both identity and community. Spiritual connections to sacred spaces (waterways, trees, etc.) should be well-understood, respected, and celebrated. No-go sacred spaces should be zoned appropriately. Customary laws, social norms, and taboos should be researched and accommodated through design.



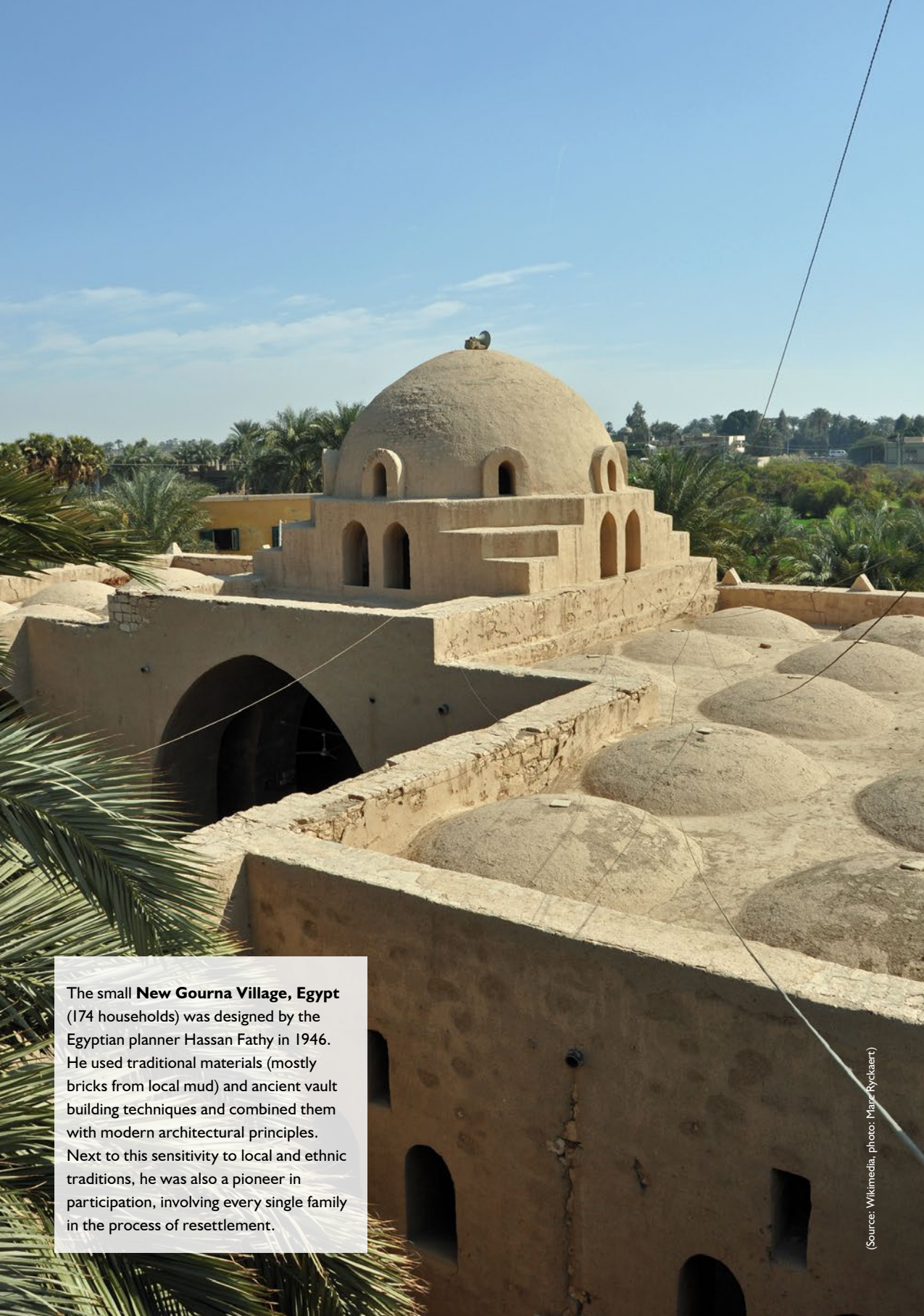
Incorporating appropriate cultural symbols into public space can add meaning for existing and new residents. The developers of the masterplan for **Tatu City, Kenya** commissioned research on the historical and cultural meaning of an existing Mugumo tree for local communities. The tree was the place where the first president of the country, Yomo Kenyatta, rested on his travels to Nairobi. For ages it has been the gathering place of men and elders in the area. In the masterplan for Tatu City, the impressive tree was incorporated into the plan, where it will be the centerpiece of a new public square.

