



Sustainable Green-Office Design
at Curaçao's prime Location
Arrarat Top-Hill



Building Location

Caribbean and Curacao

The project will be located on Curacao the largest island of the former Dutch Antilles

Traffic ring and prime location

The site is located next to one of Curacao's busiest roads. The terrain is elevated due to the fact that it is located on arrarat hill. Along the borders of the hill the sides have been clad with natural rocks. The location is clearly visible from all angles

Visibility & accesibility

The visibility of the proposed building will be noted because of its own height combined with the height of ararat Tophil. In the design the building is also oriented in a certain way that whilst driving through the bend of the road it will be visible from many angles and viewpoints, making a strong statement. Clientele and partners will easily see the office and be impressed by the statement it makes.



Building Design

Building Concept & Volumes

In order to maximize visibility and sunlight orientation the building was placed onto the terrain with a slight curve. This makes the concept stand out from other buildings on the island due to the fact that the building is pointing its volumes towards the magnificent views of the ocean, city and roads that surround it.

The project consists of 2 buildings. The left tower and the right tower.

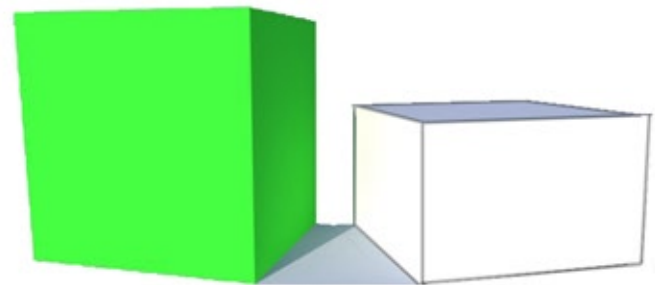
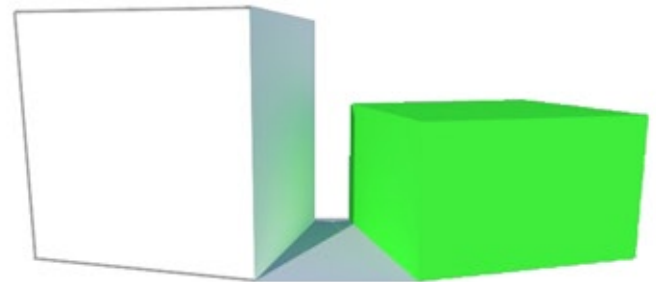
The project has a total of 1700 sqm rentable floor space separated over the 2 individual buildings.

The right tower has 2 layers (500 m²) + 1 parking layer
The left tower has 4 layers (1200 m²) + 1 parking layer

The floors are 300 sqm leasable floor area.
Each floor has an additional 50 sqm for elevators, stairs, restrooms and ICT department. (service)

There are 2 separate buildings to rent. The left wing and the right wing of the project.

Tenants could lease the right or left tower separately or lease the entire project.



Modern, sustainable and green architecture

In order to give the building a futuristic and natural feeling to it, our design team has put gardens in, through, around and ontop of the buildings. Combined with modern architectural design and energy friendly design this building will become an example for others. The idea of the building is to provide extra luxury and comfort while reaching a higher level of sustainability and obtaining LEED certification. Through the use of green architecture throughout the building, high open spaces will be created where employees can relax during lunch and enjoy the marvelous views and be surrounded by a natural environment within the building itself.



