



Greentown Curaçao

Quick scan Development and Economic Outlook

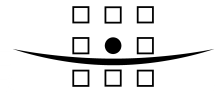
Stichting Greentown

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ROYAL HASKONING

**HASKONING NEDERLAND B.V.
BUILDINGS**

Barbarossastraat 35
Postbus 151
Nijmegen 6500 AD
The Netherlands
+31 (0)24 328 42 84 Telephone
024 360 95 66 Fax
info@nijmegen.royalhaskoning.com E-mail
www.royalhaskoning.com Internet
Arnhem 09122561 CoC

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Drafted by Drs. Paul Jansen & prof. dr. Jacques van Dinteren
Additions and editorial advice by Matt Weinstein, MIT

Checked by Drs. Paul Jansen

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Approved by Prof. dr. Jacques van Dinteren

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MANAGEMENT SUMMARY

GreenTown presents a once-in-a-lifetime opportunity for economic and community development in Curaçao, with the potential to make Curaçao a leader in sustainability for the Caribbean, fundamentally improve the island's position in the regional economy and, in so doing, create 21st-Century opportunities for its people. This can be realised by transforming the present refinery site into a new urban area, knotting Punda and Otrobanda together on this spot

At present, PDVSA's lease at the Isla Refinery site expires in 2019, and physical redevelopment on the site is unlikely to begin before 2020. Nevertheless, it is vital that Curaçao's decisionmakers have a better understanding of the economic possibilities for the site, as they prepare to make a decision about its future use. Therefore, the GreenTown Foundation has chosen to have carried out a market scan, accompanied by some preliminary ideas for a development strategy. These first estimates and ideas are presented in this report. Findings were based on relevant data and through extensive interviews with relevant authorities and a range of stakeholder groups on the island.

This report reveals that dismantling the almost 100 year old refinery would propel Curaçao for the second time in the Caribbean's limelight and making it once more one of the wealthiest countries in the Caribbean.

Preconditions are very important

To be able to start such an economic development process, preconditions are very important, such as:

- *A sound economic strategy to secure growth:* GreenTown must be part of a national growth strategy for the island, aimed at attracting both firms and people to Curaçao, and to stop the attrition and out-migration that have been common in recent decades.
- *Sound governance and Dutch law:* the new Curaçao government will have to work on the image of Curaçao as a reliable nation with regard to economy and government. The ability of foreign firms to establish and manage their operations under Dutch Law is a major advantage for business in Curaçao, and will attract firms that are wary of dealing with fully autonomous governments elsewhere in the region.
- *An integrated approach, strong community involvement and a new name:* GreenTown should be integrated with adjacent neighbourhoods on all sides, with road, transit, and water links. Considering GreenTown as an integrated part of the community also means that the people of Curaçao must be involved in the development of ideas for this new part of Willemstad, and that language must not be a barrier to participation in this process. A first step would be to give the GreenTown proposal a new Creole name that represents the site's role and potential, and works well with 'Punda' and 'Otrobanda'.
- *Controlled competition with Oostpunt:* Curaçao's government and planning agencies will have to investigate the island's overall growth potential and assess ways the developments of Oostpunt and Greentown can complement one another, particularly with regard to housing. Whereas Oostpunt has a focus on beach and oceanfront tourism, GreenTown will propose to build a mixed-use center more appropriate to

meeting the needs of island residents, businesses, industries, and visitors who are drawn to Willemstad's nearby core.

- *Tourism sector*: while GreenTown is not an appropriate site for resort hotels, it can support and diversify Curaçao's tourism sector in other ways, with marinas, small hotels, and a modern cruise terminal; shopping and commercial areas; and a large entertainment and cultural facility, which the island is currently lacking.
- *Environmental concerns*: in order for GreenTown to become a viable destination for anyone, a range of environmental factors will need to be investigated and remediated. Furthermore, the island must engage in sustainability planning, to determine how its future energy needs can be met. Here, GreenTown can potentially be a tremendous asset, combining energy-efficient construction methods with widespread renewable energy development to become a net producer of energy for the island, rather than a net consumer.

Development outlook

The development of Greentown will only be possible if there is a clear perspective for growth. Here we encounter the chicken or the egg causality dilemma "which came first, the chicken or the egg?" In this case: what do we need first? Population growth to be able to offer employees or a growth in the demand for employees to attract households. As GreenTown is a long term development there will be an alternation of both.

Population

In depth discussions and workshops with decision makers on the island suggest that growth perspectives exist, if the fore mentioned preconditions are fulfilled. Two possible scenarios for population growth can be distinguished, both of which assume a combination of natural and external growth (especially immigration of Curaçaoans living abroad). The first scenario - low growth - projects that population patterns continue stagnating as they have in recent decades, and that out-migration of young Curaçaoans results in a modest net population growth for the island of 0 to 35,000 people by 2040. In the high-growth scenario, the island's population could increase by as many as 75,000 people - or roughly 50% - over the next three decades. It is expected in both scenarios that the number of households will increase in the coming years, and household sizes will decrease.

We feel that a 30-year growth projection of 25,000-35,000 year-round residents-an island-wide increase of at least 5,000 households-would be a conservative prognosis for Curaçao, and could be a realistic basis for GreenTown. These numbers could be considerably larger, if the island government succeeds in stanching out-migration of young Curaçaoans to Europe and North America, and/or lures expatriates home with the prospect of improved employment opportunities.

Housing

While 0 to 75,000 is a large range for population growth, the assumption of at least some increase in the number of households present on the island will result in demand for an increased number of housing units. In addition, much of Curaçao's working population is currently living in housing that is substandard and not energy efficient, and many residents would be interested in moving to energy efficient, accessible, affordable

housing, were it to become available. GreenTown should focus on filling gaps in the existing housing market, addressing different segments in the market and introducing a housing 'product' unavailable elsewhere on the island. There is a clear demand for low-income and middle-income units (60% of the current households). GreenTown can also fill an as-yet-unfilled market niche, providing a safe environment for 'active' retirees who are looking for a neighborhood with high-quality urban amenities in the near vicinity, including medical facilities and cultural destinations. Elder housing - which is currently limited in Curaçao to a handful of largely antiquated facilities, and was mentioned in several interviews as a strong prospect for GreenTown - could include both condominium and rental units, with health care and 'assisted living' services available on-site for those who need extra support. In addition to senior housing, GreenTown would present an opportunity for urban residential development at a range of price points, including high-end, luxury waterfront condos, as well as affordable and middle-income units. With proper zoning, high-rise residential buildings could anchor GreenTown's commercial districts, creating an urban residential niche that is currently unavailable on the island.

Labour market

Curaçao has a relatively small economy, but is considerably more diversified than many similar islands in the region. Curaçao's main industries at present include tourism, international financial services, shipping and logistics. It was clear from our interviews that there isn't a clear future for the island's labour market, which continues to draw both skilled and unskilled workers from abroad, while leaving native Curaçaoans without options that they're ready and willing to pursue. Long-term labour solutions will likely involve a combination of workforce development initiatives for the island population, and immigration incentives to attract workers with the right skill sets to move to the island. However, given that companies prefer to invest in places where the required talent and personnel are already available, training and education programs can be seen as a precondition for successful development.