(Photo: S. Rots, 2016)



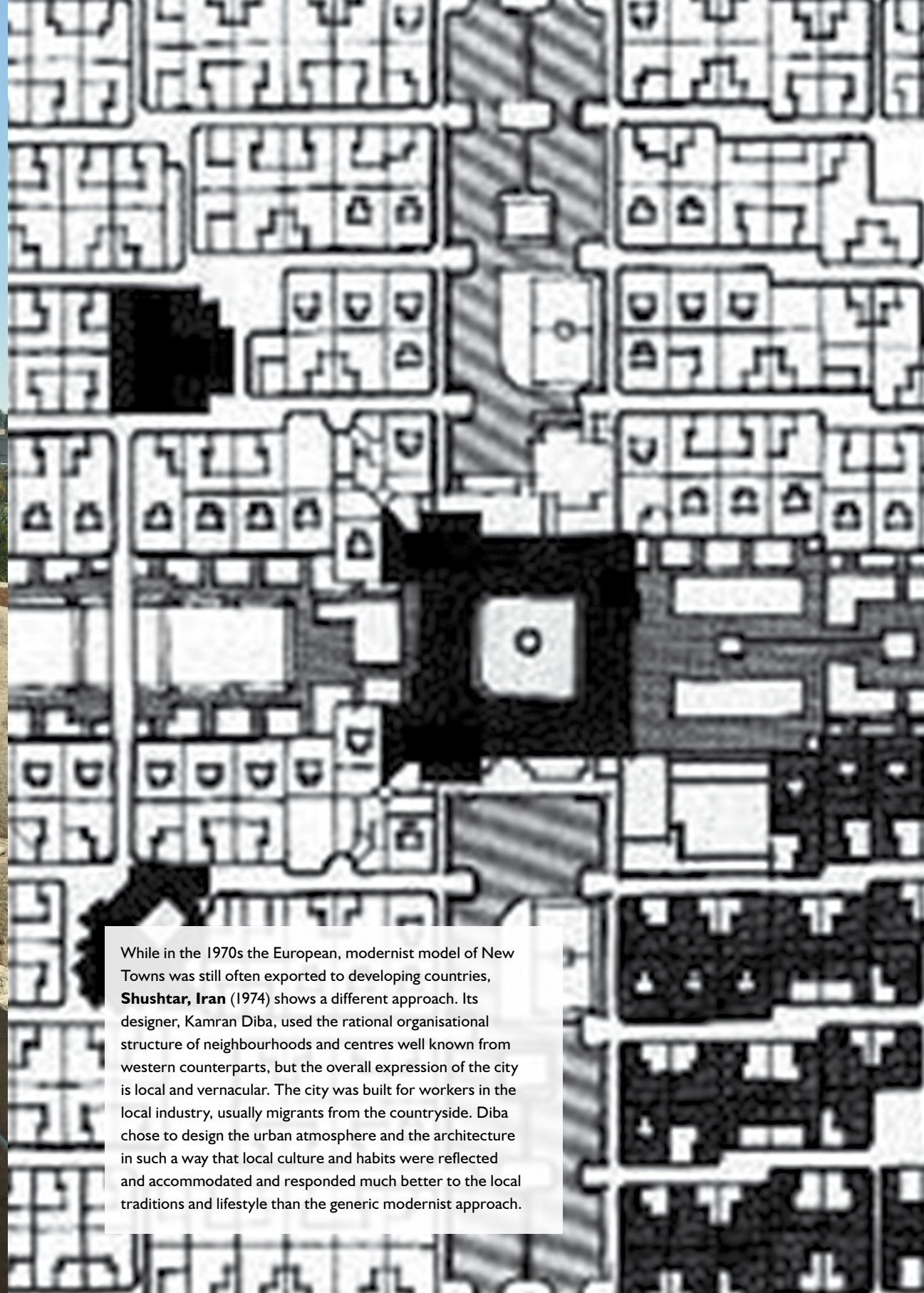
(Sources: Constantinos A. Doxiadis Archive, A Hive Files 23970 © Constantinos and Emma Doxiadis Foundation.)

Understanding how New Town residents use existing spaces can help designers adjust infrastructural frameworks at smaller scales. The Greek planner Constantinos Doxiadis incorporated 'gossip squares' into his 1955 masterplan for **Baghdad, Iraq**. Building on existing cultural customs in Iraqi villages he included these small intimate squares for everyday life, for people to meet and interact and thereby also easing the transition from being a villager to becoming a member of the urban community.