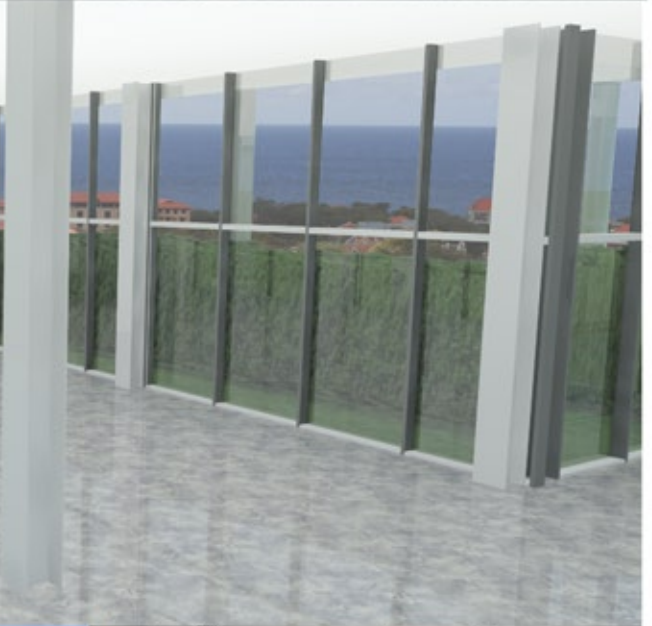
Building Design

Unique and monumental design



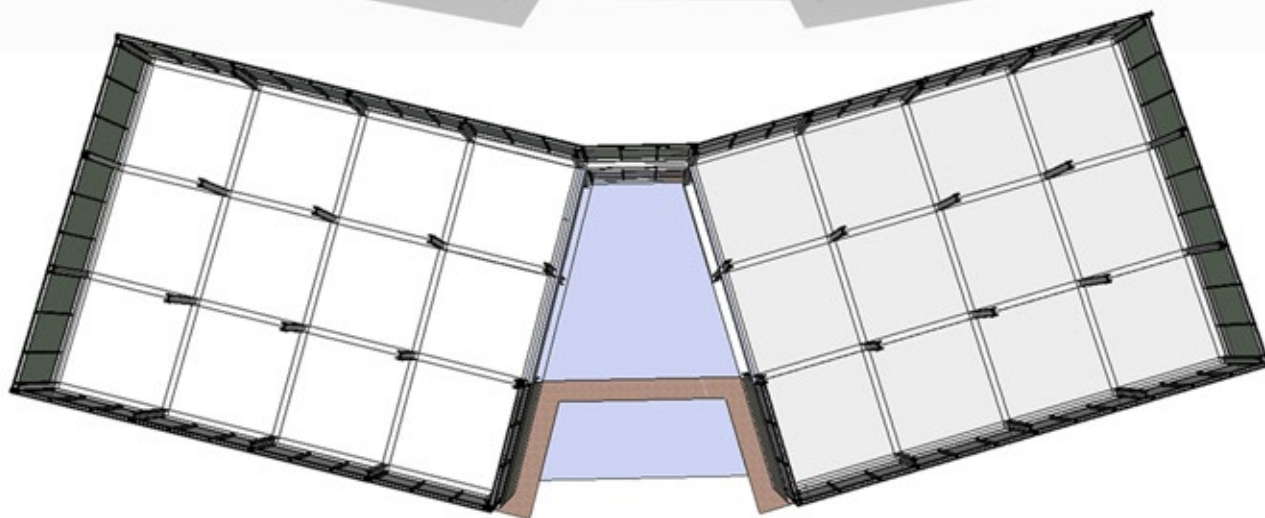
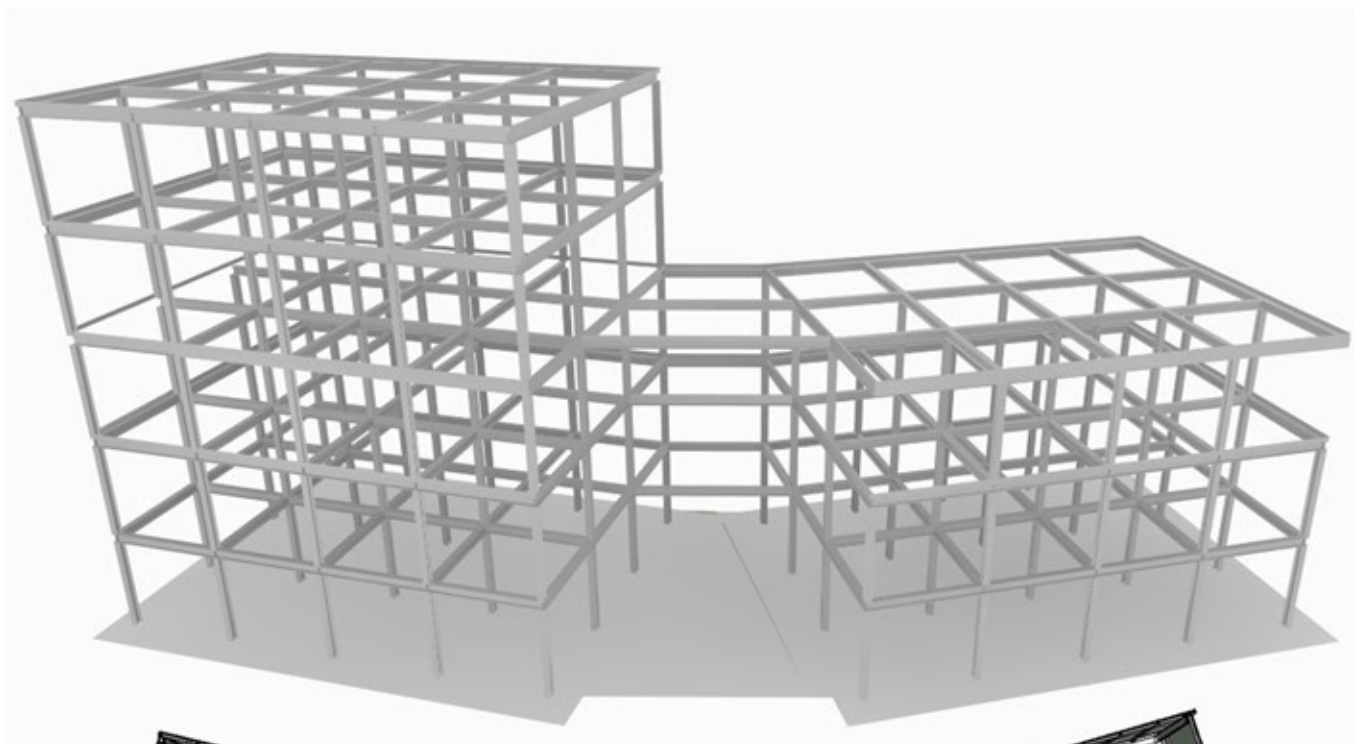
Building Design

