A178368 D

DIFFERENT – DYNAMIC – DEVELOPMENT

Another way to understand reality,

URBAN AGRICULTURE / solution for the future

Urban development during the last decades has been regulated from the exclusive city logic; and not built spaces have been considered as empty in the productive urban plot, waiting to be built.

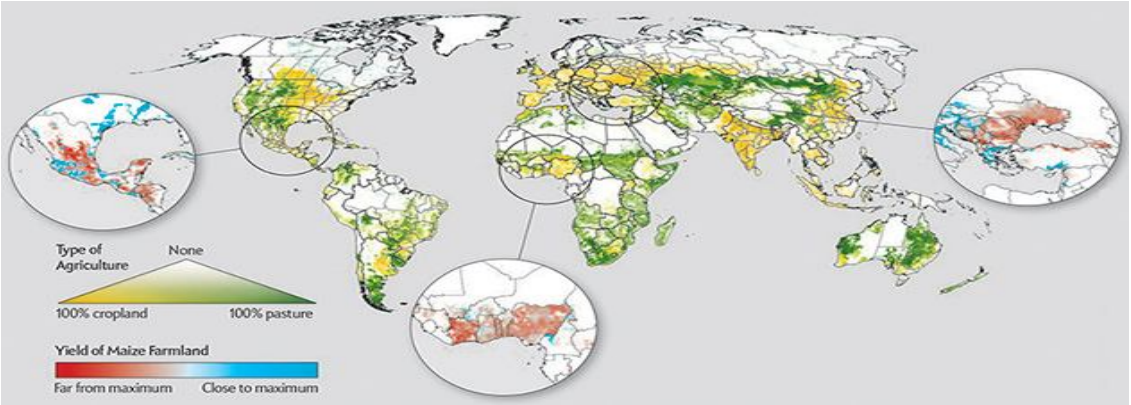
However, in relation with the best tradition of classic urbanism, the way of thinking and acting is reversing, giving green or ecological structures a decisive role in urban life.

Sight from the other canal bank. THE LITTLE MERMAID.

Our proposal is the transformation of this empty area into a great agricultural and stock research and development centre, from a social evolutionary effectiveness:

In the year 2050 A.C. or even before, population in Earth will have grown in about four billion people.

Many more mouths will be looping for food. Vegetable and meat production will turn into insufficient.



Our proposal develops today possible solutions to attend these imminent problems.

Our objective is to reorganize the cities in which we live in, so that we can get enough fresh food products in the proximities.

ACTUAL CONDITION. FUTURE.

Nowadays, more than one billion people are suffering chronic hunger, even though there is still enough food production each year to feed all mankind.

Actual consideration of food as merchandise to speculate with, price rising and an inadequate distribution, make the current situation very difficult to be changed.

Driven by the economic dictatorship of markets and investors, and due to the consideration of food as a good to speculate with, escalating prices and a wrong distribution, it becomes this perverse situation as something very difficult to change.

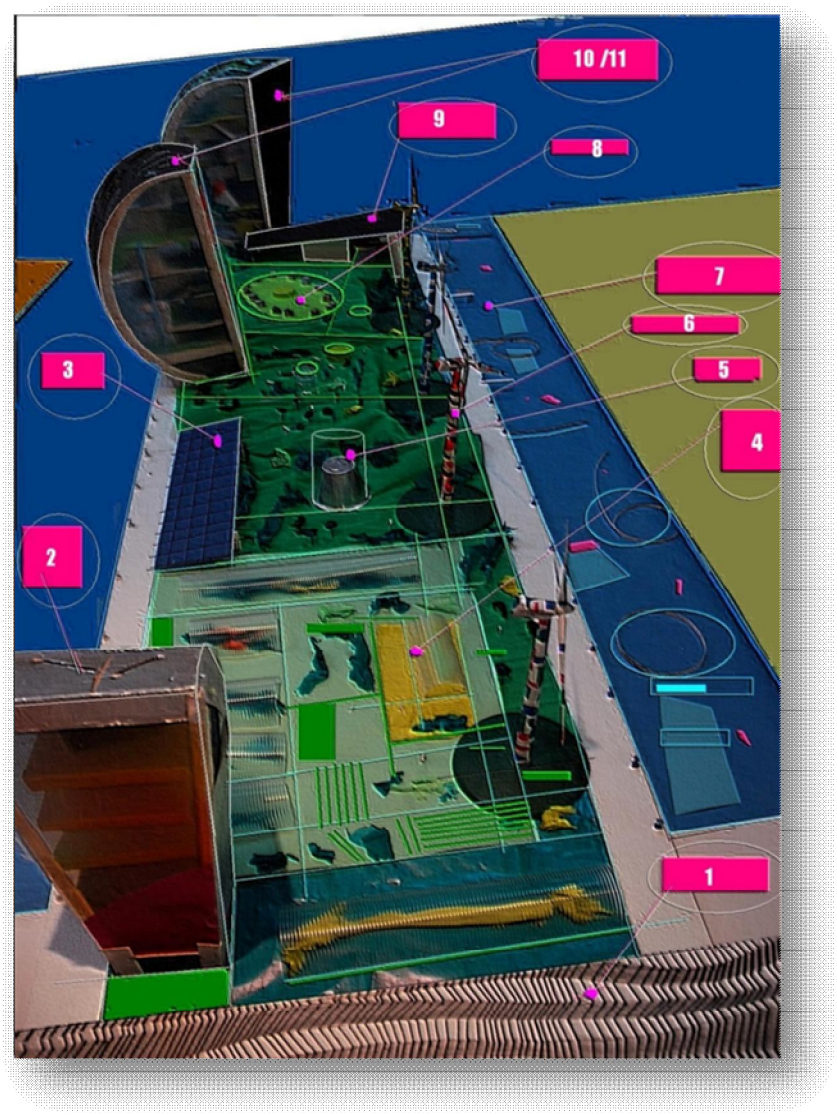
Together with the great land specialization of fertile land and competence with other (and more profitable) activities such as biofuel and textile fibre, new exigencies are being imposed to the production of food. Intense cultivation of land has also subtracted agricultural ability, and so it is now really important a better scientific organization of the agricultural, in which complementary nutrients for land has become an essential condition.

