

## Ecodistrict Coeur de ville - La Possession

by Lucie PELLET / 2018-06-14 14:47:54 / France / 22874 / FR



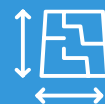
**Address 1 - street** : 97419 LA POSSESSION, France

**Population** : 5 000 hab

**Number of jobs** : 600 emplois

**Starting year of the project** : 2013

**Delivery year of the project** : 2025



**34 ha**





## ID CARD

Coeur de Ville (Heart of the City) is an ambitious development operation that aims to provide the town of La Possession a new downtown, built in a long-term perspective, sustainable and exemplary, to meet the growing needs of a population which will grow from 32,000 to 40,000 inhabitants by 2025, the final delivery date of the Cœur de Ville.

Through this project, the municipality of Possession wishes to assert itself as the sustainable city of Reunion of tomorrow, through a development that meets the requirements of high environmental, urban and territorial quality.

One of the principles is to reconcile urbanity, social and functional diversity, as well as new modes of travel and new digital tools to share with the inhabitants a new way of living the city.

To urbanize in an insular and tropical context by privileging innovative solutions to balance the city and its inhabitants, it is the whole ambition of this project.

## Programme

- Housing
- Offices
- Businesses and services
- Public facilities and infrastructure
- Public spaces
- Green spaces

## Project progress

- Operational phase

## Prescriptions and zoning

- Particular conventions

## Key points

- Governance
- Quality of life
- Economic development
- Mobility
- Smart city
- Resources
- Biodiversity
- Energy /Climate

## Approaches used

- Ecodistrict national label
- AEU

## Certifications

- Ecodistrict national label

## More info

<http://www.lapossession-coeurdeville.re>

## Data reliability

Self-declared

## TERRITORY

### Type of territory

Located on the island of Reunion in the Indian Ocean, the town of La Possession has a strategic location between the two major hubs of the island, Le Port and Saint-Denis, and the leisure area from the west of the island, which gives it great attractiveness. Its population growth is thus one of the most dynamic of the island: its population today has 32,000

inhabitants and will increase to 40,000 inhabitants by 2025, ie more than 1,000 new inhabitants each year. The Possession is also the gateway to the Western Territory: it has unique natural assets, counting on its territory a large part of the circus Mafate, a UNESCO World Heritage Site and it integrates with the Ecocity built on the agglomeration community of the West Coast Territory.

As a reminder, sustainable development covers major challenges for the island of Reunion:

- A growing population that has not yet completed its demographic transition: the island will count in 2030, 1 million inhabitants.
- A weak resource in land associated with strong physical constraints.
- Large housing needs in the face of increasing demand.
- Exceptional weather conditions.
- Issues that have particular acuity in tropical insular environment: waste management, travel, energy control.
- A remarkable biodiversity, a natural heritage to preserve and enhance.

## Climate zone

[Af] Tropical Wet. No dry season.

## More info

<http://www.lapossession-coeurdeville.re>

<http://www.facebook.com/CDVLaPossession/>

<http://lakanopee.re>

## KEY FIGURES

### Neighbourhood paved surfaces

Neighbourhood paved surfaces : 231 200 m<sup>2</sup>

### Built surface on natural or agricultural spaces

Built surface on natural or agricultural spaces : 1,80 ha

### Green areas, roofs included

Green areas, roofs included : 111 975 m<sup>2</sup>

## Public spaces area

Public spaces area : 115 200 m<sup>2</sup>

## Office floor area

Office floor area : 5 000 m<sup>2</sup>

## Commercial floor area

Commercial floor area : 6 000 m<sup>2</sup>

## Public facilities floor area

Public facilities floor area : 10 700 m<sup>2</sup>

## Housing floor area

Housing floor area : 160 000 m<sup>2</sup>

## Refurbished floor area

Refurbished floor area : 1 100,00 ha

## Number of residential units

Number of residential units : 1 700

## Number of social housing units

Number of social housing units : 680

## Green spaces /inhabitant

22.4

## Public spaces/inhabitant

23.04

## Amount of the investment taken in charge by the local authorities

Amount of the investment taken in charge by the local authorities : 41 000 000 € HT

## Total of subsidies

Total of subsidies : 24 000 000 € HT

## Detail of subsidies

20000000 € FRAFU ETAT-REGION / 31000 € ADEME / 283000 € PIA-Ville de demain / 360000 € EDF

## GOVERNANCE

### Project holder

Name : City of La Possession

Type :

General description :

Urban Planning Habitat ...