Economic growth sectors

Employment growth will be stimulated by the perspectives in several economic sectors:

- Tourism: there are good prospects for the creation of tourist-oriented marinas along the GreenTown waterfront, along with high-end restaurants, shopping facilities and services to accommodate yacht tourists. But the most promising and exciting initiative for GreenTown is the prospect of a world-class entertainment centre, taking advantage of Curaçao's existing reputation for a strong music and arts scene. This could be combined with a conservatory campus with training facilities for music, dance, and performing arts, which would be unique in the Caribbean and could be a regional draw.
- The marine industry: there is a demand for hurricane-safe yacht storage in the Caribbean that storm-prone islands further north can't fill, and good opportunities for European yacht-builders to establish maintenance facilities in Curaçao. A precondition for this industry cluster would be a clean, oil-free Schottegat.
- The drydock industry: this sector is looking to expand its existing operations and can be relocated to the to-be-rehabilitated site of the asphalt lake. Their existing site in Schottegat could be reconstituted in turn as an expansion for the adjacent Curinde free trade zone.

- The shipping industry, for whom Curaçao is emerging as a major transshipment port for goods being transported between the Pacific and Atlantic Oceans via the Panama Canal. The current available space for container storage along Schottegat is limited, but demand is considerable, and is likely to grow with expansion of Panama Canal trade following the canal's soon-to-be-completed modernization. In addition to the container port, this area could accommodate a broad range of other related harbour-bound industrial activities.
- The retail sector, including shopping malls and ground-level shops in mixed-use development. Retail could include a high-end waterfront cluster to appeal to yacht tourists; duty-free retail to appeal to all tourists; and a range of neighborhood retail to appeal to GreenTown residents.
- The financial sector is geographically dispersed throughout Greater Willemstad, without any discernible spatial concentration of offices. The construction of a new office cluster at GreenTown - with high energy-performance and resource-efficiency standards for buildings and landscaping - would provide an opportunity to reinforce the GreenTown concept while complementing and expanding the island's commercial real estate market.

There also may be opportunities for creating a high-quality health services cluster at GreenTown, or for a new academic campus geared toward sustainability research and development, both of which would have potential to become major 21st-century job centers for Curaçaoans while attracting faculty and clients from abroad.

Socio-economic effects

Employment

According to our analysis, the Isla site alone should be able to accommodate between 6,460 and 12,010 new jobs, assuming low-rise commercial and industrial development. An additional 4,000 jobs could be accommodated at adjacent sites on the east side of Schottegat, assuming a drydock relocation to the site of the asphalt lake and Curinde free zone expansion into the existing dock facilities. This would result in a net creation of roughly 10,000 to 16,000 new jobs in the study area, not including indirect impacts on the rest of the island's economy, which would likely be stimulated by GreenTown. Moreover, the disassembly and environmental remediation of the refinery site will require hundreds or perhaps thousands of temporary workers over a period of several years, including many positions that could be filled by current PDVSA and Isla-related contractor employees, who already know the refinery site and its installations well. Many of these workers could also be retrained to work on GreenTown's construction and related infrastructure projects, which would provide a massive direct and indirect positive economic stimulus for Curaçao, likely spanning a decade or more.

Real estate values in downwind neighborhoods

Areas downwind from the refinery - including Buena Vista, Wishi, Marchena, Habaai, and Piscadera, among others - could expect to see increased property values and new development, as a result of improved air quality. It is also possible that other areas near the refinery would see improved property values due to the removal of blighted industrial facilities, and their replacement with a vibrant new neighborhood and public amenities.

Impact of tourism expenditures

GreenTown would have a dramatic impact on tourism on the island, both through the direct impact of tourist facilities at GreenTown and tourist development in downwind areas - such as Piscardera and Blauwbaai - where refinery related pollution has stifled development.

Tax revenues for the government

Currently PDVSA pays negligible taxes at the Isla site, resulting in a major loss of potential revenue for Curaçao's government. GreenTown's industries and residential development will result in increased long-term tax revenues for the government of Curaçao, in addition to short-term tax revenues that will be generated by GreenTown's construction.

Image and competitive power

If GreenTown is developed according to plan, its sustainable architecture and cultural events could transform Curaçao's image for the better, and put the island more prominently on the world map.

National pride for a new country

The development of a new, modern core for Willemstad - to complement the historic core in Punda and Otrobanda - will strengthen Curaçao's nascent national pride.

Restricting sprawl In Banda Arriba and Banda Abou

Recent trends have shown a boom in new housing construction in Curaçao - the result of smaller households and second-home buyers from abroad - even as the island's year-round population has remained stagnant. By concentrating future growth as infill in already-developed areas of Willemstad - utilizing brownfield sites such as GreenTown - Curaçao can preserve its remaining countryside and restrict traffic-inducing sprawl.

Development strategy

Rather than being divided into parcels and sold to the highest bidder, the entire project should be developed by a single entity, ideally a government corporation that could function as a public-private partnership.

Flexibility and an integrated planning approach will be crucial for the success of this project, as will a priority on community engagement and interaction. In practice, such flexibility would entail keeping a range of development options open for as long as possible. This would also entail focusing on dynamic trends and scenarios, rather than static figures and statistics. This type of work requires in-depth collaboration between and among a broad range of stakeholders, including government agencies, businesses, organized labour, institutions, community organizations, and the general public. By working together in an interdisciplinary fashion, planners and stakeholders can consider a range of alternatives jointly, producing a set of planning scenarios; in turn, an interdisciplinary team of market specialists, concept developers, and designers can integrate these scenarios to develop a strategic set of contingencies for the project plan. The resultant strategic GreenTown Plan - outlined in the final project proposals - will offer the highest level of certainty, by combining as many opportunities for success as possible.

In this report a short description is given of such a flexible planning process, stressing the importance of socio-economic and urban development scenarios to be able to cope with changes and opportunities.

In conclusion

GreenTown is an extraordinary opportunity to transform the Isla Refinery Site - currently a source of blight and pollution, and a net drain on Curaçao's long-term economic prospects - into the engine of the island's 21st century economy, and a new, mixed-use core for Greater Willemstad.

In order to realize GreenTown's potential, the island must commit to supporting the project, and to creating stable economic and political conditions on the island to ensure the project's successful development.

Once developed, GreenTown has strong potential to lead to a further broadening and strengthening of Curaçao's economic and social development, and to establish the young island nation as a regional leader in sustainable development in the Caribbean and beyond.

1 WILLEMSTAD NOBO: PUNDA I OTROBANDA KONOPÁ

1.1 Background and aim of this report

In the early 1900 Curaçao counted many unemployed. There was poverty. Curaçao was in need of new activities that would stimulate economic growth, generate new income and create thousands of jobs. The colonial board decided to allow Shell to build, what became the largest Shell refinery in the world. It placed Curaçao on the map. Curaçao became one of the wealthiest islands in the Caribbean. Déjà vu, already seen, some will acclaim, when looking at sustainability plans made by the GreenTown Foundation.

At present, PDVSA's lease at the Isla Refinery site expires in 2019, and physical redevelopment on the site is unlikely to begin before 2020. Therefore there is no use to carry out a detailed feasibility study at this moment. However, it is vital that Curaçao's decisionmakers have a better understanding of the economic possibilities for the site, as they prepare to make a decision about its future use. Therefore, the GreenTown Foundation has chosen to have carried out this market scan, and has the intention to conduct targeted functional market studies in the future, when development is nearer at hand. Furthermore, some preliminary ideas for a development strategy will be presented in this report.

This report will reveal that dismantling the almost 100 year old refinery, and knotting Punda and Otrobanda together on this spot would propel Curaçao for the second time in the Caribbean's limelight and making it once more one of the wealthiest countries in the Caribbean. In this quick scan the possible socio-economic impact of the proposed GreenTown development at the Isla Refinery site in Curaçao is addressed, providing in-depth background and projections of GreenTown's potential impact in the context of Curaçao's employment and broader social and economic structures. The study includes an assessment of existing conditions of the site and on the island, opportunities and likely sectors, and a discussion of necessary preconditions for a successful GreenTown development. Findings were based on relevant data and through extensive interviews with relevant authorities and a range of stakeholder groups on the island (Annex 1).