Also, as the environmental expert Jonathan A. Foley has wroten in an article in Scientific American,

> *Land used for farming already uses a great percentage of non-oceanic surface, reaching about 38% of the Earth surface. This has as a result forest deforestation and destruction of the natural environment, essential for the survival of plants and animals. The ongoing destruction of biodiversity is one of the biggest problems that mankind faces in the beginnings of the 21st Century.*

For all this, it is necessary to study the ways to double food production to feed a population that will grow up to approximately to 12 billion people during the next 30 years.

So, our proposal “DEVELOPMENT – DYNAMIC – DIFFERENT” adjusts to future needs.



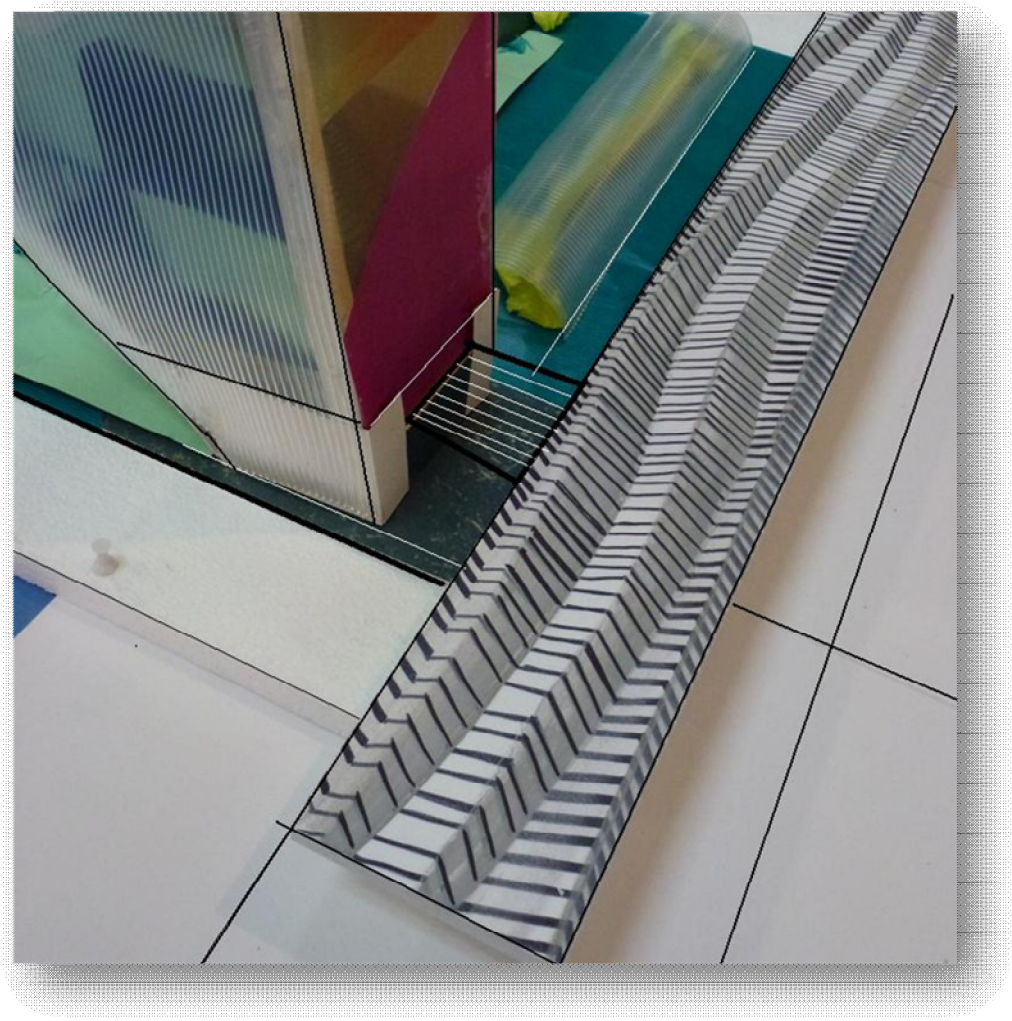
1 ----------Parking, entrances and exits.
2----------Reception building and administration offices.
3----------Warehouses, maintenance repair shops
4----------Greenhouses and open farms (seasonal production).
5 ----------Water and feed deposits for the farms.
6----------Wind energy generators (with blades and vertical axis turbines
7----------Fish farm for local species
8----------Groups of sculptural vegetable gardens for individual use.
9----------Waste processing and transformation into energy plant (bio-mass)
10 ----------Greenhouse building for agricultural uses – type A-
11 ----------Greenhouse building for agricultural uses – type A-

SECTION 1

Entries and exits to the farming group of buildings for collective experimental uses.

It will be equiped with a two-floor roofed parking for vehicles, and an open-roof space parking for private and public buses .

The roofed parking will be covered by an enclosure in which solar panels with different sizes will be installed. They will all form an easily expandable artistic mural.