Luxurious and comfortable office space and interior design

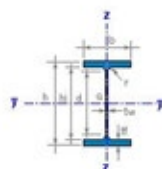


Building Design

Steel construction



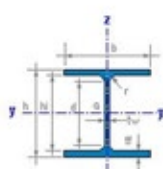
IPE 400



$h = 400 \text{ mm}$	$t = 21 \text{ mm}$
$b = 100 \text{ mm}$	$d = 331.0 \text{ mm}$
$t_w = 8.6 \text{ mm}$	$H = 373.0 \text{ mm}$
$r = 13.5 \text{ mm}$	

$A = 84.5 \text{ cm}^2$	$M = 66.3 \text{ kg/m}$
$I_y = 23131 \text{ cm}^4$	$I_z = 13118 \text{ cm}^4$
$W_y = 1156.5 \text{ cm}^3$	$W_z = 146.4 \text{ cm}^3$
$W_{ply} = 1307.3 \text{ cm}^3$	$W_{plz} = 229.0 \text{ cm}^3$
$i_y = 16.95 \text{ cm}$	$i_z = 3.95 \text{ cm}$
$It = 51.3 \text{ cm}^4$	$I_w = 492149 \text{ cm}^6$
$S_y = 653.6 \text{ cm}^3$	$Avz = 42.70 \text{ cm}^2$
$sy = 35.4 \text{ cm}$	
$AL = 1.467 \text{ m}^2/\text{m}$	$AG = 22.12 \text{ m}^2/\text{m}$

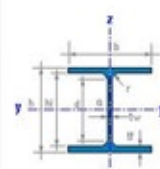
HEA 400



$h = 390 \text{ mm}$	$t = 27 \text{ mm}$
$b = 300 \text{ mm}$	$d = 298.0 \text{ mm}$
$t_w = 11.0 \text{ mm}$	$H = 352.0 \text{ mm}$
$r = 19.0 \text{ mm}$	

$A = 159.0 \text{ cm}^2$	$M = 124.8 \text{ kg/m}$
$I_y = 45073 \text{ cm}^4$	$I_z = 8564 \text{ cm}^4$
$W_y = 2311.4 \text{ cm}^3$	$W_z = 570.9 \text{ cm}^3$
$W_{ply} = 2562.0 \text{ cm}^3$	$W_{plz} = 872.9 \text{ cm}^3$
$i_y = 16.84 \text{ cm}$	$i_z = 7.34 \text{ cm}$
$It = 193.2 \text{ cm}^4$	$I_w = 2946836 \text{ cm}^6$
$S_y = 1281.0 \text{ cm}^3$	$Avz = 57.34 \text{ cm}^2$
$sy = 35.2 \text{ cm}$	
$AL = 1.912 \text{ m}^2/\text{m}$	$AG = 15.32 \text{ m}^2/\text{m}$