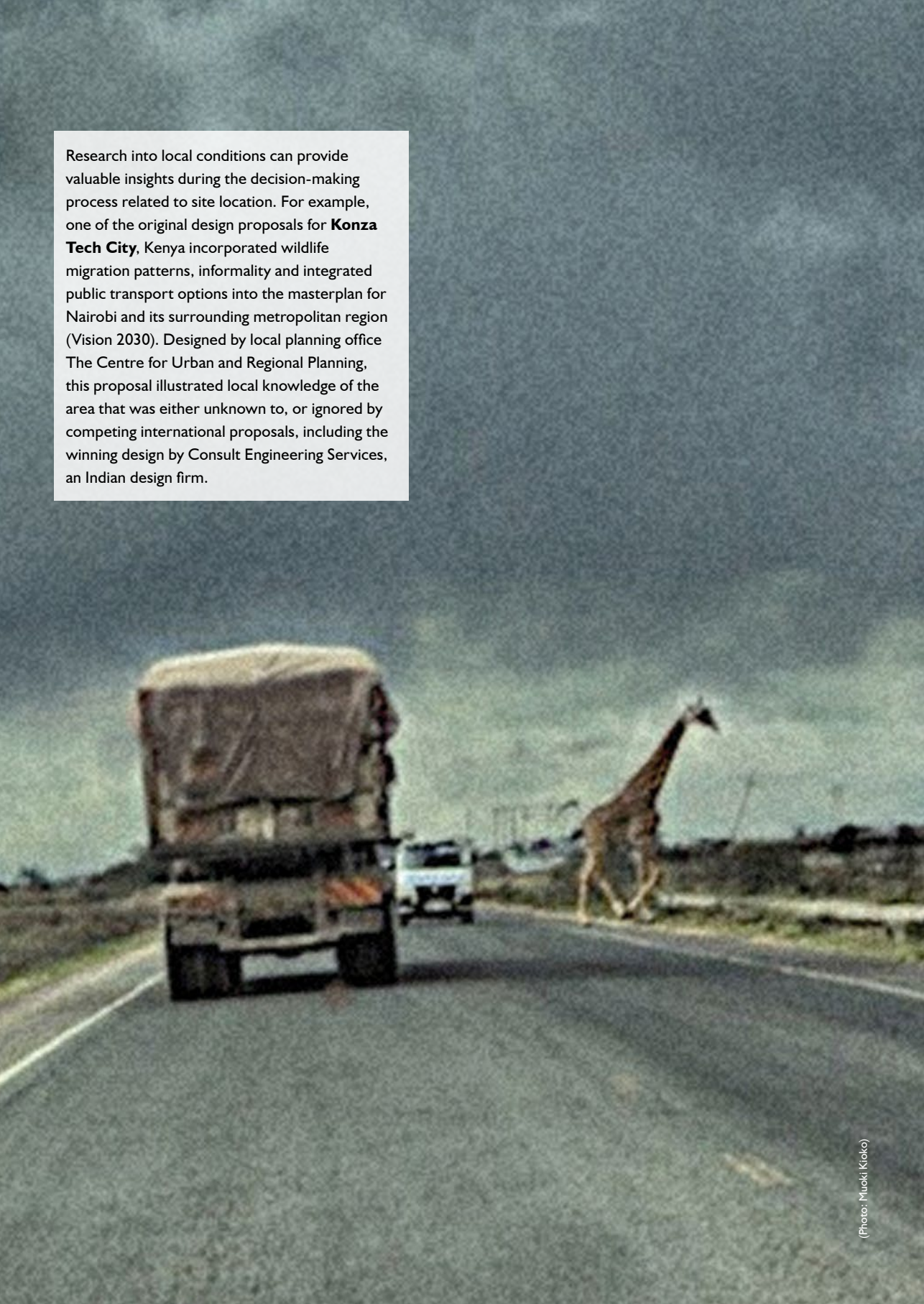
The small **New Gourna Village, Egypt** (174 households) was designed by the Egyptian planner Hassan Fathy in 1946. He used traditional materials (mostly bricks from local mud) and ancient vault building techniques and combined them with modern architectural principles. Next to this sensitivity to local and ethnic traditions, he was also a pioneer in participation, involving every single family in the process of resettlement.