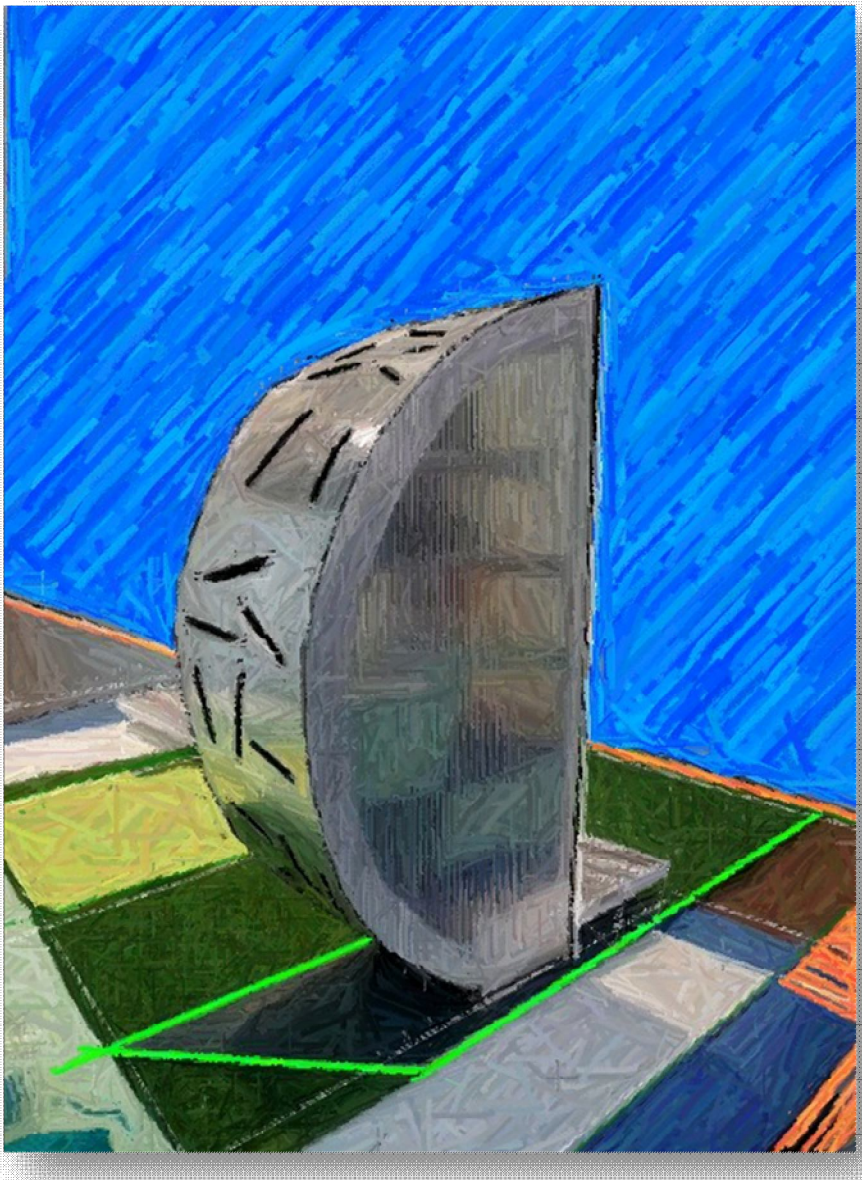


Entrance to the complex and two-floor roofed parking.

SECTION 2

BUILDING 1

Destined for administration, management and interpretation centre uses.

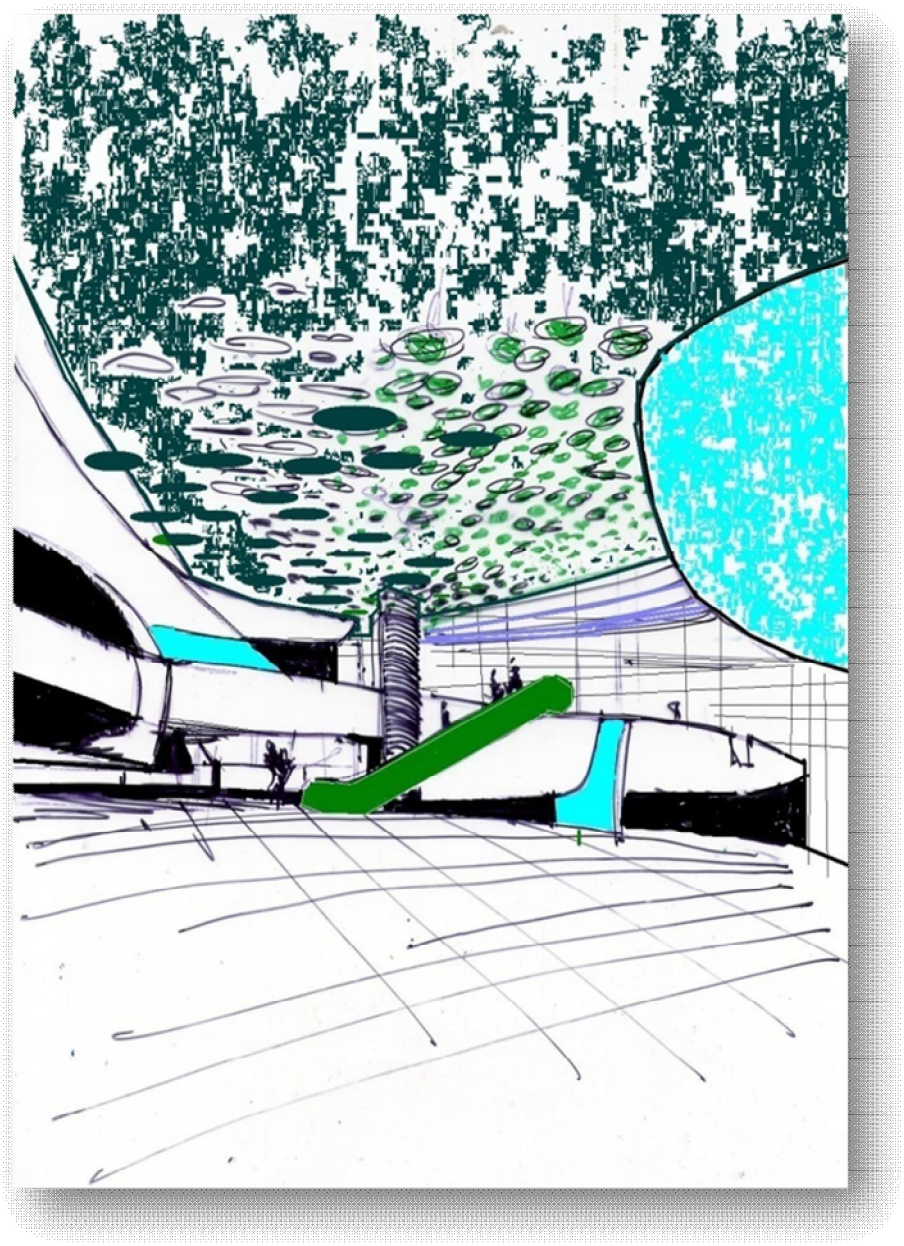


GROUND FLOOR

Visitiors reception, conference lounge and manufactured products shop (produced at the collective use agro-urban farms).