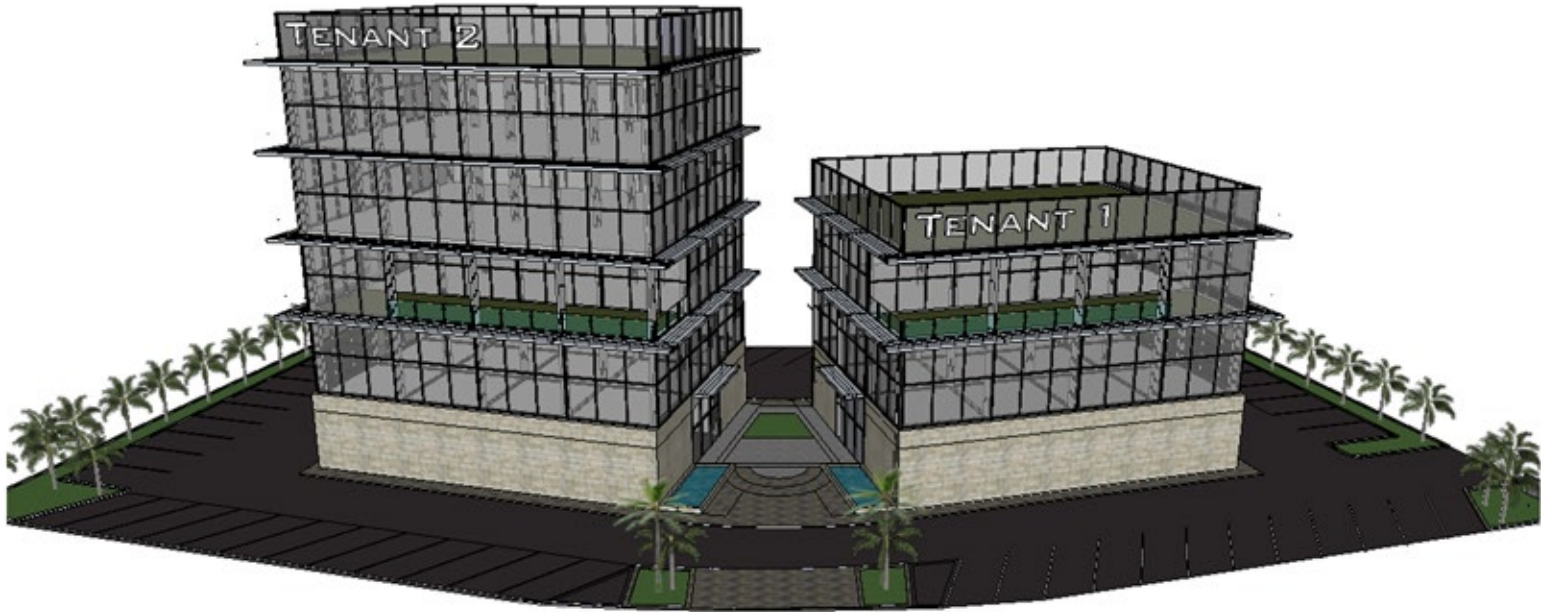
HEB 400



$h = 400 \text{ mm}$	$t = 27 \text{ mm}$
$b = 300 \text{ mm}$	$d = 298.0 \text{ mm}$
$t_w = 13.5 \text{ mm}$	$H = 352.0 \text{ mm}$
$r = 24.0 \text{ mm}$	

$A = 197.8 \text{ cm}^2$	$M = 155.3 \text{ kg/m}$
$I_y = 57684 \text{ cm}^4$	$I_z = 10819 \text{ cm}^4$
$W_y = 2884.2 \text{ cm}^3$	$W_z = 721.3 \text{ cm}^3$
$W_{ply} = 3231.9 \text{ cm}^3$	$W_{plz} = 1104.0 \text{ cm}^3$
$i_y = 17.08 \text{ cm}$	$i_z = 7.40 \text{ cm}$
$It = 361.0 \text{ cm}^4$	$I_w = 3823884 \text{ cm}^6$
$S_y = 1616.0 \text{ cm}^3$	$Avz = 68.99 \text{ cm}^2$
$sy = 35.7 \text{ cm}$	
$AL = 1.927 \text{ m}^2/\text{m}$	$AG = 12.41 \text{ m}^2/\text{m}$