In this chapter, we will outline the GreenTown Concept and discuss our research methodology, before continuing on to present our findings, and propose development alternatives in the following chapters.

This is also a good place to point up that GreenTown is just a working title. This development needs a Creole name that represents the site's role and potential, and works well with 'Punda' and 'Otrobanda'.

1.2 The Greentown Concept: focussing on a sustainable city

The GreenTown Curaçao Foundation is a not-for-profit organization with two objectives:

- alleviate unemployment and
- create more income and wealth to make Curaçao economic independent.

The foundation will do this by redeveloping the refinery's site on and around Schottegat

with a clean, zero-emission city using sustainable energy. As currently conceived, GreenTown would transform Isla and Schottegat from a blighted industrial area into an economically vibrant residential, commercial and industrial area, at the heart of Willemstad.

Based on research and discussions with stakeholders, the GreenTown Curaçao Foundation had previously defined the following five sectors as primary economic activities for GreenTown:

- Marine Industry
- Harbour Industry
- Entertainment & Tourism
- Recycling Industry
- City Services

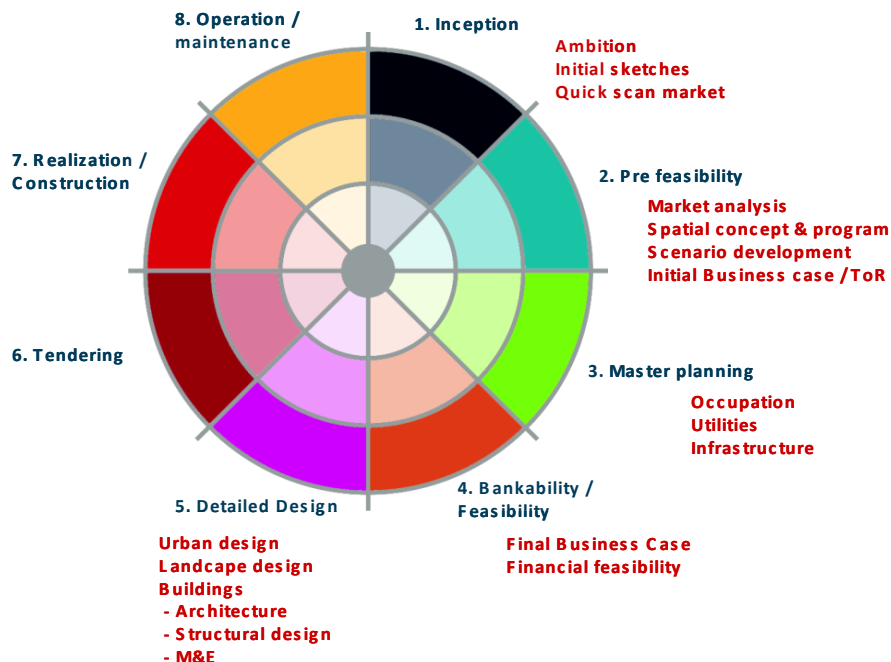
The development can also create more space for existing sectors near Schottegat that are facing space constraints and looking to expand, including the dry dock, the container terminal, and the free trade zone (Curinde).

1.3 This quick scan and the overall development process

The life-cycle of any project can generally be divided into eight stages, regardless of its size and complexity (see figure 1.1). With each next stage, the level of detail of all relevant aspects increases, whether technical, environmental, or financial:

1. **Inception.** The lifecycle of a development project begins with its inception and the setting of a certain ambition, which must then be proven feasible to the extent that further investigation is warranted.
2. **Pre-Feasibility.** Feasibility is assessed in several steps, the first of which is a preliminary Market Scan
3. **Master Planning.** If a project is found to be feasible, it is outlined in a Master Plan, which should include alternatives and variables, and a clear set of objectives, opportunities and constraints to what can be achieved.
4. **Bankability and Financial Feasibility.** The next crucial step towards realizing a project is to prove its bankability and obtain commitments from investors and financiers. This requires testing of the robustness of the investment, apart from providing proof of technical feasibility and sustainability.
5. **Detailed Design.** Once commitments have been obtained from investors and financiers, a detailed design plan can be made.
6. **Tendering.** The detailed design allows for tendering the project to contractors.
7. **Realization and Construction.** Contractors then build the project under the developer's supervision, ensuring that requirements are met during construction.
8. **Operation and Maintenance.** After completion of the project, it is generally handed over to another entity that is then responsible for the operation and maintenance of the project.

Figure 1.1: the life cycle of a project



At this moment we are in the initial phases of the process as sketched above. Detailed functional market studies, financial feasibility analysis, and remediation and environmental studies need to be carried out in the coming years, as PDVSA prepares to vacate Isla and GreenTown's development prospects become more imminent.

1.4 Methodology

The data used for this scan have been collected in various ways, including desk research of available reports and trend analysis. We also conducted roughly 20 interviews with a broad range of individual and organizational stakeholders, including companies currently operating in Curaçao; local fishermen in Schottegat; island residents; and the Prime Minister, Gerrit Schotte (see Annex).

2 PRECONDITIONS ARE VERY IMPORTANT

2.1 A sound economic strategy to secure growth

The proposed scope of development at GreenTown is ambitious, and has the potential to give an enormous boost to Curaçao's economy and quality of life at all levels of the socioeconomic spectrum. But in order for the project to succeed, it must be part of a national growth strategy for the island, aimed at attracting both firms and people to Curaçao, and to stop the attrition and out-migration that have been common in recent decades. In practice, this will involve a combination of business development strategies, the growth and retention of the indigenous population, and immigration and return-migration. Attention has to be paid to education and workforce development in Curaçao, to ensure that the island has a trained and competitive labour force.

An important question for Curaçao's government concerns the island's well-documented "brain drain," and how people who have left Curaçao to seek education and employment opportunities abroad can be inspired to return home. These expatriates are a vital national resource for Curaçao, and will be key to the island's future development.

A comprehensive economic strategy for the island should include the following four elements:

- Workforce Development, Education and Training
- Small Business Incubation and Start-Ups
- Tourism Diversification and Infrastructure Development (see also paragraph 2.4)
- Finance and Foreign Investment

One of the best ways to stimulate an organic growth of the economy is to stimulate start-ups. Especially when this is combined with education and training a sound basis for future employment growth can be established. As the development of Greentown can offer space for probably 25,000 – 35,000 inhabitants and 10,000 – 16,000 jobs¹ much more will be needed to stimulate growth. Investments by foreign firms will be essential. It will be necessary to investigate the competitive power of Curaçao within the Caribbean and Latin America, as well as its potential as a regional center for high-growth industries, including sustainable energy production, service industries, and transportation and shipping. While these in-depth investigations of economic outlook and competitiveness will be helpful, the most important factors to draw in foreign investors are stable economic conditions and a reliable government.

2.2 Sound governance and Dutch law

As Curaçao now has an autonomous position within the Dutch Kingdom the new Curaçao government will have to work on the image of Curaçao as a reliable nation with regard to economy and government. The frequent scandals that have plagued the island over the past few years threaten to have a negative impact on attracting foreign investors, particularly to a new market. We also feel that the ability of foreign firms to establish and manage their operations under Dutch Law is a major advantage for

¹ Including the asphalt lake area and the Free Trade Zone.

business in Curaçao, and will attract firms that are wary of dealing with fully autonomous governments elsewhere in the region.