(Source: Wikimedia, photo: Marc Ryckaert)



While in the 1970s the European, modernist model of New Towns was still often exported to developing countries, **Shushtar, Iran** (1974) shows a different approach. Its designer, Kamran Diba, used the rational organisational structure of neighbourhoods and centres well known from western counterparts, but the overall expression of the city is local and vernacular. The city was built for workers in the local industry, usually migrants from the countryside. Diba chose to design the urban atmosphere and the architecture in such a way that local culture and habits were reflected and accommodated and responded much better to the local traditions and lifestyle than the generic modernist approach.

Research into local conditions can provide valuable insights during the decision-making process related to site location. For example, one of the original design proposals for **Konza Tech City**, Kenya incorporated wildlife migration patterns, informality and integrated public transport options into the masterplan for Nairobi and its surrounding metropolitan region (Vision 2030). Designed by local planning office The Centre for Urban and Regional Planning, this proposal illustrated local knowledge of the area that was either unknown to, or ignored by competing international proposals, including the winning design by Consult Engineering Services, an Indian design firm.



(Photo: Muoki Kikoko)

## 9. Combine top-down and bottom-up

New Towns by definition share a largely top-down approach, with a fixed hierarchical relationship between the government or private party developing the city and the residents who live there. These cities are based on masterplans that often regard the site as a clean slate, depicting surrounding areas as a white void. In reality, a *tabula rasa* simply does not exist: there is always an underlying landscape, and farmers, nomads, or other residents can usually be found on or near the site. To become more resilient and fair, and to unleash the vital dynamics that can season a new urban area, New Towns should provide for a more inclusive and participatory approach. To that end, existing villages or (temporary) communities using the development site should be respected as pre-existing elements of the plan. The plan should actively prevent illegal and unfair displacement of people.

The first phases of a New Town are often managed by large organisations. This is generally a heavily top-down period. To encourage more democratic opportunities for public participation, New Towns should move towards municipal governance as soon as possible. This allows for more representative governance, and a greater diversity of feedback loops for urban managers and planners. Early on, there should be room for many voices: residents' committees should be representative and engagement should be encouraged.

European and American New Towns have shown that after a few decades they can become too vulnerable when dependent on just one institutional owner or developer. During the course of the city's development it will benefit from residents' involvement and private building, economic, and cultural initiatives. The planning process should take this into account and provide the opportunity for more stakeholders to become part of the process of making a new city.





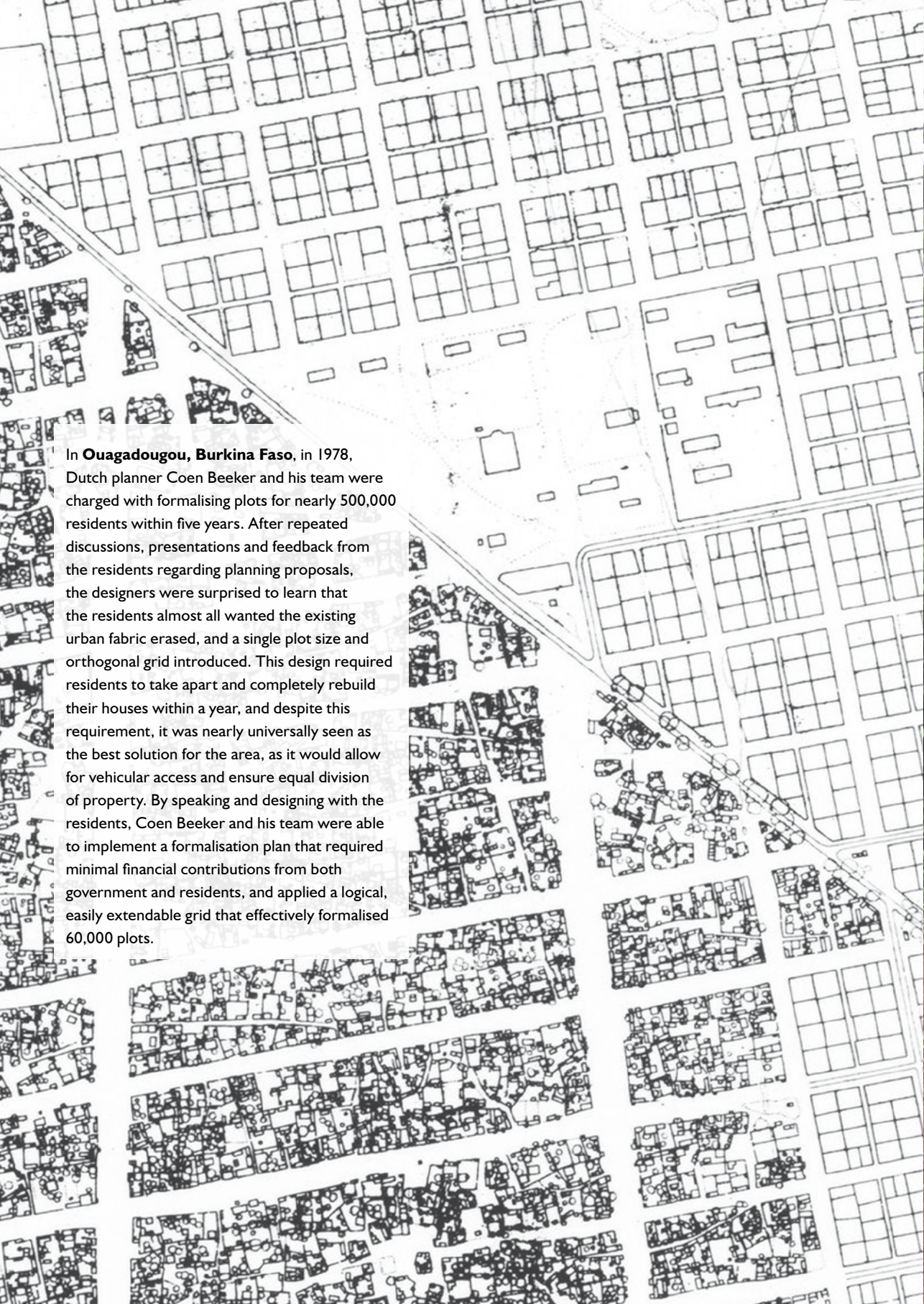
**Almere, NL**, is experimenting with a complete reversal of roles in which the city is expanded not by top down plans but by the actions of its citizens. The development of a greenfield neighbourhood in the polder, called Oosterwold is part of a city-wide programme to become greener and more participatory. Contrary to almost all other New Towns, there is no masterplan underlying this development, only a set of rules, developed by the Dutch architecture firm MVRDV. Safeguarding the green and ecological character of the area, the rules provide for an organic development of the area in which residents not only build their own housing, but also cooperatively construct roads and other shared infrastructures.