Phased Development



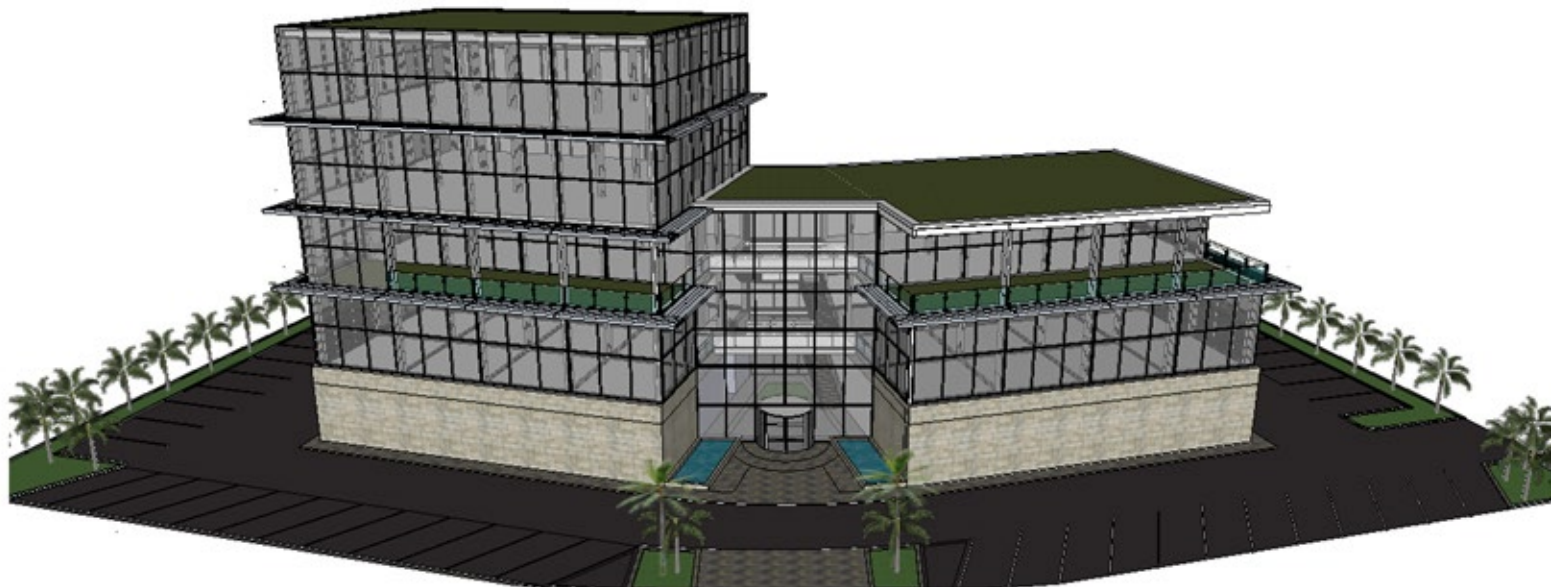
Phase 2 1200 m2

4 floors + parking + terraces

Phase 1 500 m2

2 floors + parking + terraces

Combined Development



1700 m2

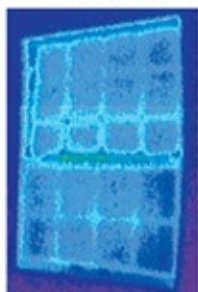
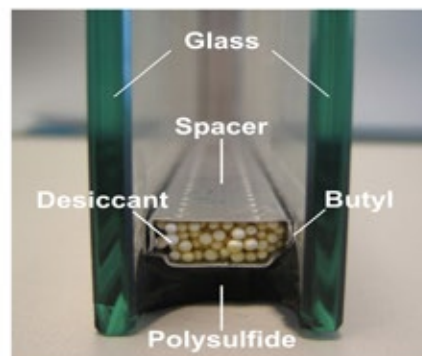
Large lobby + 2 long floors + 2 high floors + terraces

Tenants will be able to rent separate floors and separate buildings depending on their company profile and corporate identity preferences. The design of the steel structure and floors provide the possibility to adapt to each tenant.

Building Performance

Green building is on the rise around the world, through a mix of voluntary certification and mandatory requirements.

Performance Glass curtain wall.