2.3 An integrated approach, strong community involvement and a new name

In our opinion it is very important that Greentown will not be seen as a development that stands on its own. It is essential that GreenTown develop as a new commercial and residential core for Willemstad, to complement the historic core in Punda and Otrobanda, rather than compete with it. Additionally, GreenTown must not be a “stand alone” development, but rather should be integrated with adjacent neighborhoods on all sides, with road, transit, and water links.

Hence the name Greentown is not the best one from this perspective. Considering GreenTown as an integrated part of the community also means that the people of Curaçao must be involved in the development of ideas for this new part of Willemstad, and that language must not be a barrier to participation in this process. A first step would be to give the GreenTown proposal a new Creole name that represents the site’s role and potential, and works well with ‘Punda’ and ‘Otrobanda’.

2.4 Controlled competition with Oostpunt

If a strong growth will be effective, there is no guarantee that this ‘drops down’ in Greentown, as developments in Oostpunt can be a real threat for Greentown. However Greentown has considerable advantages over Oostpunt, for example its centrality and easy access to the rest of Greater Willemstad. GreenTown can be made accessible to residents and tourists alike by improved public transport to adjacent neighborhoods and ferry links to Punda and Otrobanda, which would be much less expensive than the major road improvements required to accommodate increased traffic flows to and from Banda Arriba, which already suffers heavy congestion at peak commute hours.

Curaçao’s government and planning agencies will have to investigate the island’s overall growth potential and assess ways the two developments can complement one another, particularly with regard to housing. Whereas Oostpunt has a focus on beach and oceanfront tourism, GreenTown will propose to build a mixed-use center more appropriate to meeting the needs of island residents, businesses, industries, and visitors who are drawn to Willemstad’s nearby core.

2.5 Tourism sector and environmental concerns

At present, Curaçao’s tourism sector is small by Caribbean standards, and tourism is considered a tremendous potential growth industry for the island, particularly if the refinery ceases operations and downwind areas cease to suffer adverse effects of air pollution. While GreenTown is not an appropriate site for resort hotels, it can support and diversify Curaçao’s tourism sector in other ways, with marinas, small hotels, and a modern cruise terminal; shopping and commercial areas; and a large entertainment and

cultural facility, which the island is currently lacking. Obviously, tourism and second-home development will require more detailed studies, to determine what the market can support. With regard to cruise tourism, while the largest ships will be barred from GreenTown because of the height of the Julianabrug and the limited turning radius at Fort Nassau, small and mid-sized boats will be able to enter Schottegat without dredging or bridge replacement.

However, in order for GreenTown to become a viable destination for anyone, a range of environmental factors will need to be investigated and remediated. It is of great importance that the government and PDVSA publish reliable information on pollution at and around the Isla site, including both soil contamination and water quality in Schottegat. Furthermore, the island must engage in sustainability planning, to determine how its future energy needs can be met. Here, GreenTown can potentially be a tremendous asset, combining energy-efficient construction methods with widespread renewable energy development to become a net producer of energy for the island, rather than a net consumer.

2.6 Exogenous variables

Finally, GreenTown's development depends in part on exogenous variables that are largely outside the island's control, including the present global economic crisis; the recent decline in Curaçao's financial sector; and the development of competitive power of surrounding islands and countries. However, it's notable that lean years can be an excellent time to engage in in-depth project planning, so that projects are 'shovel-ready' when the market rebounds. And, with proper financing, they can be good times to invest in large infrastructure projects, taking advantage of low interest rates and suppressed labour costs, and providing economic stimulus through the labour-intensive building trades.

3 DEVELOPMENT OUTLOOK

3.1 Population

Current situation: 145,000 inhabitants

Currently the population of Curaçao is approximately around 140,000 – 150,000. Exact figures are not available and in various interviews it was stated that the total population is probably a lot bigger than this number. A figure, mentioned several times, of about 50,000 unregistered immigrants and second-home owners from the Netherlands living on the island. So the actual population at this moment might be around 200,000, but the figure we will use as a baseline population estimate for our projections is 145,000 in 2011.

Perspective: growth is expected: but how much, and from where?

Populations can grow due to births (known as natural growth) and due to immigration (known as external growth). By analyzing macro-economic trends, available population data, and expert opinions from stakeholders, we developed two possible scenarios for population growth, both of which assume a combination of natural and external growth.

The first scenario - low growth - projects that population patterns continue stagnating as they have in recent decades, and that out-migration of young Curaçaoans results in a modest net population growth for the island of 0 to 35,000 people by 2040. In the high-growth scenario, the island's population could increase by as many as 75,000 people - or roughly 50% - over the next three decades. It is expected in both scenarios that the number of households will increase in the coming years, and household sizes will decrease.

While 0 to 75,000 is a large range for population growth, the assumption of at least some increase in the number of households present on the island will result in demand for an increased number of housing units. In addition, much of Curaçao's working population is currently living in housing that is substandard and not energy efficient, and many residents would be interested in moving to energy efficient, accessible, affordable housing, were it to become available. We feel that a 30-year growth projection of 25,000-35,000 year-round residents-an island-wide increase of at least 5,000 households-would be a conservative prognosis for Curaçao, and could be a realistic basis for GreenTown. These numbers could be considerably larger, if the island government succeeds in stanching out-migration of young Curaçaoans to Europe and North America, and/or lures expatriates home with the prospect of improved employment opportunities.

Given the considerable time needed to cease operations at the refinery, dismantle the facilities, and remediate the site, it will be at least a decade before GreenTown will enter into the construction phase, and the project may not be complete until 2040 or beyond. Therefore, we project that new housing units at GreenTown would be coming online in sync with growth in household formation on the island.

3.2 Labour market

Existing conditions: diversified economy

Curaçao has a relatively small economy, but is considerably more diversified than many similar islands in the region. Curaçao's main industries at present include tourism, international financial services, shipping and logistics. The unemployment rate has dropped slightly in recent years, with roughly 10,000 people actively seeking work. Most available jobs are in tourism or in technical jobs, whereas job seekers are more focused on the island's relatively small commercial sector. Many of Curaçao's job seekers have low educational levels and limited language skills, while better-educated workers have often left the island for other countries with higher earning potential, particularly the Netherlands. Many in this last group - known in Dutch as "Curaçaoenaars" - would be willing to move back to Curaçao with the right economic opportunities on the island. The population of potential return-Curaçaoenaars is estimated to be between 5,000 and 20,000.

Perspective: workforce development, training and education as a precondition for growth

It was clear from our interviews that there isn't a clear future for the island's labour market, which continues to draw both skilled and unskilled workers from abroad, while leaving native Curaçaoans without options that they're ready and willing to pursue. Long-term labour solutions will likely involve a combination of workforce development initiatives for the island population, and immigration incentives to attract workers with the right skill sets to move to the island. However, given that companies prefer to invest in places where the required talent and personnel are already available, training and education programs can be seen as a precondition for successful development.

3.3 Housing

Existing conditions: a demand for better-quality affordable housing

At present there are approximately 50,000 housing units at Curaçao, with estimated 88% occupancy. However, among these units there is an enormous range in the quality of housing stock. High-end homes - often second homes for part-time or seasonal residents - can be very luxurious and in good condition. But median homes are often in a bad state of repair and made from low-quality materials, and many of the island's poorest people live in homes that lack basic amenities, including sanitation. Maintenance is a common problem, and energy efficiency is also an issue, with many homes poorly-insulated and failing to take advantage of construction methods that could keep homes cool in the tropical heat.

Despite the 12% vacancy rate, there is a shortage of high-quality affordable homes, with 9,000 people showing interest in a recent development in Otrobanda. However, despite the substandard housing stock, rents tend to be relatively high with respect to average income. This impacts housing demand, with many people desiring better-quality housing, but unable to realize these desires, given low household incomes and the affordable housing shortage.