[🔗 Dossier Ecoquartier](#)

### Project management

Description :

As illustrated in the "project governance" and "legal organization of the project management" schemes, given the legal and financial structure of the operation (ZAC), the governance mode is articulated around :

- of a Ville-Aménageur project management block, partners under a ZAC concession contract with shared risks,
- institutional partners who support and support the project since the beginning (State / Community of Agglomeration / Region / ...),
- operators and promoters, including a property development company "Immobilière Cœur de ville" - ICV - dedicated to the project, a privileged partner of the operation.

Several operational steering bodies regularly bring together all the project's stakeholders:

- strategic committees (which are held every 2 months)
- monthly monitoring committees
- technical and thematic meetings
- consultation with residents.

The consultation holds an important place in the genesis and throughout the realization of the project, with:

- regular informative / thematic public meetings and quarterly participatory workshops
- special awareness projects with targeted populations: schools, seniors, etc.
- Collective projects with the population: around the animation of shared gardens, the layout of public spaces, the choice of the names of new streets, etc.
- An approach was also initiated with the downtown merchants, stakeholder in the dynamics of commercial animation of the town.

Recently, the project was awarded nationally by winning the 2nd prize of the Sustainable Overseas Competition by the Association of Eco-Mayors for its action "2025, I imagine my city of tomorrow". The will of the action is to make live, and from the start of the project Heart City, the reality of the new downtown La Possession for future generations. The project gives students keys to understand our particular living environment, through notions of heritage, topography, mobility ... Since 2013, more than 500 students have participated in this action. So many future users, aware of the City of tomorrow!

## Project stakeholders

SEMADER, ZAC landscaper Cœur de ville

**Function :** Developer

ZAC Dealer

Estelle TECHER Directrice de projet ZAC Coeur de Ville [estelle.techer@semader.fr](mailto:estelle.techer@semader.fr)

[Construction21 company page :](#)

**More info :** <data/sources/users/9241/labelzaccdvanx9bschema-de-gouvernance.pdf>

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Real Estate Coeur de Ville

**Function :** Investor

Carries the construction and the promotion of the operations of the majority of the dwellings, the offices and the trade

Jacques TANGUY : [jtanguy@opale-promotion.re](mailto:jtanguy@opale-promotion.re)

[Construction21 company page :](#)

**More info :** <data/sources/users/11111/labelzaccdvanx9aschema-organisation-maitrise-ouvrage.pdf>

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LEU Réunion

Function : Construction manager

Chief Urbanist of the ZAC

Michel REYNAUD michel.reynaud@2apmr.fr

[Construction21 company page](#) :

## SOLUTIONS

School action CAUE "I imagine my city of tomorrow"

Description :

The school action was awarded at the Eco-Mayors Trophy in 2018

The will of the action is to make live, and from the start of the project Heart City, the reality of the new downtown La Possession for future generations. The project gives students keys to understand our particular living environment, through notions of heritage, topography, mobility ... Since 2013, more than 500 students have participated in this action. So many future users, aware of the City of tomorrow!

- Urban project governance
- Citizen participation



Name of the Banians Promenade by citizens

Description :

The name of the Banians Promenade by citizens is a participatory approach that was carried out in 2017 via the internet and social networks.

- Urban project governance
- Citizen participation



QUALITY OF LIFE



## Quality of life / density

The construction of this district responds to the need to structure a new city center. Its realization meets the ambition of "living together" on a territory built according to the requirements of high environmental, urban and territorial quality. The city center project finds its regulatory translation in a Grenellized PLU validated in 2012. The resulting general planning and programming orientations (PAO) set the particularly voluntarist framework for a sustainable development strategy for the territory. Density, social mix, intergenerational and functional, height and location of buildings guaranteeing urban comfort, parking standards, bioclimatic architecture, protection of landscaped areas, building energy performance objectives ... are all new items included in the 2012 PLU.