(Source: MVRDV)



The settlement of **Dandora, Kenya**, started with 6000 plots built in 1977 with the aid of the Worldbank. Thirty years later, the streets, parking spaces, gutters and squares of Dandora had disappeared under a vast layer of sand, mud and ashes from the burning of waste at the nearby dump site. Crime rates and unemployment soared, the streets were filthy and dangerous. In 2014, started by local youths calling themselves Mustard Seeds and later developed in the Dandora Transformation League, the young generation initiated a clean-up operation, uncluttering drainage and unearthing courtyards, making public space attractive and safe again (crime is down by 70 percent) and creating community and jobs while doing so. Using workshops with residents and professionals, their success has attracted NGO's and foreign support, making it possible to strengthen and expand the programme.

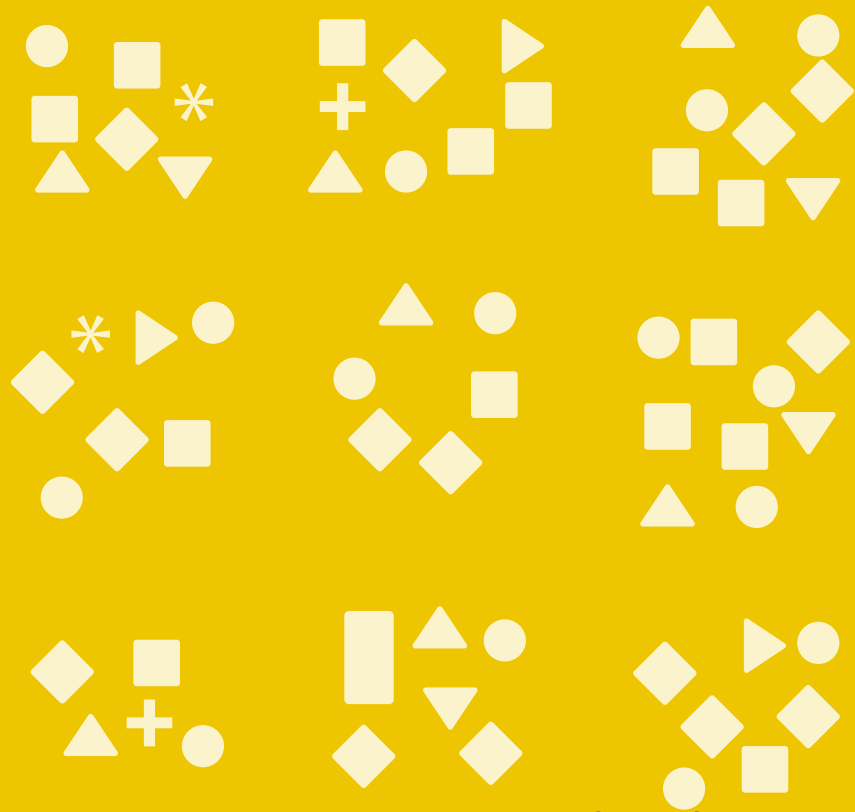
(Source: placemakers.nl)