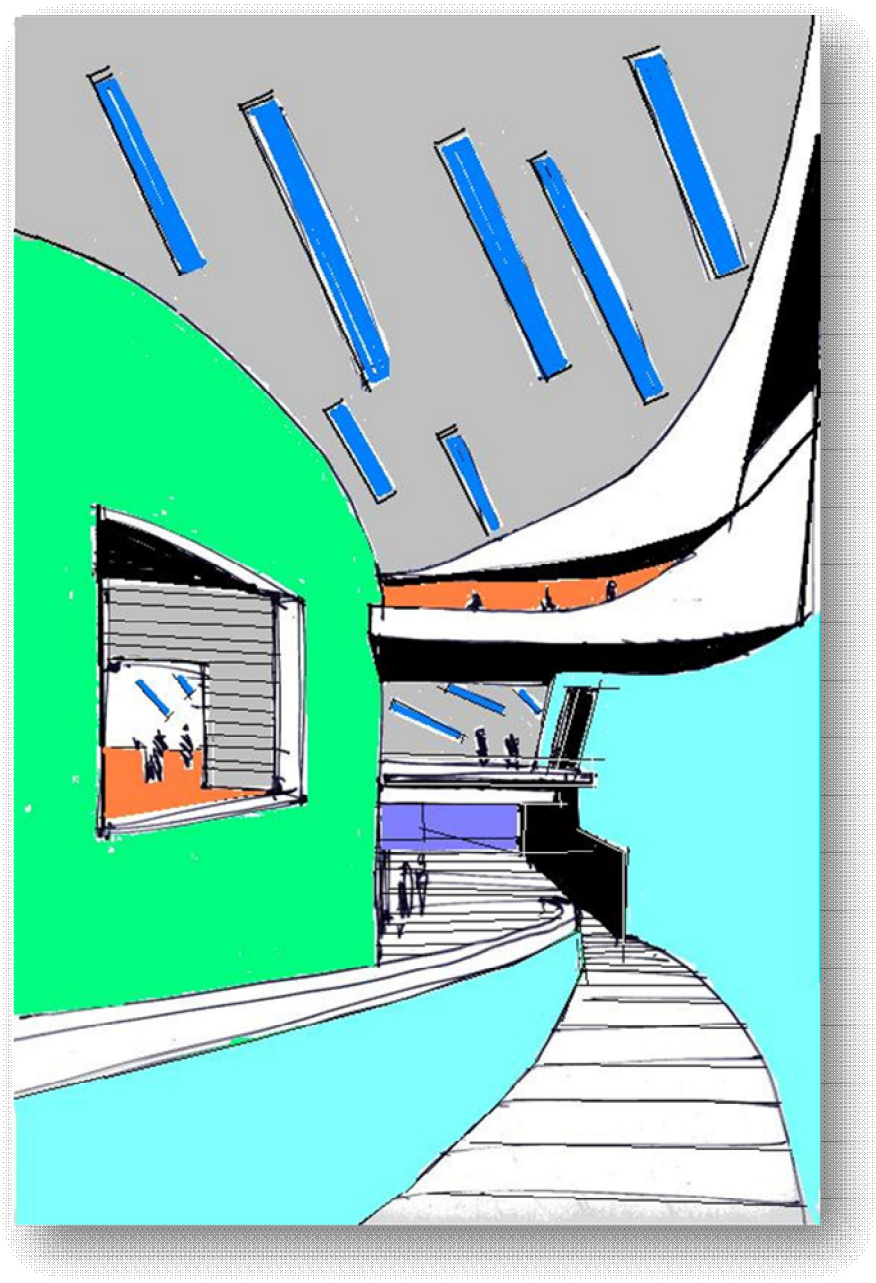
Cafeteria and services. Childcare service. Visitors and goods control halls.

Building 1



Hall, building 1: Visitors entrance. Interpretation Centre. Conference lounge and biological manufactured products shop (produced at the collective agro-urban farms). Cafeteria and services.

Upper floors: administration and management offices, informatics planification for control and management of all farms.



Shared spaces distributors.

Building 1 will also have meeting points for members of cooperatives and management offices, as well as social lounges for planning tasks of the various production systems. The control centre and a panoramic vantage point (with views to the area assigned to an experimental agricultural complex) will be located on the upper floor.

SECTION 3

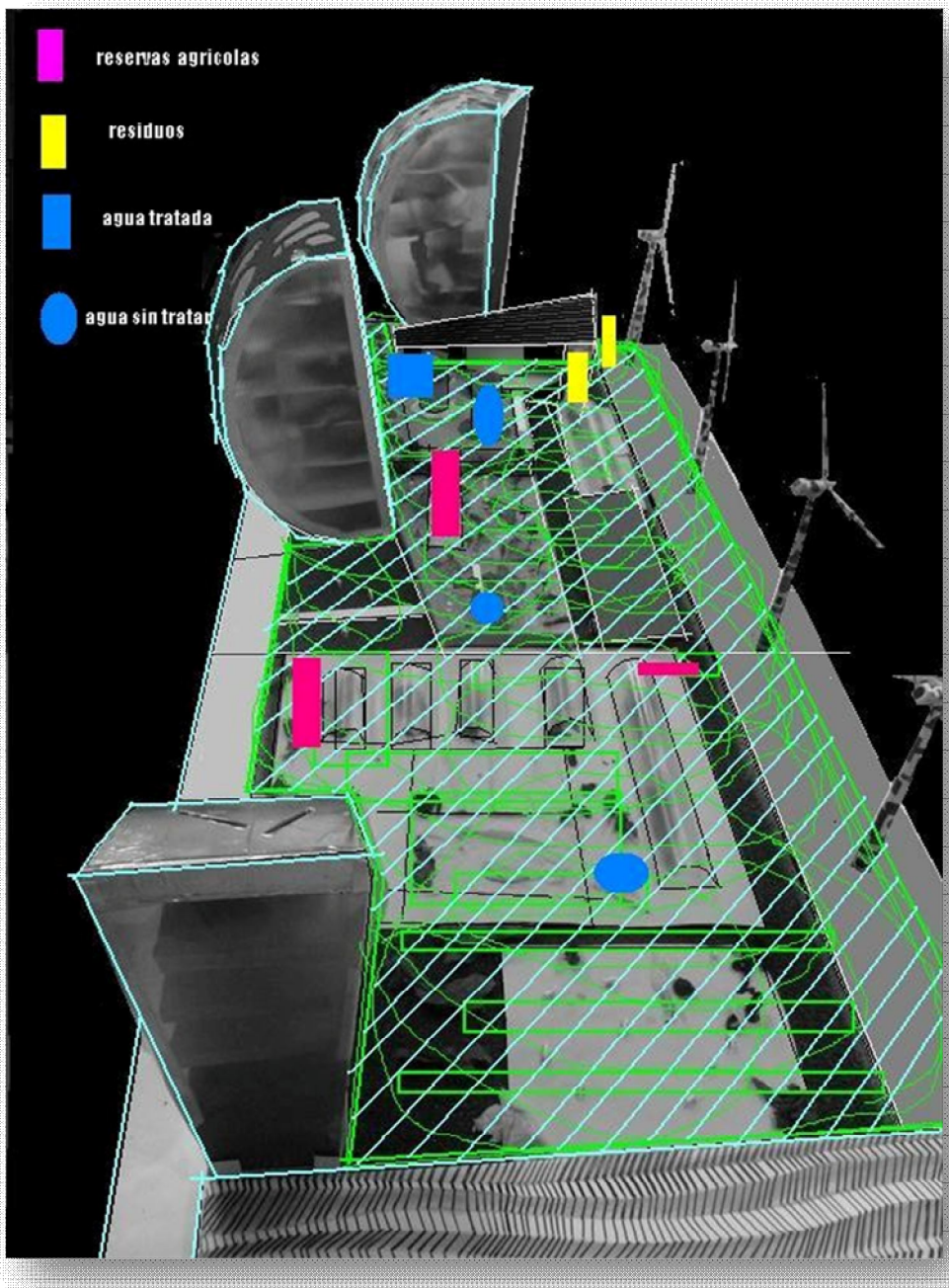
Warehouse for the reception and manufacturing of agricultural products.
Workshops for maintenance and handling of products.
Storehouse and garages for agricultural and maritime machines. Silos for fodder storage and drinkable water deposits.