The average household size on the island is 3.3 persons per household, based on official figures showing a population of 145,000 living in 44,000 occupied housing units. It is expected that household size will gradually decline over coming decades, in line with trends seen in other developing economies globally.

At present the law allows new construction to be between one and three stories high 'as-of-right', although it is expected that this will be changed and that higher buildings will be permitted, as Curaçao moves toward 'smart growth' strategies that have been adopted in Europe, North America, and increasingly in Latin America and developed parts of the Caribbean.

The Oostpunt plan is a particular concern, with projections of 10,000 to 19,000 homes to be built there. However, many interviewees felt that Oostpunt is too far away from Willemstad and employment centers to be practical for the average Curaçaoenaar, and that most buyers would likely be second-home owners from off-island. Therefore, Oostpunt would fail to address the existing problems in the housing market, which primarily impact working people who live on the island year-round.

Perspective: affordable housing, mixed-income, and niche market development

Given the current situation and projections for the island's housing market - a glut of luxury housing coming online and a shortage of high-quality affordable units - GreenTown should focus on filling gaps in the existing housing market, addressing different segments in the market and introducing a housing 'product' unavailable elsewhere on the island. There is a clear demand for low-income and middle-income units (60% of the current households), and other developments being built in Banda Arriba and Banda Abou don't focus at these segments. Niche markets with special needs - such as single parents and low-income seniors - could be accommodated in housing that has good access to transit, shopping, schools, and employment. Along the northern and western parts of the Isla site, affordable neighborhoods could be connected to adjacent residential districts, in Rio Canario, Buena Vista, Wishi and Marchena. However, affordable housing is typically not profitable for developers, who would need to supplement low-income units with market-rate units.

Curaçao's present market for retiree housing is focused on low-rise developments for more affluent retirees who are in search of sun, sea, and tranquility - usually far from the center of Willemstad. GreenTown can fill an as-yet-unfilled market niche, providing a safe environment for 'active' retirees who are looking for a neighborhood with high-quality urban amenities in the near vicinity, including medical facilities and cultural destinations. Elder housing - which is currently limited in Curaçao to a handful of largely antiquated facilities, and was mentioned in several interviews as a strong prospect for GreenTown - could include both condominium and rental units, with health care and 'assisted living' services available on-site for those who need extra support.

In addition to senior housing, GreenTown would present an opportunity for urban residential development at a range of price points, including high-end, luxury waterfront condos, as well as affordable and middle-income units. With proper zoning, high-rise residential buildings could anchor GreenTown's commercial districts, creating an urban residential niche that is currently unavailable on the island.

Finally, GreenTown provides an excellent opportunity for the government to combat Willemstad's extensive suburban sprawl with an urban concentration strategy, concentrating new development on infill and brownfield industrial sites in developed areas of Willemstad, and conserving threatened greenspace in Banda Arriba and Banda Abou. The spatial planning of the whole island will be strengthened over the long-term by such a policy, and the Isla site - at the geographic center of Greater Willemstad, with radial road connections to neighborhoods beyond Schottegatweg in all directions, and close proximity by water to Punda and Otrobanda - would be a natural hub for a new, multimodal transport network, that could lessen the island's dependence on private cars for transport.

The worst-case scenario for GreenTown would be if Curaçao's population grows slowly (to 145,000 in 2040) and 19,000 residential units are built at Oostpunt, in which case there may not be demand for housing at Isla (aside from latent demand for affordable units, described above). In an optimal scenario, the population will grow to 220,000 by 2040 and development in Oostpunt is limited to 10,000 units or fewer, which would result in demand for 15,000 homes at GreenTown to house 45,000 people, at an average household size of 3 persons per unit (possibly even more units for seniors, who will in most cases only have 1 or 2 persons per unit).

3.4 Tourism

Existing conditions: a strong growth industry for Curaçao

During the last decade tourism in Curaçao has grown significantly, with the number of visitors doubling since the year 2000. Most tourists come from the Netherlands, although the share of visitors from other European countries and the United States and Canada are increasing. A third market - high-end tourists from Latin America and elsewhere in the Caribbean - is considered by many to be the most promising growth market for Curaçao.

Curaçao is especially attractive for its sun, beaches and possibilities for snorkeling and scuba diving. Like most other industries and settlement, tourism development is concentrated along the island's southern coast. Cruise ships in recent years have added Willemstad as a port of call, and a great deal of development has followed in the historic core of Punda and Otrobanda, the former a UNESCO World Heritage Site, and the latter the location of the cruise docks. However, Curaçao is located at or beyond the periphery of most Caribbean cruise itineraries, and receives far fewer cruise passengers than Sint Maarten or Aruba. Furthermore, most cruise passengers who disembark at Curaçao spend no more than a few hours on land, and spend relatively little money in Willemstad.

Perspective: cultivate niche markets

Curaçao has serious competitors in Caribbean tourism: Aruba, Bonaire, Sint Maarten, Barbados and Saint Lucia, among others. While Curaçao is somewhat cheaper than these other islands, it may have less to offer tourists in terms of the amenities and tourism infrastructure that are typically found in the Caribbean. Overestimated expectations of future growth in tourism are not realistic; simply put, Curaçao will never

have Aruba's beaches, Bonaire's rustic diving culture, or Sint Maarten's verdant volcanoes. However, the resources that Curaçao does have - a diverse and vibrant cultural scene, extraordinary colonial architecture and heritage, and excellent harbours that are sheltered from hurricanes - are significant and unique, and should be cultivated to attract niche markets of tourists.

For GreenTown, the relevant question is what can be developed along Schottegat that broadens the tourism sector and helps the island to be competitive. There will likely be little demand for new hotels in Curaçao after 2020, with up to 3,000 new rooms to be added at Banda Arriba over the next decade, and a threat of oversupply. Any hotels that could be potentially located at GreenTown would be smaller hotels to serve an under-served local market in the center of Willemstad, including business travelers and those interested in the island's cultural life, for whom beach resorts would be inconvenient; however, even these rooms would likely be very limited. Given the number of initiatives on the table, Curaçao's government should look closely at ways to regulate the hotel market.

On the other hand, there are good prospects for the creation of tourist-oriented marinas along the GreenTown waterfront, along with high-end restaurants, shopping facilities and services to accommodate yacht tourists.

But the most promising and exciting initiative for GreenTown is the prospect of a world-class entertainment centre, taking advantage of Curaçao's existing reputation for a strong music and arts scene. The Curaçao North Sea Jazz Festival has shown that there is a strong market on the island for cultural events, but Curaçao lacks appropriate facilities to broaden the scope and frequency of cultural events on offer on the island. GreenTown has already identified investors potentially interested in developing a large performing arts and entertainment centre on a 12-hectare parcel of the Isla site, that could accommodate 25.000 visitors inside and 10.000 outside in the open air. This could be combined with a conservatory campus with training facilities for music, dance, and performing arts, which would be unique in the Caribbean and could be a regional draw.