In **Ouagadougou, Burkina Faso**, in 1978, Dutch planner Coen Beeker and his team were charged with formalising plots for nearly 500,000 residents within five years. After repeated discussions, presentations and feedback from the residents regarding planning proposals, the designers were surprised to learn that the residents almost all wanted the existing urban fabric erased, and a single plot size and orthogonal grid introduced. This design required residents to take apart and completely rebuild their houses within a year, and despite this requirement, it was nearly universally seen as the best solution for the area, as it would allow for vehicular access and ensure equal division of property. By speaking and designing with the residents, Coen Beeker and his team were able to implement a formalisation plan that required minimal financial contributions from both government and residents, and applied a logical, easily extendable grid that effectively formalised 60,000 plots.



**Alamar, Cuba**, is a satellite city of Havana built during the 1970s. This prefab city started out as the embodiment of the communist spirit but fell into decay after the collapse of the Soviet Union in 1989. However, with original masterplans for the central zone left unexecuted, Alamar has unintentionally grown into a unique case of urban planning, intertwined with urban agriculture. Out of necessity, citizens have developed the open plots in the centre into large scale urban gardens (*organoponicos*) which now provide for 95 percent of all vegetables consumed in Alamar, while bringing social cohesion to the communities. Closely connected to the local universities and knowledge organisations, this organic agricultural practice is considered exemplary by international experts.



## 10. New Towns need diversity

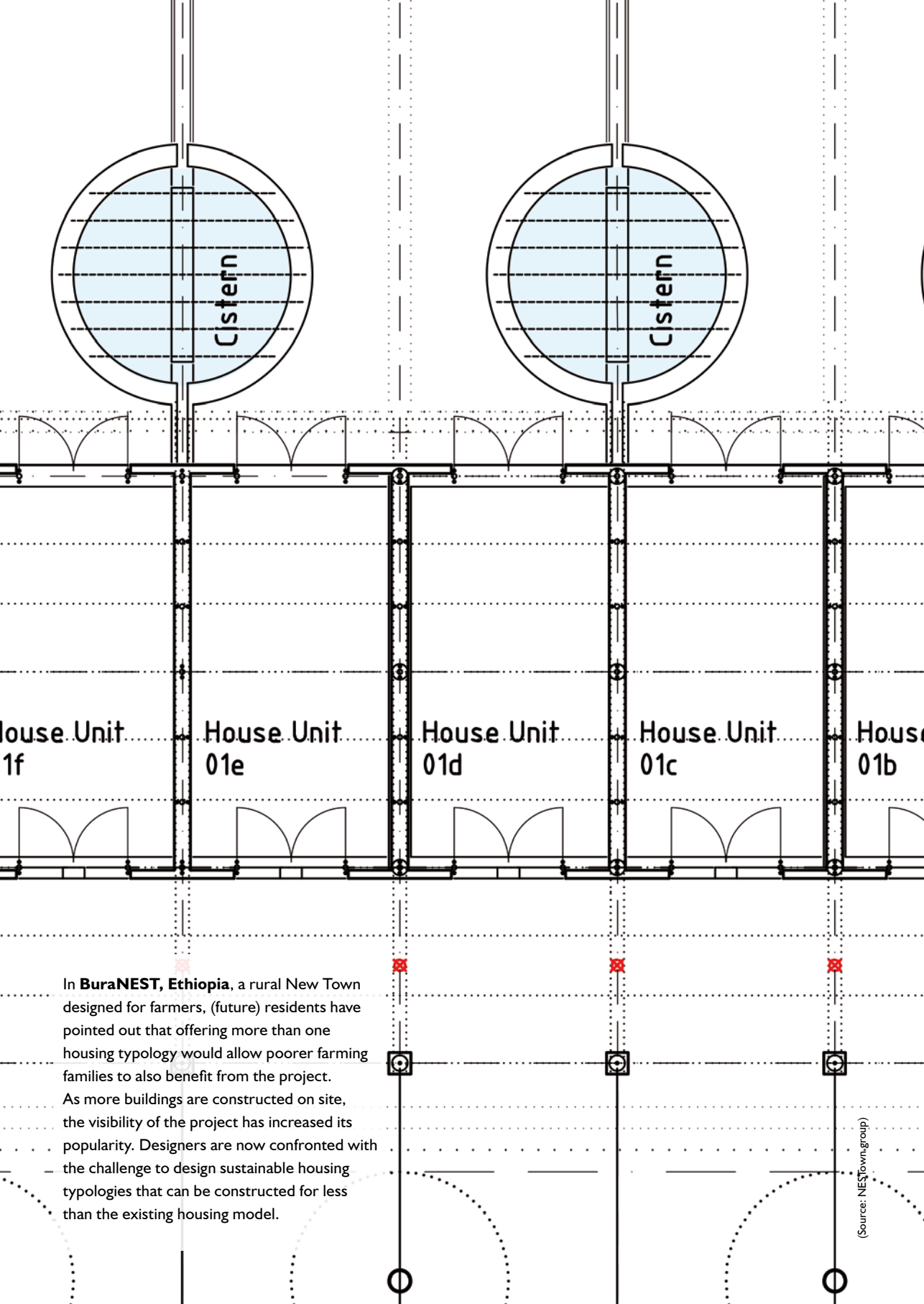
When cities are diverse in their programme, economy and population, they are more resilient, more just, and less vulnerable. Cities that have been built for only one economic group become vulnerable to small fluctuations. Cities that have been built with extremely limited housing types for only a few target groups do not offer enough choice for healthy long-term development. Cities grow and mature because residents stay (and change), and new residents migrate to the city. There must be room for these residents to live, work, and establish their place in the culture of a city.