SECTION 4

Vegetable patches, with open-roof warehouses and production areas for seasonal products.

Study of structuring spaces for seasonal crops. Will be developed in 2 floor zones or in common spaces 10 metres high and with ventilation skylights.

Areas for cattle: cows, sheeps and poultry.



SECTION 6

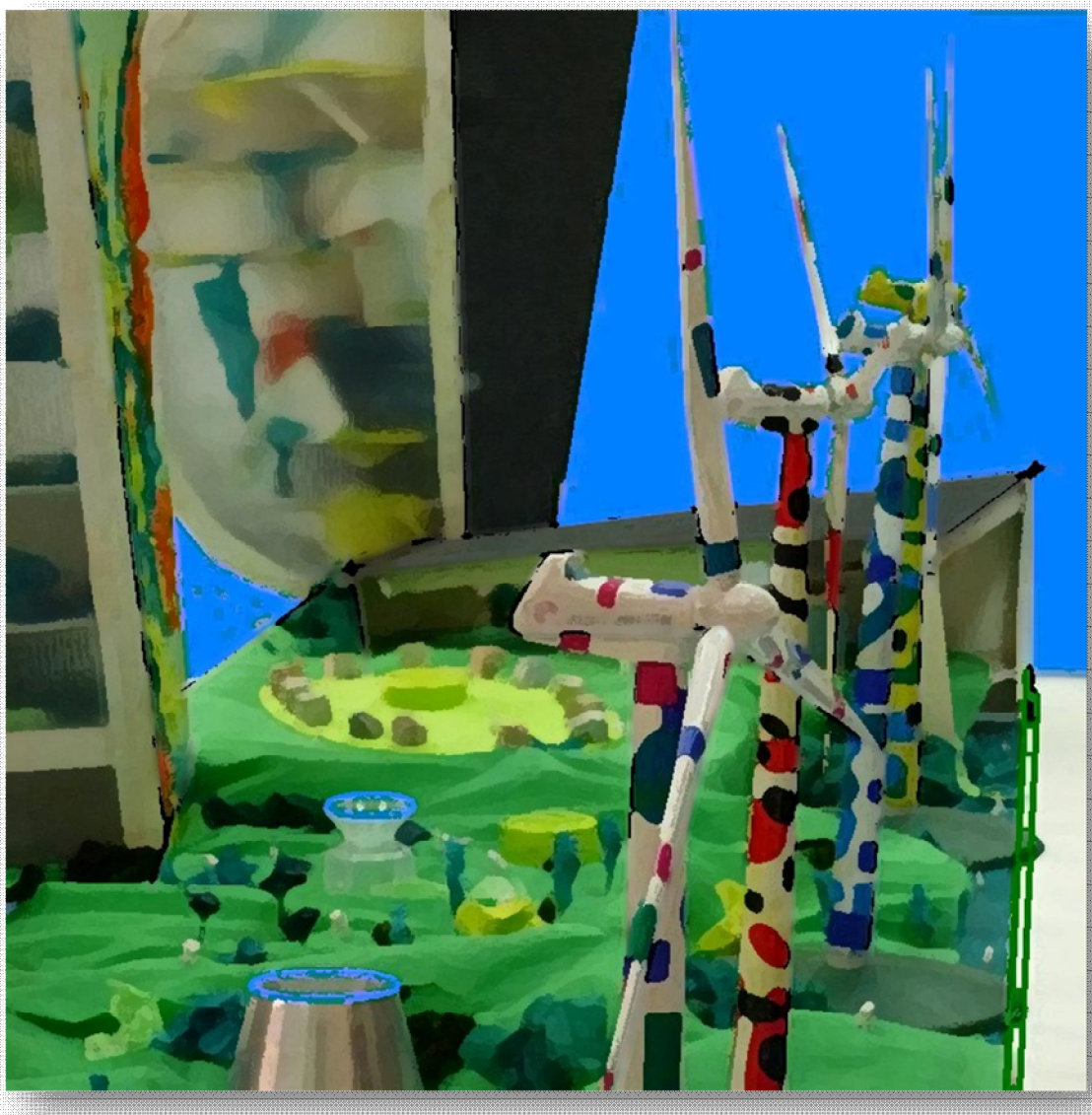
Energy attraction:

One Wind energy plant formed by 4 towers 74 metres high to be added to the rest of energy generation systems. This way, the complex will be self-sufficient.

Wind farm.

To be complemented with solar energy in:

Main parking roof
Warehouses roof
Plant of waste transformation roof
Front of south facade of greenhouse 1