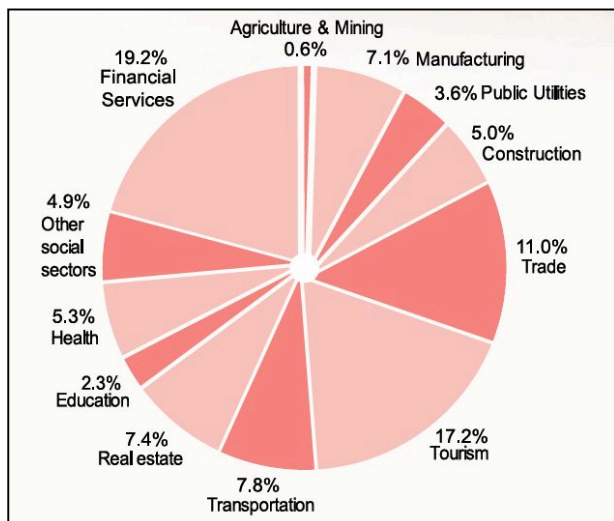
3.5 Other industrial sectors

Existing conditions: a broad spectrum of activities

The chart below shows the composition of Curaçao's present GDP. The three most important sectors - accounting for nearly half of GDP - are financial services, tourism and trade. However, in terms of employment, the most important business sectors are wholesale and retail, real estate and renting, public administration and social security, construction, restaurants and hotels, and health and social work.

For much of the last hundred years, the Isla Refinery has been a key employer and driver of the island's economy. Today the refinery employs about 900 people - a small fraction of Curaçao's workforce - and it is estimated that PDVSA's operations support an additional 900 jobs indirectly, resulting in a net impact of 1.800 jobs.

Figure 3.1: composition of Curaçao's present GDP



Source: Open Arms, 2010

Perspective: developing employment opportunities in diverse fields

The idea of GreenTown is based on the assumption that the Isla Refinery will either be relocated to another site on Curaçao or closed altogether upon the expiration of PDVSA's lease in 2019. It is possible that the plant could close before 2019, as huge upgrades will be needed over the next few years to continue to refine heavy Venezuelan crude to pass tougher standards for oil products in the US market.

Given the assumption of Isla's eventual closure, it is very important that a workforce development program starts as soon as possible to help refinery employees to learn new skills and / or find new jobs. Many Isla employees would be able to remain employed on-site after the closure of the refinery, given the labour-intensive tasks of dismantling the installations and cleaning the area, a process that will take a few years to complete. Likewise, jobs for semi-skilled workers would be plentiful during the construction phases of GreenTown. Once functional, GreenTown would provide a new economic core and center of employment for Curaçao, with industrial uses concentrated along the eastern part of Schottegat and residential and commercial uses to the west.

Promising potential industries along GreenTown's industrial **east side** could include the following:

The marine industry, including yacht maintenance and storage, could employ at least 100 people. There is a demand for hurricane-safe yacht storage in the Caribbean that storm-prone islands further north can't fill, and good opportunities for European yacht-builders to establish maintenance facilities in Curaçao. A precondition for this industry cluster would be a clean, oil-free Schottegat.

The drydock industry, which is looking to expand its existing operations and can be relocated to the to-be-rehabilitated site of the asphalt lake. Their existing site in

Schottegat could be reconstituted in turn as an expansion for the adjacent Curinde free trade zone.

The shipping industry, for whom Curaçao is emerging as a major transshipment port for goods being transported between the Pacific and Atlantic Oceans via the Panama Canal. The current available space for container storage along Schottegat is limited, but demand is considerable, and is likely to grow with expansion of Panama Canal trade following the canal's soon-to-be-completed modernization. In addition to the container port, this area could accommodate a broad range of other related harbour-bound industrial activities.

In the **western part** of GreenTown, the focus would be on neighborhood and community development, with employment centers and commerce interspersed to form mixed-use, multifunctional areas with a walkable, human scale. In addition to housing, this area would include the following employment sectors:

The entertainment sector, including the aforementioned performing arts and cultural center along with professional sports facilities, including a baseball academy, to capitalize on Curaçao's global reputation as a leader in baseball. This cluster would host a broad range of annual festivals, and could attract tourists from around the Caribbean as well as North America, South America, and Europe.

The retail sector, including shopping malls and ground-level shops in mixed-use development. Retail could include a high-end waterfront cluster to appeal to yacht tourists; duty-free retail to appeal to all tourists; and a range of neighborhood retail to appeal to GreenTown residents.

The financial sector is geographically dispersed throughout Greater Willemstad, without any discernible spatial concentration of offices. The construction of a new office cluster at GreenTown—with high energy-performance and resource-efficiency standards for buildings and landscaping—would provide an opportunity to reinforce the GreenTown concept while complementing and expanding the island's commercial real estate market.

There also may be opportunities for creating a high-quality **health services cluster** at GreenTown, or for a new **academic campus geared toward sustainability research** and development, both of which would have potential to become major 21st-century job centers for Curaçaoans while attracting faculty and clients from abroad.

4 SOCIO ECONOMIC EFFECTS

4.1 Primary and secondary effects

When looking into the economic impact of a development it is important to make a distinction between primary and secondary effects. The primary or direct effects consist of the initial round of spending and employment generated by economic activities, such as tourist spending and port industry services. When looking at the secondary effects, a distinction can be made in indirect and induced impacts. The indirect impact is generally defined as all activities in the region which are economically dependent on the primary activity. This includes the effect of labour, services, materials, and other items purchased by firms that supply the direct activities. Similarly, the induced impact includes economic activity that comes from household purchases of goods and services made possible because of wages generated by the primary and secondary economic activities.

Given that GreenTown's development prospects remain more than a decade away - and we know little about what changes in Curaçao's economy will take place in the interim - for the moment we will focus on the primary or direct effects of GreenTown's development for Curaçao's job market.

In the short term, the dismantling of the Isla Refinery, remediation of the site and of Schottegat, and construction of GreenTown would result in thousands of jobs on the island, including opportunities in the building trades for both skilled and unskilled labour. However, as has been seen in recent 'housing bubbles' in the United States and Europe, construction for its own sake is not a long-term employment strategy; one must ensure that there is adequate demand for any commercial and residential real estate that is built, and that the permanent industries created will be able to employ island residents. Therefore, the economic impact of the construction - though important in the short term - is treated as temporary, and not discussed in this analysis. Permanent economic impacts come from residential and commercial development, and tourism-related activity.

4.2 Employment: 10,000 - 16,000 new jobs

Our employment estimates are tentative - given GreenTown's yet-uncertain development prospects - and are based largely on discussions with existing business leaders and potential investors in the project. We have also applied standard developed-world statistics for employment density based on the physical footprint of space proposed for each sector in the GreenTown plan, assuming a certain number of workers per hectare that would be accommodated in GreenTown's commercial real estate.

According to our analysis, the Isla site alone should be able to accommodate between 6,460 and 12,010 new jobs, assuming low-rise commercial and industrial development. An additional 4,000 jobs could be accommodated at adjacent sites on the east side of Schottegat, assuming a drydock relocation to the site of the asphalt lake and Curinde free zone expansion into the existing dock facilities. This would result in a net creation

of roughly 10,000 to 16,000 new jobs in the study area, not including indirect impacts on the rest of the island's economy, which would likely be stimulated by GreenTown.

Table 4.1: an estimation of the employment effect of the GreenTown development (final situation)

Sector	Size (ha)	Empl / ha	Direct employment (fte)	Multiplier	Total employment (fte)	Source
Yacht industry	10	10	100	2.5	250	Investor
Containers	50	5 - 10	250 - 500	1.2	300 - 600	Estimate
Manufacturing	50	40 - 60	2,000 - 3,000	1.2 - 1.6	2,400 - 4,800	Estimate
Subtotal eastern part	110				2,950 - 5,650	
Entertainment centre	12		500 - 1,000	1.5 - 1.8	750 - 1,800	Investor
Entertainment school	2		50	1.2	60	Investor
Shopping mall			1,000	1.5	1,500	Estimate
Offices			1,000 - 2,000	1.2 - 1.5	1,200 - 3,000	Estimate
Subtotal western part					3,510 - 6,360	
Total Greentown					6,460 - 12,010	
Additional Free Zone	30		1,350	1.5	2,025	Investor
Docks	25		1,000	1.5 - 2,0	1,500 - 2,000	Investor
Total impact					9,985 - 16,035	

4.3 Other effects

While any detailed assessment of GreenTown's external impacts are purely speculative at this early date, we can provide a brief qualitative sketch based on the island's present existing socioeconomic conditions. A more thorough analysis will be needed when more is known about GreenTown's development prospects, and about conditions on the island at the time of GreenTown's construction and realization.