## Net density

-0.01

## Culture and heritage

The project will structure a 34-hectare hollow tooth formerly inhabited by a handful of landowners with a strong agricultural identity. The preservation of the identity of the place and its valorization are expressed in 3 points:

- preserving and enhancing Reunion's built heritage
- preservation and enhancement of Reunion's plant heritage
- preserving the agricultural identity of the site
- **The preservation and enhancement of Reunion built heritage**

The mansion "Château La Paille" is preserved and will be renovated by the end of 2018. Located in the middle of the district, is destined to become the third-place of the district - La Maison Payet, at the Creole architectural identity strong, was renovated from the beginning of the operation and located in the central square of the project. Occupied for the first years by the developer, it now hosts the major project team of the City, as well as all the urbanism commissions, SD committee, monitoring committee, and strategic committees, ie all the steering and governance bodies of the project.

- **The preservation and enhancement of Reunion's plant heritage**

- A fine work of identification of the endemic species and remarkable trees was carried out before the project. More than 150 subjects are thus identified at the PLU and preserved. VRD buildings and developments slip between them to enhance them. - In parallel with this preservation in situ, a real plant engineering was set up to design the greening of the neighborhood. In total, there will be more than 80,000 planted individuals, representing more than 100 different species, mostly indigenous and endemic. La Possession, gateway to Mafate, with its Heart of Garden City is thus a body with the National Park of Hauts, identified as World Heritage of UNESCO, through the two ecological corridors that border the project:

La Ravine à Marquet and La Ravine des Lataniers.

- **The preservation of the agricultural identity of the site**

Constituted of 12 islands, Coeur de Ville foresees on its last island, currently market gardening extensive, the deployment of a project of agro-urban planning on 49 000 m<sup>2</sup>, mixing housing, urban farm, shared gardens, recycle, place of agricultural formation for the gardeners of the city, photovoltaic farm and grain bank

## Social diversity

The PLU imposes a social and functional mix. The project will receive, 40% of social rental housing, 20% of intermediate housing and 40% of free housing both at the scale of each island and the entire ZAC. 3 service residences for independent seniors, as well as 2 micro-nurseries are under license. This program is the first step towards a district of diversity that to come to life through important public spaces (place of centrality, Promenade Banians).

## Social inclusion and safety

Accompanying actions and social activities are put in place to stimulate neighborhood dynamics. The ambition of the partners is to integrate the inhabitants in the device of the Smart City: a dedicated team, the DSI, will define the social animation component that will be set up as part of a global strategy validated (place base , dedicated means) by all partners.

The smart city is thus defined as the one that links urban development to human development. It is already envisaged the establishment of "Smart City" workshops to initiate the dynamics of inclusion of the inhabitants, the realization of a "Living Lab", participatory workshops on themes identified for example the energetic coaching, the new uses of the eco-district One of the first actions will be support for the realization of shared gardens on a plot already identified in the heart of the first block of the ZAC. In the medium term, the D.S.I will have to succeed in increasing citizen participation thanks to the digital "@democracy". The team will work to put in place all actions to fight against the digital divide. The team will endeavor to network, to propose any actions allowing the population concerned to appropriate the tools.

From the point of view of safety, the arrival of the 5000 inhabitants and the activity generated by the attraction of the new city center provoke a reflection upstream to register the project in an approach of optimal urban safety. In April 2013, a study is launched to this effect and makes it possible to anticipate the risks of delinquency and disturbances to tranquility. The recommendations are submitted to the City and the authorities concerned. This work is conducted in close consultation with the national gendarmerie, security referent for the territory of La Possession. The urban safety study also takes into account all the interactions that the municipality of La Possession may have with the other municipalities of the western territory. The construction phase is also concerned and it is proposed to the developer various elements in order to ensure the security, the safety of residents and future inhabitants of the neighborhood during this period.

The choice of optimized lighting adapted to the nature of the spaces and the time of the night plays an important role in the sense of security. The goal is to better illuminate by avoiding light pollution and waste of energy. It is not a matter of lighting up all the ways of the ZAC as in broad daylight. The programming of the ranges and the luminous intensity of each space will be determined in consultation with the actors concerned for a factory setting. An audit and an adaptation will be carried out after a few months of life in the neighborhood.