Cities should be built for a representative cross-section of society, including low-income and no-income groups. There is a need for new financial models to achieve inclusiveness and for policies to guarantee this. Especially in Africa, urban planning must incorporate and facilitate incremental settlements, since they will make up the largest part of urbanisation, and because spatial segregation is a threat to societal cohesion. Developing different sites to varying degrees of completeness can offer financially attractive options to multiple income groups. The spatial components of the local 'informal' economy (i.e. kiosks, transport options, markets, etc.) should also be accommodated in spatial plans and engaged as a productive part of urban life.



(Photo: R. Keeton, 2016)

**Kilamba, Angola**, has responded to economic realities by drastically lowering the price of housing in response to public outcry. In 2013 then-President dos Santos nearly halved prices, cutting the cost of the smallest apartment from USD 125,000 to USD 70,000. That intervention allowed more middle-class Angolans access to the New Town, and improved the mix of residents. Despite this, Kilamba remains out of reach for the vast majority of Angolans, and an informal settlement has grown concurrently with the New Town along its borders. The economic interdependencies between the two communities are complex and manifold, but the separation of physical spaces remains clear.



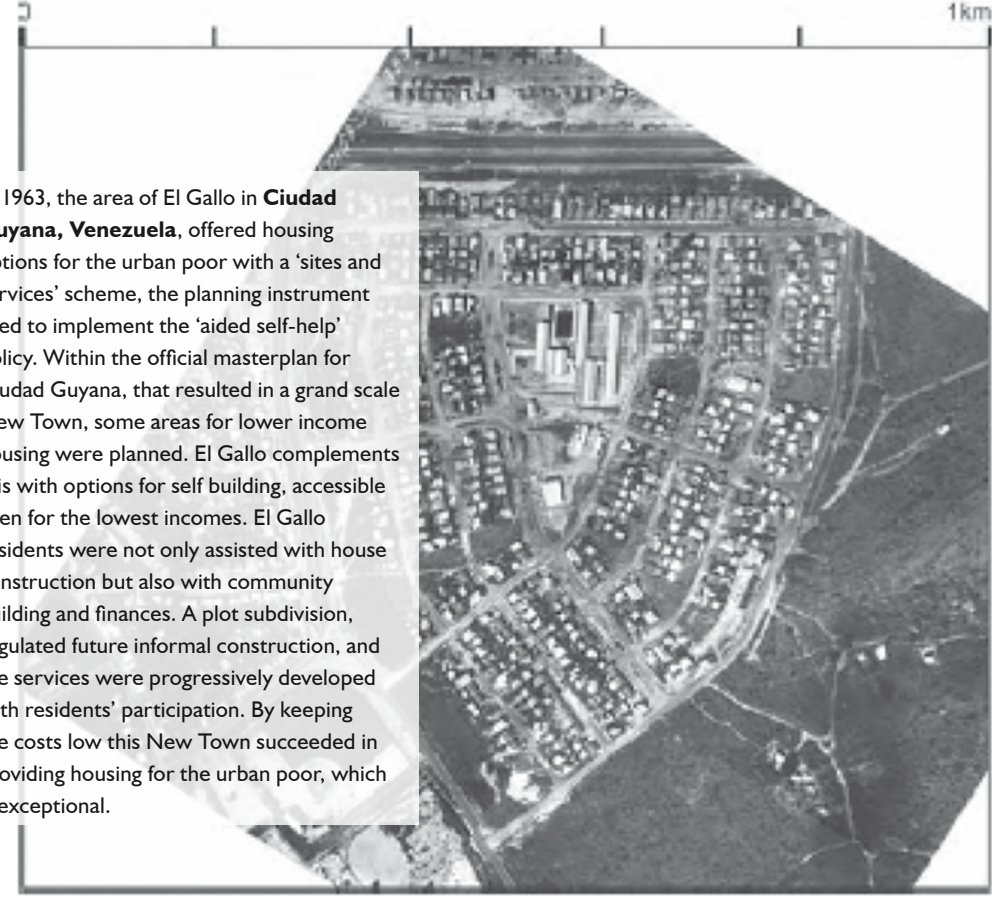
In **BuraNEST, Ethiopia**, a rural New Town designed for farmers, (future) residents have pointed out that offering more than one housing typology would allow poorer farming families to also benefit from the project. As more buildings are constructed on site, the visibility of the project has increased its popularity. Designers are now confronted with the challenge to design sustainable housing typologies that can be constructed for less than the existing housing model.

(Source: NESTowngroup)

1964



1967



In 1963, the area of El Gallo in **Ciudad Guyana, Venezuela**, offered housing options for the urban poor with a 'sites and services' scheme, the planning instrument used to implement the 'aided self-help' policy. Within the official masterplan for Ciudad Guyana, that resulted in a grand scale New Town, some areas for lower income housing were planned. El Gallo complements this with options for self building, accessible even for the lowest incomes. El Gallo residents were not only assisted with house construction but also with community building and finances. A plot subdivision, regulated future informal construction, and the services were progressively developed with residents' participation. By keeping the costs low this New Town succeeded in providing housing for the urban poor, which is exceptional.