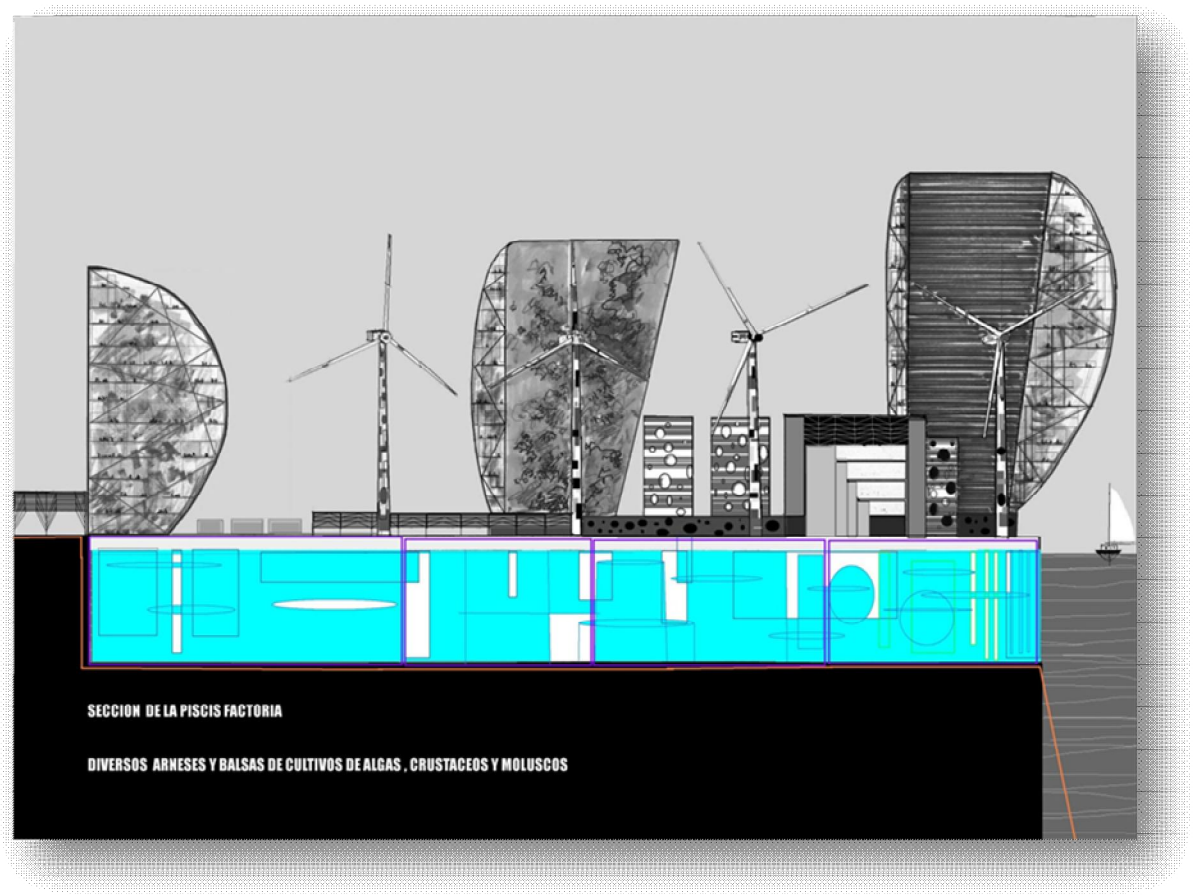
Wind plant

SECTION 7

FISH FARM

Use of one of the inner harbours of the old shipyards to create a fish farm, that would complement land farms:

Edible and therapeutic seaweed cultivation.
Mollusc cultivation
Crustacean and shellfish cultivation
Local fish cultivation



Fish farm, transverse section. Placed near the Canals by the old shipyards.

SECTION 8

Individual vegetable patches. Alive sculptures.

Technical card:

ECOLOGIC SCULPTURES & URBAN VEGETABLE GARDENS

Series of public sculptures as aesthetic and agro-urban solution.

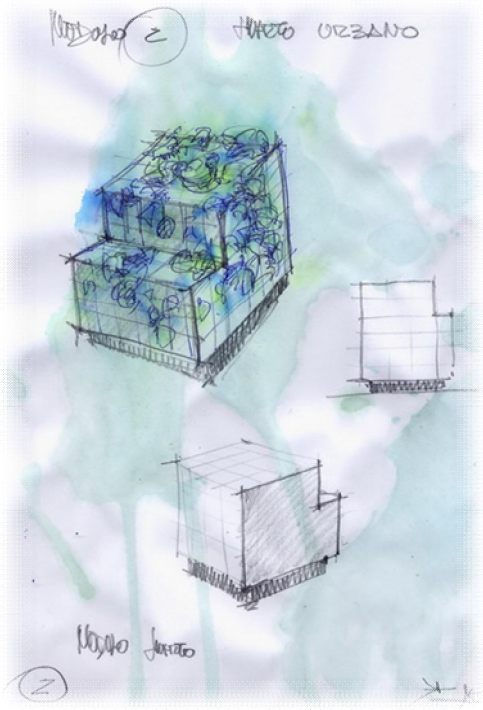
Sculptures made with galvanized steel chain mail

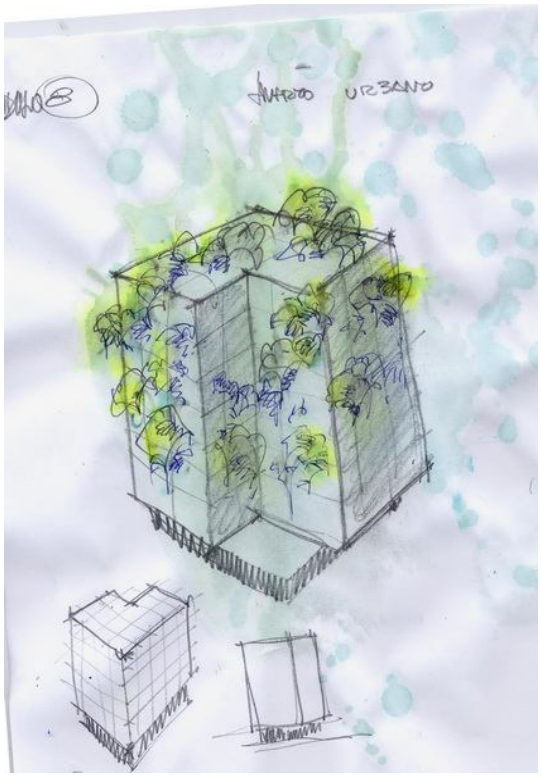
Measures: 1500 x 1500 x 1000 mm

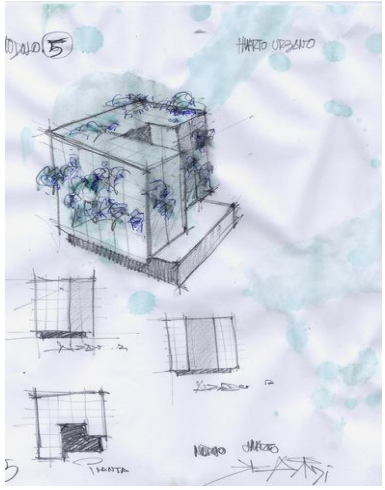
Basement with crown shape, made with concrete. Central area whit gravel drainage.