## SOLUTIONS

### Heart block

**Description :** The design of the layout of the new dynamic garden center revolves around 3 key points :

- The development of the Hearts blocks: shared gardens, arranged in island of freshness and places of meeting with the shared gardens
- The mix of products: housing, shops, small craft workshops and offices at the island scale
- Social and intergenerational diversity, housing for all, at all ages



### Company :

- Promotion of cultural/ historical identity
- Urban densification
- Proximity services
- Security

## ECONOMIC DEVELOPMENT

### Local development

During the works, 400 annual jobs are created. 600 employees over the entire ZAC.

### Functional diversity

The new downtown of La Possession accompanies and initiates the new uses of the city. A multifunctional city that combines businesses, housing, offices, public facilities, meeting spaces and exchanges. A city of short distances in which we make accessible to all, easily and quickly, the public services, the workspaces, of consumption and animation and within which we develop the access to the soft mobility for all: bike sharing, tropical pedestrian mall

crossing the whole neighborhood, development of public transport...

Central island of the Heart of City, Kanopée is its innovative hyper-center.

Located in the heart of the city, in the natural extension of the current downtown, its urban design promotes commerce, services and local recreation, thus improving the comfort of residents and employees of the city center while creating a new pole of unique attractiveness. It will gather around a commercial mall 130 meters long: 32 commercial units, an average food surface, 6 kiosks, 2 large public esplanades, large terraces, seminar spaces and co-working, 5 300m<sup>2</sup> of offices, a health area ... A hyper center whose call for candidacy launched recently, allows to enhance local initiatives, to promote short circuits and to drive a new dynamic in the current downtown area with little commercial equipment.

## % of public spaces

34

## % of office area

1

## % of commercial area

2

## Circular economy

The block 12 of the ZAC, now classified as an agricultural zone, with an area of approximately 50,000 m<sup>2</sup> is currently operated by a market gardener, until 31/12/2019. The desire is to maintain the agricultural vocation of this island by developing an innovative urban agriculture project, mixing in its programming:

- Housing
- Activity: resale of the production of the island (via a base location for an Amapei for example)
- Circular economy, with the possible establishment of a ressourcerie
- Green energy production, with a photovoltaic farm
- Agriculture on innovative modes adapted to the urban fabric: permaculture, vertical farm, aquaponics ... etc.

In the block 7, that of La Kanopée the heart trader, it is envisaged the establishment of an association that will connect both local producers and businesses Kanopée: recovery of unsold or unsaleable and residents (insertion by the work, formation of a new trade ...): transformation of the products (smoothies, juices, soups, cooked dishes ...) then sales on line.

## SOLUTIONS

La Kanopée

**Description :**

Central block of the Heart of City, Kanopée is its innovative hyper-center.

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improving the comfort of residents and employees of the city center while creating a new pole of unique attractiveness. It will gather around a commercial mall 130 meters long: 32 commercial units, an average food surface, 6 kiosks, 2 large public esplanades, large terraces, seminar and co-working spaces, 5,300m<sup>2</sup> of offices, a health area ...



A hyper center whose call for candidacy launched recently, allows to enhance local initiatives, to promote short circuits and to drive a new dynamic in the current downtown area with little commercial equipment.

- Business development
- Business parks
- Circular economy

<http://lakanopee.re>

Company :

## TRANSPORT

### Mobility strategy

In a general context in Réunion, where public transport is not well developed, where the practices of active modes of displacement are abandoned in favor of the car which becomes the dominant mode of mobility, the challenge of proposing alternative and attractive modes of travel has become a key concern of the project. It translates into the following principles:

- proximity to facilities / shops / activities: within a radius of less than 350 m around housing that reduces the need for travel of local residents; all connected by a mesh of lanes reserved for soft modes of movement,
- construction of a public transit site in a calendar compatible with the project serving the Coeur de Ville district and connecting it to neighboring communities,
- limitation of public parking spaces on public roads in favor of a shared parking lot of 355 places,
- prioritization of the created lanes: traffic lanes, roads in zone 30, sharing zones and pedestrian paths, the modes of active displacements being clearly favored in the

- arranged lanes,
- increase accessibility to the PMR, at the most, in view of the topography constraints of the site with continuous consultation with the public and partners concerned by this issue.