More Solar Heat Transmitted
Heat Scale
Less Solar Heat Transmitted



Solarscreen Low-E (VE) Insulating Glass (example) VE 3-2M (With or Withouth Argon fill)

Performance Data

Metric | English Product Code View Legend VE 3-2M
Transmittance Visible Light 35% Solar Energy 17% U-V* 4%

Reflectance

Visible Light-Exterior6% Visible Light-Interior 10% Solar Energy 12%
NFRC U-Value Winter 0.29 Btu/(hr x sqft x °F)
Summer 0.26 Btu/(hr x sqft x °F) European U-Value (1,2/1,5)
Shading Coefficient 0.28 Relative Heat Gain 59 Btu/(hr x sqft)
Solar Factor (SHGC) 0.24 LSG



The glass wall performance will be increased with 3 main principals

1. High insulating Value keeping cool air inside warm air out
2. Low/E Values reflecting suns radiation.
3. Blocking the suns direct contact by using Louvres outside without losing visibility

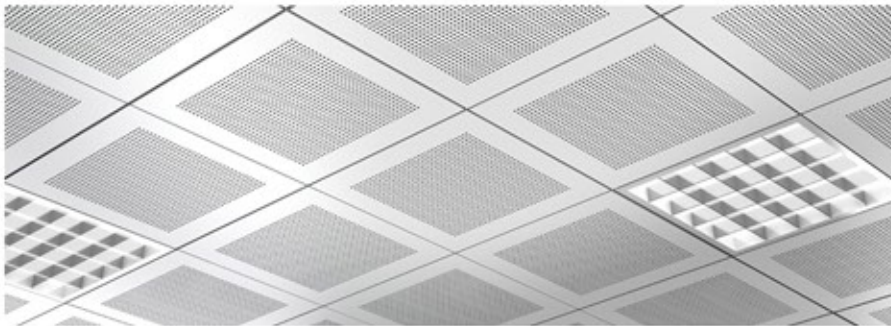
Building Performance

Performance and specifications of roof and ceilings



Various styles of ceiling available.(Must meet energy and Leed standards)

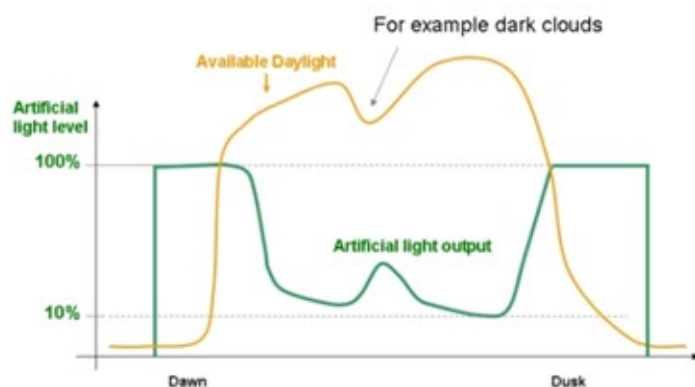
We work with metal grid systems for optimal use of airconditioning and lighting programmes



HunterDouglas



Daylight harvesting and lighting



To efficiently light the building much sunlight will be harvested by using the sunlight curacao has an abundance of. To regulate light usage and monitor of there is sufficient lighting in a space automation sensors will be placed in the building to regulate and efficiently turn artificial lighting on or off. The artificial lighting system will consume low energy by use of LED-lighting.



Building Performance

Energy plans, efficiency and usage.



1 Energy saving.

Through the design and installations of the proposed building alot of unwanted energyloss will be prevented. The main reason for the building to perform better is because of the fact that all energy saving and consuming aspects are taken into consideration in the building design, construction and usage phases. It is our goal to design, build and provide a product of the future which will be better for the environment, and have much lower energy consumption per square meters than conventional buildings on Curacao ensuring the satisfaction of our tenants.

The Trias Energetica concept:
the most sustainable energy is saved energy.



Money Isn't All You're Saving

1 Reduce the demand for energy by avoiding waste and implementing energy-saving measures.

2 Use sustainable sources of energy instead of finite fossil fuels.

3 Produce- and use fossil energy as efficiently possible.

2 Energy plans

The building and site have many possibilities for a solar energy plan. If the tenant wishes renewable energy systems. A solar energy panel system can be installed on the roofs of the building. This can be done in cooperation with DREM.nv so the price and/or Lease agreement can be adjusted to such. A solar energy system is ideal for any office noting that office hours are during the day when the sun is bright on curacao.