Temporary employment impacts related to Isla's closure and GreenTown's construction

As mentioned above, the disassembly and environmental remediation of the refinery site will require hundreds or perhaps thousands of temporary workers over a period of several years, including many positions that could be filled by current PDVSA and Isla-related contractor employees, who already know the refinery site and its installations well. Many of these workers could also be retrained to work on GreenTown's construction and related infrastructure projects, which would provide a massive direct and indirect positive economic stimulus for Curaçao, likely spanning a decade or more.

Real estate values in downwind neighbourhoods

Areas downwind from the refinery - including Buena Vista, Wishi, Marchena, Habaai, and Piscadera, among others - could expect to see increased property values and new development, as a result of improved air quality. It is also possible that other areas near the refinery would see improved property values due to the removal of blighted industrial facilities, and their replacement with a vibrant new neighborhood and public amenities.

Impact of tourism expenditures

GreenTown would have a dramatic impact on tourism on the island, both through the direct impact of tourist facilities at GreenTown and tourist development in downwind areas - such as Piscadera and Blauwbaai - where refinery related pollution has stifled development. Tourists coming to GreenTown's marinas and proposed entertainment complex will also spend money in hotels, restaurants, and a range of travel-related services. These impacts have already been seen on the island - in a far less concentrated way - through the North Sea Jazz Festival, which has become a major boon for the island's tourism trade, and could have an even bigger impact with improved facilities. Overall, the closure of heavy industry in Curaçao's core and its replacement with cleaner industries will make Curaçao a more attractive island for tourism, and likely yield island-wide direct and indirect impacts.

Tax revenues for the government

Currently PDVSA pays negligible taxes at the Isla site, resulting in a major loss of potential revenue for Curaçao's government. GreenTown's industries and residential development will result in increased long-term tax revenues for the government of Curaçao, in addition to short-term tax revenues that will be generated by GreenTown's construction.

Image and competitive power

If GreenTown is developed according to plan, its sustainable architecture and cultural events could transform Curaçao's image for the better, and put the island more prominently on the world map. Such landmark projects - integrating high-quality architecture, integrated planning approaches, and cultural amenities - have transformed cities around the world, from Dubai to Bilbao, that were largely unknown and underdeveloped before the projects were built.

National pride for a new country

The development of a new, modern core for Willemstad - to complement the historic core in Punda and Otrobanda - will strengthen Curaçao's nascent national pride. GreenTown will form the center of a clean, diversified, and healthy island economy for the 21st century, and will create a totally new atmosphere on Curaçao, which has been defined for the past 100 years by Isla. In particular, GreenTown will revitalize the area around Schottegat, which has been presently described by some as a 'black hole' at the center of the city.

Restricting sprawl In Banda Arriba and Banda Abou

Recent trends have shown a boom in new housing construction in Curaçao - the result of smaller households and second-home buyers from abroad - even as the island's year-round population has remained stagnant. By concentrating future growth as infill in

already-developed areas of Willemstad - utilizing brownfield sites such as GreenTown - Curaçao can preserve its remaining countryside and restrict traffic-inducing sprawl.

5 DEVELOPMENT STRATEGY

5.1 A development in phases for various functions

A large-scale mixed-use development at the Isla site and around Schottegat - deliberated integrated with surrounding neighborhoods, including Punda and Otrobanda across the harbour - could potentially transform Curaçao for the better, improving quality of life and access to opportunity for low-income residents who live in neighborhoods to the north and west of Isla, and providing a new type of development not seen elsewhere in the Caribbean to attract tourists and entrepreneurs alike. GreenTown is not merely an opportunity to clean up a polluted site and offer employment opportunities; it could and should be a part of a broad-based community development strategy for Greater Willemstad, a colonial city historically riven by inequality.

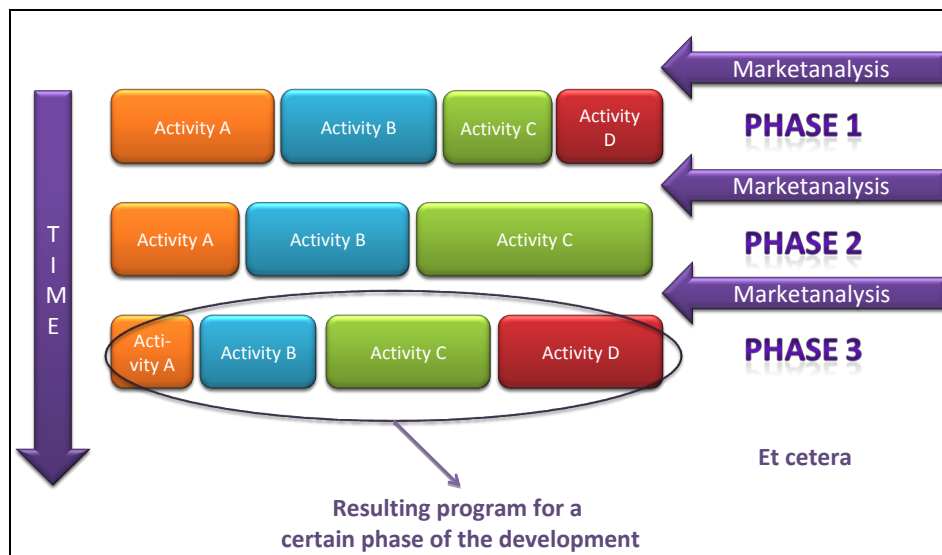
Rather than being divided into parcels and sold to the highest bidder, the entire project should be developed by a single entity, ideally a government corporation that could function as a public-private partnership. Such a venture would allow independent operation and management of the project, while still ensuring public participation and oversight, and the development of a new town that prioritizes public amenities for all Curaçaoans. The developing entity should be granted rights to redevelop the land, including jurisdiction to arrange all permits, land lease contracts, and responsibility for attracting investors, residents, and tenants.

Flexibility and an integrated planning approach will be crucial for the success of this project, as will a priority on community engagement and interaction, both in district-scale planning for Willemstad and island-wide comprehensive planning for Curaçao. Given the many uncertainties and the long timeline for the project, it is important that the GreenTown plan development and implementation be flexible to changing economic conditions and national priorities, while maintaining an overall vision to redevelop the Isla site as a new center for Willemstad and Curaçao.

5.2 Given the time to develop: flexible planning strategies

In order for a project of GreenTown's physical scale and economic scope to be successful, it must stand on the firm foundation of a comprehensive development plan, implemented in an integrated and balanced manner. In order to be sustainable, the plan needs to consider how GreenTown will address a range of variables, including environmental remediation, community concerns, business interests, accessibility and mobility, and design standards, among others. Planning should be undertaken by a team of planning and design professionals, in consultation with the government, business interests, and - most importantly - the public.

Figure 5.1: a development in phases



The plan itself - and the planning organization - must be flexible, allowing for changing priorities over the lifetime of the project. Too often, surveying, planning, and decision-making take place in stratified stages, on the assumption that decisions made in earlier stages are set in stone and cannot change. Such inflexible planning processes are best suited to smaller projects executed in a stable environment; in a long-range project like GreenTown, flexibility must be built in. This imperative highlights the need for an independent government-backed corporation to manage the project, an entity which could be more nimbly able to adjust to rapidly-changing circumstances than a mission-bound and politicized government agency.