## SOLUTIONS

### The Banians Promenade

#### Description :

From 12 to 22 m wide, this major axis that crosses the site from north to south, is entirely dedicated to active modes of circulation (pedestrians, bicycles, scooters, etc.).



It ensures ecological continuity between the ravine of Lataniers and the ravine in Marquet and connects all housing units to the neighborhood: the two school groups, crèches, play area, allotment gardens, sports plateaus and mail commercial.

The latter is itself entirely pedestrian, it connects the main public square, with major administrative and cultural facilities to the tropical mail and serves shops, services and offices, the restaurants of the heart trader (at a maximum distance of 500 m from housing , stop TCSP or public parking).

This walk is part of the 7kms of walking routes throughout the ZAC.

- Soft transportation

## SMART CITY

### Smart City strategy

The heart of the City La Possession eco-district grows and becomes Smart City in 2018, stimulating the emergence of innovative and experimental projects, in correlation with the expectations of users, to create the new city of Reunion for and with the inhabitants, copy on the sustainable development plan.

The Smart City Heart of La Possession has the claim to lay the foundations of the city of Reunion of tomorrow, considering that innovation should strengthen the social bond and bring closer the inhabitants: the proximity is an essential value of the urban project City Heart Smart

City, it is even the essence.

Technology and digital are at the service of the uses of the city and the environmental responsibility of public facilities: Smart Grid, connected public lighting, shared parking ... Le Coeur de Ville integrates its specificities, whether cultural or territorial, for imagine a city that acts for more cohesion for its territory (photovoltaic energy, large public plazas ...)

Through an innovative methodology based on the co-construction and the sharing of knowledge of use and expertise, whether public and / or private, Le Coeur de Ville gives citizens the power to act by putting, at their services, especially digital, for a sustainable, citizen and innovative city.

## SOLUTIONS

### SMART CITY

**Description :** The main existing solutions, combining digital and sustainable development are:

All housing and public spaces will be equipped with smart boxes to control the positions of high consumption, live monitoring their water and electricity consumption allowing them to consume better. An energy mastery applied also to the city, with a connected management of the LED public lighting.



Data and data are therefore a source of wealth for the digital city, enabling it to offer more services to citizens, to reinvent citizen participation, by integrating an application for users and residents while ensuring the guarantee of confidentiality and making users aware of this new phenomenon.

The first interconnected shared car park of La Réunion will be held in La Kanopée in the heart of the shopping center of the district. This car park meets the criteria of sustainable development specific to the eco-district, allows to build only the places actually used by pooling uses without oversizing the parking.

The development of a system of collective production and self-consumption of photovoltaic energy on an island like La Kanopée, composed of offices, businesses and housing is an innovation in Reunion. A major axis of Cœur de Ville, relying on one of the key natural resources of its territory to produce green energy: sunshine.

Most recently, digital has been used to help citizen participation. Indeed, through a call for ideas, and then online voting and social networks, the inhabitants were able to choose the baptismal name of the first public equipment delivered: The Promenade Banians, the axis

dedicated to mobility soft running through the neighborhood.

- Infrastructure
- Digital services

## RESOURCES

### % Paved surfaces

68

### Water management

- **Landscaping for the management and the decontamination of rainwater**

The waterproofing of the grounds of public space is reduced to what is strictly necessary to manage rainwater in aerial systems. The bias is characterized by a minimum of pipes and the establishment of large valleys planted with different sizes that accompany the streets and alleys. Plants provide beauty, urban comfort and cleansing, but also favor a complex system that is that of the valley. The root system allows for better soil management and promotes the infiltration and timing of runoff water. The project makes perceptible the water course and follow the drop of water by a development and a permanent visibility of the collection and storage of rainwater. The net network is based on large watersheds re-divided, a large outlet in the open air is laid on the terrace upstream of the Ravine always with a goal of delay until natural rejection. Thus the natural flows are respected and this principle is the guarantor of a functioning of the technical works to the management of the water and their maintenance.