(Source: Caminos H., Turner J.F.C, Steffan J., Urban Dwelling Environments, an elementary survey of settlements for the study of design determinants, M.I.T. report no. 16, MIT Press, 1969)



In **Spijkenisse, The Netherlands**, a large-scale investment in the reinforcement of social and cultural structures has transformed the city centre into the 'living room' of the New Town. The town centre, built in the 1980s, lacked attractiveness and atmosphere; in the 2000s the city decided to rebuild it. Crucial elements in the social and cultural programme of the centre are the new theatre and the new library. These both have a distinctive architecture, and were designed by top-class architects. They are not only cultural centres, but also serve as places for different groups of inhabitants to meet and have become iconic landmarks for Spijkenisse.

(Photo: Daria Scapola and Sjin Brakkee)



In **Shenzhen, China**, the urban villages are the place where new migrants from the countryside, workers but also young professionals, find a cheap place to live surrounded by an abundance of urban amenities such as shops, restaurants and services. Located in the middle of new high-rise developments, these services also attract office workers and function as lively urban centres. While before, Shenzhen regarded these urban villages merely as overcrowded and unwanted, the positive urban value of these areas is becoming increasingly recognised.

(Photo: M. Provoost, 2018)

**Milton Keynes, UK** was built in 1967 for a largely homogeneous population, but has since grown into a culturally and ethnically diverse city. Since its beginnings, grassroots volunteer cultural organisations have been active in building Milton Keynes's vibrant art scene, and it is these groups that the City Council is now turning to as a way of strengthening cultural exchange and social cohesion. Their initiatives include the MK Museum, the annual Art in the Park events, and the African Diaspora Day. These residents' initiatives, supported by the city, bring people together and shape MK's cultural identity.





# INTER- NATIONAL NEW TOWN INSTITUTE

[www.newtowninstitute.org](http://www.newtowninstitute.org)  
[info@newtowninstitute.org](mailto:info@newtowninstitute.org)