In practice, such flexibility would entail keeping a range of development options open for as long as possible; organizing the plan such that opportunities can be combined as needed and putting in place a core team of professional staff - not political appointees - to continually tracks developments that affect the plan, tests the foundation for stability, and adjusts the plan if necessary.

Such flexibility would also entail focusing on dynamic trends and scenarios, rather than static figures and statistics. This type of work requires in-depth collaboration between and among a broad range of stakeholders, including government agencies, businesses, organized labour, institutions, community organizations, and the general public. By working together in an interdisciplinary fashion, planners and stakeholders can consider a range of alternatives jointly, producing a set of planning scenarios; in turn, an interdisciplinary team of market specialists, concept developers, and designers can integrate these scenarios to develop a strategic set of contingencies for the project plan. The resultant strategic GreenTown Plan - outlined in the final project proposals - will offer the highest level of certainty, by combining as many opportunities for success as possible.

5.3 Steps towards a first framework

The above then leads to the following set of principles.

Step 1: trend research

GreenTown's formal planning process should begin with a thorough market scan, placing a particular focus on dynamic trends - rather than static figures - in population, land use and development, employment and trade, both in Curaçao and in the broader Caribbean region. Once identified, these trends should be forecast under different socio-economic scenarios, to determine how they can best be converted into added value for the intended target groups, and how market share can be captured in a profitable GreenTown development.

GreenTown must be a place where people want to come, with the right mix of uses, and welcoming public spaces; it should be a place of amenities for Curaçaoans and tourists alike. Good market research will determine what uses the market is demanding - GreenTown's final concept development - as well as the physical design of the district and its key component areas.

Based on the outcomes of this scan, the market researchers working with the team will incorporate variations into the programme, partly based on the market study and partly based on on-the-ground conditions in Curaçao. It is the team's task to identify key variables to measure financial, social and political feasibility, and to determine which 'buttons' need to be pushed to in order to maximize GreenTown's social benefit, while reducing real and social costs and maximizing returns for investors.

Step 2: design early in the process

In order to properly weigh benefits and costs, GreenTown must develop a set of planning alternatives. Key questions to be addressed in the GreenTown plan would include:

- What kind(s) of development would fit into the different sub-locations?
- What functions could be achieved and are desirable, in which locations?
- What type of buildings should be constructed, and at what densities?
- Where and how can negative impacts be limited?
- How can cost savings be made (e.g. in the clean-up, infrastructure, et cetera)?

Benefits could be increased through higher densities and integrating different housing types. Phasing will also play a role in determining both the costs and benefits side of the development equation. For these reasons, the designer needs to be involved in the project at an early stage.

Step 3: scenario development

The design alternatives developed in the initial stages will be combined into a limited number of urban development scenarios to show a range of development options for GreenTown. For example, there could be one scenario in which the ambitions of the local authority are given the priority, one scenario where the financial outcome is given more weight and one scenario which seeks to deliver optimum spatial or community benefits. Each scenario will include an assessment of the opportunities and risks that it presents. Stakeholders, government officials, investors, and community members will

be engaged to discuss the scenarios, and determine which presents the optimal course of action for Curaçao.

Step 4: flexible strategic plan development

Following detailed discussion of the initial scenarios, they will be brought together into a single, flexible strategic plan that will offer a range of options for GreenTown's development. From this analysis, GreenTown and its stakeholders will choose the best mix of functions and designs, as determined at this stage in the development process (which may still be years before ground is broken on the project). By combining opportunities, a measure of certainty is created for both the developers and stakeholders in the event of market fluctuations and unexpected economic, social, and political developments. Most importantly, the plan at this stage should set out sound spatial principles, development benchmarks, and financing alternatives, while stressing that nothing is set in stone, and that design and development priorities remain sensitive to change over time.

Step 5: present opportunities and risks

Although a definitive site plan is not drawn up at this stage in the development process there is inevitably a need to draw up sketches of how the finished product may look and feel. This could be achieved through a concise, attractively illustrated and bound document, in which all potential scenarios are sketched and described with an outline of the expected impacts of each, illustrating opportunities and risks. Such a report--bringing GreenTown's design to life, balancing reference images and illustrations with data and analysis--will help to keep the next phases of discussion on track, and manage stakeholder expectations for the process and project.

Step 6: illustrations of design considerations

The reference images and illustrations must be prepared to give a clear impression of plans and design concepts, but not be so detailed or location-specific that the client's hands are tied when it comes to final negotiations of the site plans. Illustrations should show key design features and considerations, while not projecting the sense that design plans are final. As a result, hand sketches - which are understood to be conceptual and impressionistic - often work better than polished computer animations and reference images for this purpose, as the latter project a more technical, deterministic air.

Likewise, photographic reference images are often taken too literally, raising the risk that designers and developers will be blamed later on for not meeting the expectations that have been raised.

Step 7: make final and detailed designs at the last moment possible

Often in the development of large-scale projects, 'final' designs are created years before implementation, either resulting in a need to totally change designs later on, or to stick to inflexible, outdated designs due to the high cost - in time and money - to adjust plans to better fit changed market conditions and reality. Given GreenTown's long time horizon for development, final plans should be postponed as late as reasonably possible, so that the project will be realized using the best available trend data and technology, thus minimizing risk.

6 CONCLUDING REMARKS

GreenTown presents a once-in-a-lifetime opportunity for economic and community development in Curaçao, with the potential to make Curaçao a leader in sustainability for the Caribbean, fundamentally improve the island's position in the regional economy and, in so doing, create 21st-Century opportunities for its people. In order to realize this project, the people of Curaçao will need to be engaged in the process and committed to its success, along with the island's business community and its government, with support from across the political spectrum.

We project that the development of GreenTown will have a tremendous positive impact on Curaçao, with likely outcomes including:

- The net creation of 10,000 to 16,000 permanent jobs
- Thousands of temporary jobs connected to site remediation and construction
- Increased tourism expenditures
- Increased tax revenues
- Increased real estate values
- Further diversification of Curaçao's economy
- Concentrated urbanisation in the centre of Willemstad
- Positive environmental impact
- National pride
- Boost to Curaçao's image and international competitive power

In conclusion, GreenTown is an extraordinary opportunity to transform the Isla Refinery Site - currently a source of blight and pollution, and a net drain on Curaçao's long-term economic prospects - into the engine of the island's 21st century economy, and a new, mixed-use core for Greater Willemstad. In order to realize GreenTown's potential, the island must commit to supporting the project, and to creating stable economic and political conditions on the island to ensure the project's successful development. Once developed, GreenTown has strong potential to lead to a further broadening and strengthening of Curaçao's economic and social development, and to establish the young island nation as a regional leader in sustainable development in the Caribbean and beyond.

Annex 1. Overview of used literature and interviews

Data sources

- Studies of Central Bureau for Statistics (CBS)
- Studies of the Curaçao Tourist Board (CTB)
- Data of the Central Bank Curaçao
- World Bank statistics
- Open Arms Curaçao

Reports

- A sustainable future for Curaçao - Strategic options for Isla and the Isla site Phase 1 - Part 1, Ecorys
- Un Bista Nobo, Lighthouse Club Curaçao
- Koers voor de Maritieme Toekomst, Maritieme Autoriteit van Curaçao

Interviews

- Governmental stakeholders (Prime Minister, DROV, etc)
- The Dutch representatives at Curaçao
- Various international and local investors
- Various industries / companies around the Schottegat (Dokmaatschappij, Curinde, etc)
- People living in the near vicinity of the Schottegat
- Various real estate and development companies
- Representatives of the fishing community