- **Raw water**

With the aim of preserving the water resource and ensuring a qualitative and economical management, the plantation systems installed in the gardens of the public spaces consist of xerophilous plants adapted to the dry climate of the site. The plants, support of the management of the rainwater benefit from this meager contribution and will be in parallel saving in watering, a watering with manual control is not automatic is installed. Coupling with ground sensors is envisaged to optimize water management using Smart City tools. Monitoring consumption using a system will quickly locate any leaks and educate users. The project benefits from the raw water network that today supplies the sector (orchard, nursery, agricultural area, and large private gardens). This network will develop on public spaces. The use of raw water guarantees a considerable reduction in the water bill and the use of this resource, the result of a complex system of tilting water from east to west.

### Soil management



Soil management is linked to the landscaped project (creation of a living soil by the root systems) and rainwater management (infiltration and delay allow the development of the root system) Reuse of the materials of the site (balance cuttings / embankments, reuse rocks for valleys and works in rubble stones, vegetal lands for plantations ...)

## Waste management

For waste management, in a broad sense, the specific objectives of the operation are:

- facilitate selective collection in public spaces and impose selective internal collection of tertiary operations and housing,
- strengthen individual composting and develop collective composting in connection with allotment gardens,
- set up a "waste tracking" plan to promote sorting,
- minimize waste, thanks to short circuits and pedagogy,
- create the conditions for setting up a resource center,
- optimize cuttings and embankments related to development and construction

At La Kanopée, the management of the waste produced daily in the various premises and housing buildings is specifically translated by:

- Optimization of the surfaces of the dedicated premises and distribution in the operation
- The introduction of compost bins in residential green spaces
- A specific service provider for inert waste produced by business premises or businesses
- The treatment of bio-waste (fermentable waste) produced by restaurants, enhanced by the production of composts

## SOLUTIONS

Waste Management

Description :

**Waste management can be organized in many ways.**

We are therefore working on two hypotheses: collection in rolling bins and terminals with aerial glasses and the collection in underground bins on the Kanopée which will allow a gain of space, completed with a system of specific compaction of the dedicated and a dedicated management of the fermenticides waste restaurants.

### Sorting, composting

The composting bins are provided and positioned on pedestrian paths, at the edge of the garden, with one bin for every 20 inhabitants. Some composters can be positioned in the public space. The whole of the waste premises are the object of a suitable signage, and the problem of the waste (composting, cycle of materials and other waste) is the object of an action. awareness by the project owner.

## The waste removal path

The waste premises are positioned on the pedestrian path of the inhabitants, in order to facilitate their use. They integrate with the surrounding landscape. The philosophy of the positioning of garbage bins is to find first in its way the composter, then selective sorting, the rest of OM, the recovery and finally the dump. The location for pick up Premises with a facade open to public space, for pickup, at a place where the pick-up truck can come without going back to avoid noise.

## Circle of 50m

The waste premises are located about 50m from each building entrance. The system in underground tanks sometimes allows the sharing of containers for several operations, the distance of 50m can be increased. With regard to site management, the implementation of a **low-nuisance construction site charter** imposes on each project:

- to identify a network of construction waste streams,
  - to plan and locate the sites,
  - to materialize the circuits authorized for construction machinery,
  - create a platform for excavation and waste from construction sites on the site,
  - to impose sorting, recovery and traceability of waste.
- 
- Waste management
  - Citizen-awareness

# BIODIVERSITY

## Biodiversity and natural areas

### The stakes of biodiversity

The landscaped project set up is a resource territory. Planted species made up of many endemic species can reclaim impoverished urban areas. This plant diversity brings new life to soils through the development of complex root systems, supports stormwater management and promotes the installation of a faunistic biodiversity of the subsoil, soil and air. The green fabric allows unduly to install the ecological corridors between the large spaces source of the gullies.