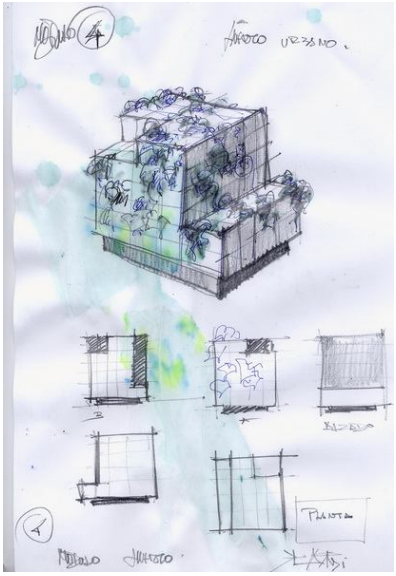
Inner closure through geo-textile fabric.

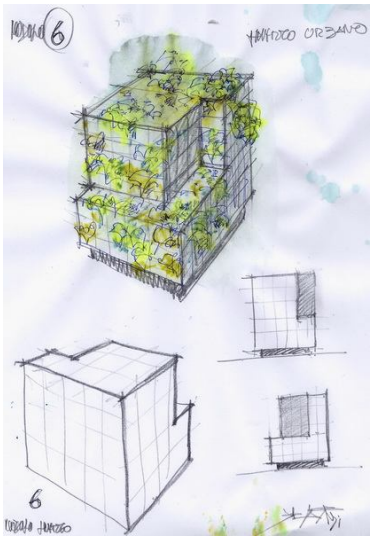
Structures filled with vegetable soil suitable for cultivation.









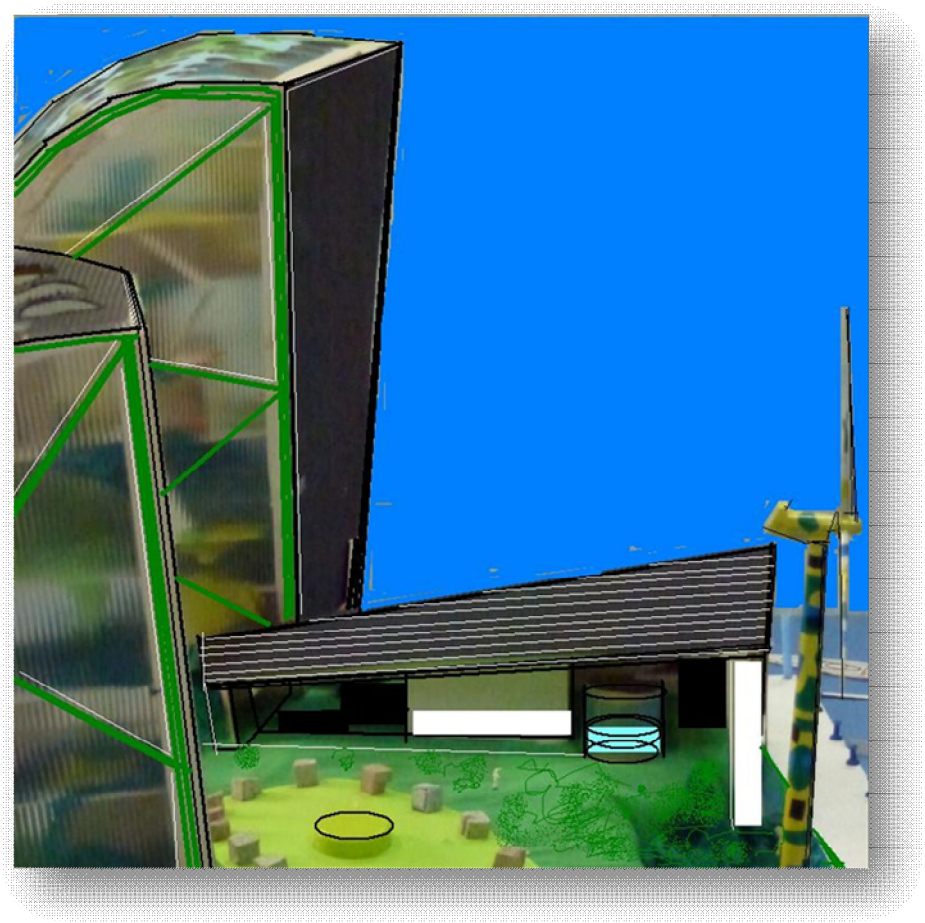


These elements will be dispersed in the outside and will be used by people or groups in order to make social consciousness-raising tasks.