The enhancement of natural heritage, both ecologically and environmentally, is a central theme because the site has remarkable potentialities identified in the context of exhaustive analyzes. The principles developed in the project are:

- conservation and preservation of remarkable species and in particular "bunches" of

banyan trees at the heart of the project, (the species has been planted on the island for generations), present in a sparse manner on the ZAC, arboretum right-of-way of the field of the Scents of Wood in an objective of opening to the inhabitants of the Possession,

- implementation of a specific regulation in the PLU The green frame is included in the landscaping project through the development of the tropical mall which plays the role of biological corridor by connecting the two gullies that frame the ZAC. The presence of many shared gardens, cultivated in a reasoned way, the limitation of the waterproofing of the grounds, the choice of endemic plants, put in culture for the Heart of City, and the limitation of the light pollution also contribute to the respect of the biodiversity . The management of these fragile and remarkable spaces requires the mastery of adapted techniques, respectful of the environment, which is why a continuous training of the professional gardeners in charge of the maintenance of these spaces will be put in place.

## SOLUTIONS

An educational exhibition: Discovering my eco-district

### Description :

In June 2018, the Secretary of State for the Ecological Transition, Mr. Sébastien Lecornu, came to inaugurate the delivery of the first installment of the works of ZAC Cœur de Ville. The occasion, also, to inaugurate the new exhibition installed throughout the Banians Promenade. This exhibition allows both the walker to project himself into his environment with great visuals "Here, tomorrow" and also to be aware of the landscape approach undertaken in his neighborhood through the production of dedicated panels. A flora book will also define all the planted species, their usefulness and thus enhance the preservation of public natural spaces and the fragile environment of Reunion.



- Management of natural areas
- Environmental charter

The creation of the block of freshness

### Description :

In the interest of comfort in public spaces, the block of freshness is largely favored thanks to

the establishment of dense gardens. Indeed, with complex plant systems. Six different systems are in place, 79% of planted areas consist of 2 minimum strata. The systems include small trees and shrubs, trees and palms, cover plants, creepers and climbers, herbaceous plants and ferns. The cool urban atmosphere favored by the plantations makes it possible to obtain a cool island coefficient equal to 0.32. Spaces dedicated to plantations are also the support for open water management.



- Management of natural areas
- Environmental charter

## ENERGY/CLIMATE

### Climate adaptation, resources conservation, GHG emissions

In the sustainable tropical city of Coeur de Ville, the prerequisites for comforts are to allow urban planning that defines a new right to natural ventilation.

**Regulatory Transcription** Definition of a general organization in a mass plan. Regulatory Transcription in the general PLU data. Realization of OAP at the scale of the island.

**Project monitoring** Establishment of a sustainable development reference system. Accompaniment of project managers and project managers Monitoring of projects at different stages of study and until their completion. Instrumentation, accompaniment (passive architecture, active use)

### Energy sobriety

The objectives of energy sobriety have been included in the PLU of the Possession. For example, dwellings must have a maximum energy consumption of 20 kWh / m<sup>2</sup>sdp / year. Energy instrumentation to inform and control energy expenditure is mandatory for all buildings.

Reduction of consumption on lighting through a monitoring of consumption.

Energy efficiency translates into tropical bio-climatism at the scale of the site, the urban block, and the building, detailed in the references and PAOs. The objective of this efficiency is that no air conditioning is installed on the ZAC (unless particular need is proven), thanks to the design of buildings and surrounding areas. Greater attention will be paid to office and retail

operations, which consume a lot of energy.

In the spirit of energy sobriety, but also to answer the architectural quality and the quality of life, an aerodynamic study was made on the typical buildings of great heights (R + 7) after a work of aerothermal design of the ZAC initiated in the general design of Coeur de Ville, This work was done with Jacques Gandemer Engineer Consulting and the Eiffel laboratory in Paris. Finally, the types of plantations, the differentiated management methods and ecological will promote the regeneration of living soils and avoid hard management consuming means including fuel (blowers and thermal brush cutters). »The renewable energies whose use presents an interesting potential on the zone of study are:

- Solar thermal for heating domestic sanitary water
- Solar photovoltaic with the realization of medium power farms. Photovoltaic generators that can be installed in the perimeter of the operation must favor the installation on the roofs of buildings. The electricity generating potential identified is around 2,000,000 kWh / year. The coupling of photovoltaic installations with hydraulic storage systems should also be considered, not directly within the study area, but close upstream. For this purpose, the PAOs specify that sloped roofs will have to optimize the photovoltaic production potential. The integration of solar panels is neat and studied, especially with regard to the grid of openings in the facade, the search for integration in the plan of the roof and the limitation of dimensions and locations. Designers are required to provide minimum precautionary measures, allowing the subsequent installation of the panels (inverter technical room, ducts, location of the counting cabinets, etc.). The compensatory measures will have to allow the supply of electric charging stations of vehicles (5 to 10% of places according to a study detailing the real need of the project) - (article 12.4 of the PLU).

## Energy mix

The issue of energy dependence is very important on the island. The Possession totally depends on the electricity produced by the thermal power station of the Port. Most buildings are not equipped with heating systems, the climate does not require it, except at altitude. Energy consumption is mainly related to air conditioning and electrical appliances (including cooling: refrigerator, freezer)

## SOLUTIONS

Instrumentation of public spaces

### Description :

As the energy consumption targets are ambitious in the ZAC Coeur de Ville, multiple meters will be installed to evaluate not only the energy consumption but also the consumption of drinking water. This instrumentation will make it possible to see the evolutions of consumptions and to quickly locate the drifts and thus the malfunctions (water leak, defective luminaire, etc.) for a repair in a short time.

Thermal, visual, acoustical and aeraulic comfort will also be analyzed by setting up thermo-hygrometers, luxmeters, anemometers and sound level meters. The assessment of the impact of the improvements made on urban comfort will be compared to other more "hard"



developments. Throughout our approach, our work was based on limiting the effect of the heat island to the benefit of the island of freshness, an environmental design model in a tropical environment. A comparison with more "hard" developments will be made to see the thermal performance of the ZAC Coeur de Ville.

ENR or recovery production sectors A feasibility study on the development potential of renewable energies was carried out in 2011. An analysis of the current energy performance of the sector and its needs, in the neighborhood or nearby, puts forward the following elements:

- there are no needs justifying the realization of a network of heat or cold,
- there are no large consumer establishments (industry) justifying the creation of a large energy production unit or the pooling of production resources (co-generation),
- the climatic conditions offer the opportunity to exploit the radiative energy of the sun.
  
- Climate adaptation
- Renewable energies
- Urban Lighting
- Low-carbon materials/ infrastructure
- SmartGrids

## Contest

### Reasons for participating in the competition(s)

#### Approach and process: do the project differently

- 1. Build the human aspect of the project: through association and consultation with the inhabitants from the beginning and throughout the life of the project. By a project management and working methods in team project (Committee DD, visits, animation ...).
- 2. Accompany residents in uses to fulfill the sustainable development objectives of their neighborhood: 5% of the area is landscaped gardens or 1.7 Ha, waste management (voluntary intake points and compost), the Smart system Grid allows the inhabitant to follow his energy consumption, this innovative system aimed at energy efficiency should be deployed in the heart of the city connected to measure all uses (water,

electricity, gas, waste, ...) .

### **Living environment and use: improving everyday life**

- 3. Allow everyone to live in the city center: social mix as a priority, with constructions without social markers.
- 4. A city center that is betting on soft mobility (pedestrian traffic, TCSP, bicycle lanes and parking, ...).
- 5. More convivial living and meeting places in the heart of the city with a landscaping island strategy of freshness that promotes wandering.

### **Territorial development: boosting the territory**

- 6. A project factor of activities and jobs in the territory, during construction and use.
- 7. A real business dynamic in the heart of the city with local shops and services, urban catering to meet the needs of the 5000 new inhabitants expected in the heart of the city.
- 8. An interconnection to succeed with other neighborhoods and strategic axes of the city to make the operation a downtown for all Possessionnais.

### **Conserving resources and adapting to climate change, responding to the climate and environmental emergency**

- 9. Bioclimatic approach and energy efficiency strategy in buildings (certification of energy saving, thermal comfort, choice of materials and local sectors).
- 10. Ecological design of planted areas and hygrothermal comfort of the facilities, preservation and enhancement of existing biodiversity. 1/3 of the city center will remain planted. A real inhabited park stands between the coast and the remarkable site of Mafate, Unesco World Heritage.