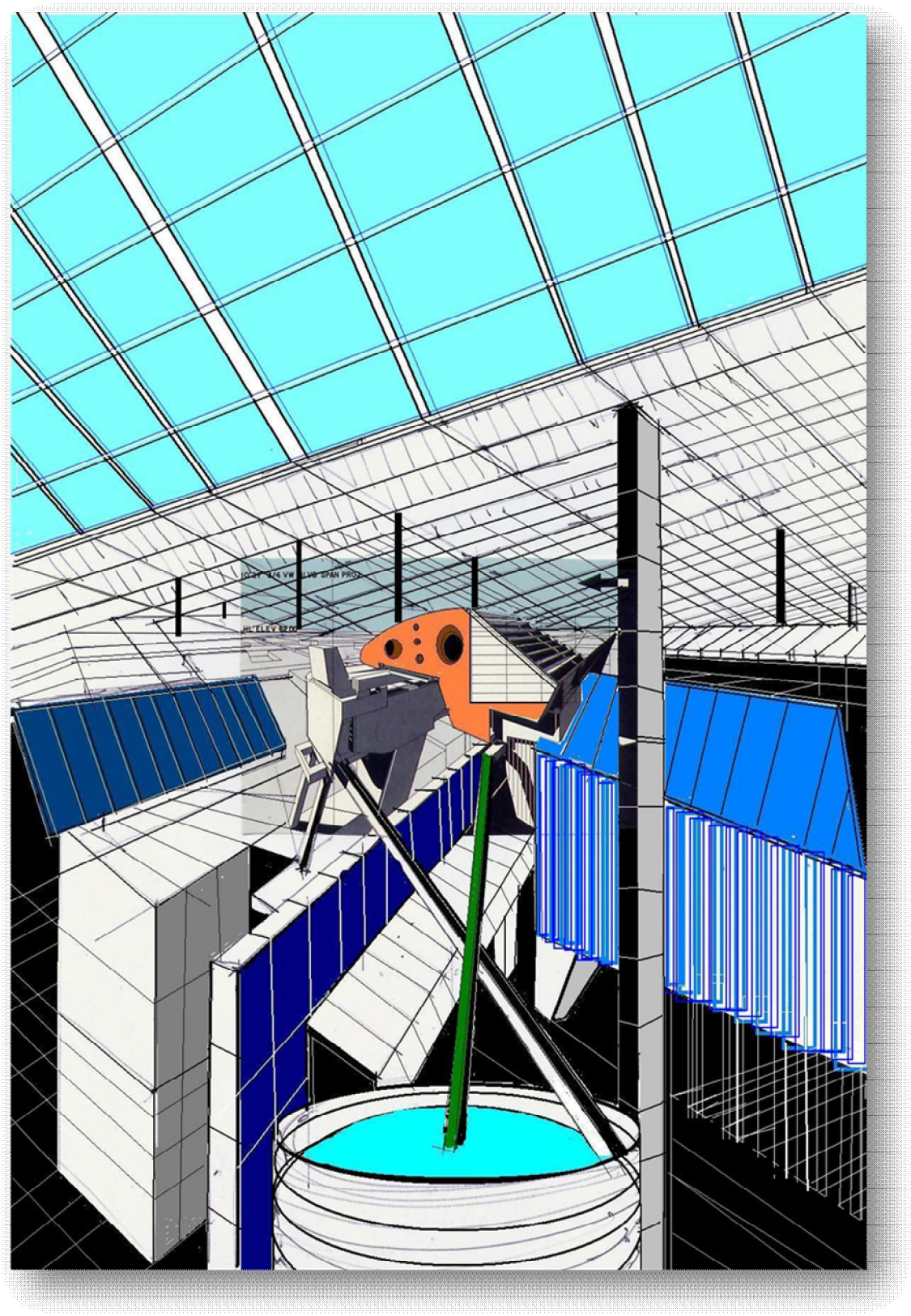
SECTION 9

Recycling plant and echo-generation central:

Mud processing central and small central for the transformation of biomass in heating energy, useful to maintain a stable temperature in the different buildings, offices, workshops, warehouses and greenhouses, both outdoor and in buildings 1 and 2.



Transformation plant of biomass and small central for filtering of sewage water, with solar panels in the roof.



Central for filtering of sewage water and organic wastes coming from the farms. Eco-generating energy central.

SECTION 10

BUILDING 1

VERTICAL AXIS GREENHOUSE

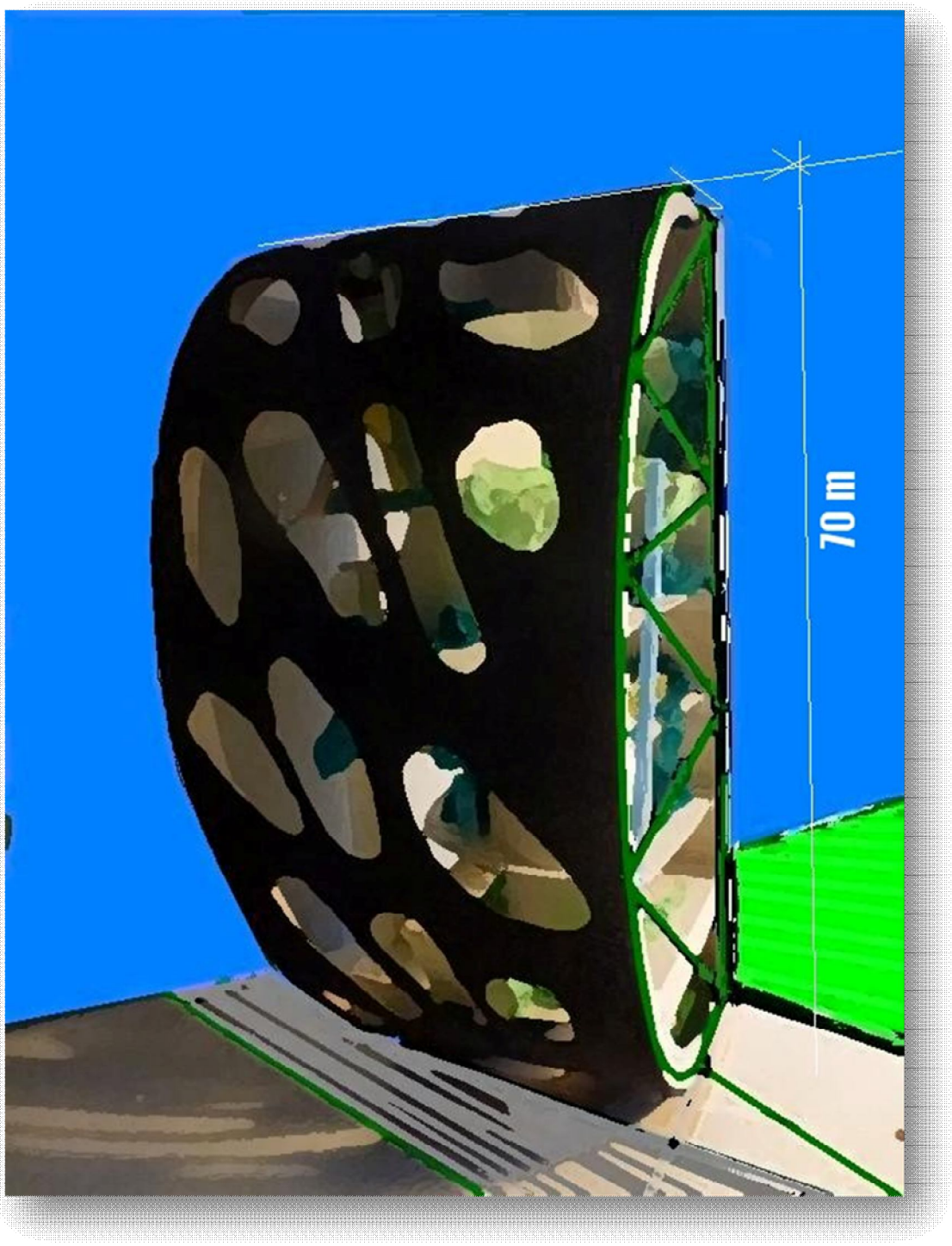
Destined to the cultivation of specific types of fruits and vegetables. It works through a hydroponic system with compost trays, suitable for crops that need poor vegetable substrate.

The building will be aimed to the production of very specific species. The space will be restricted, in order to avoid vegetable and bacterial pollution.

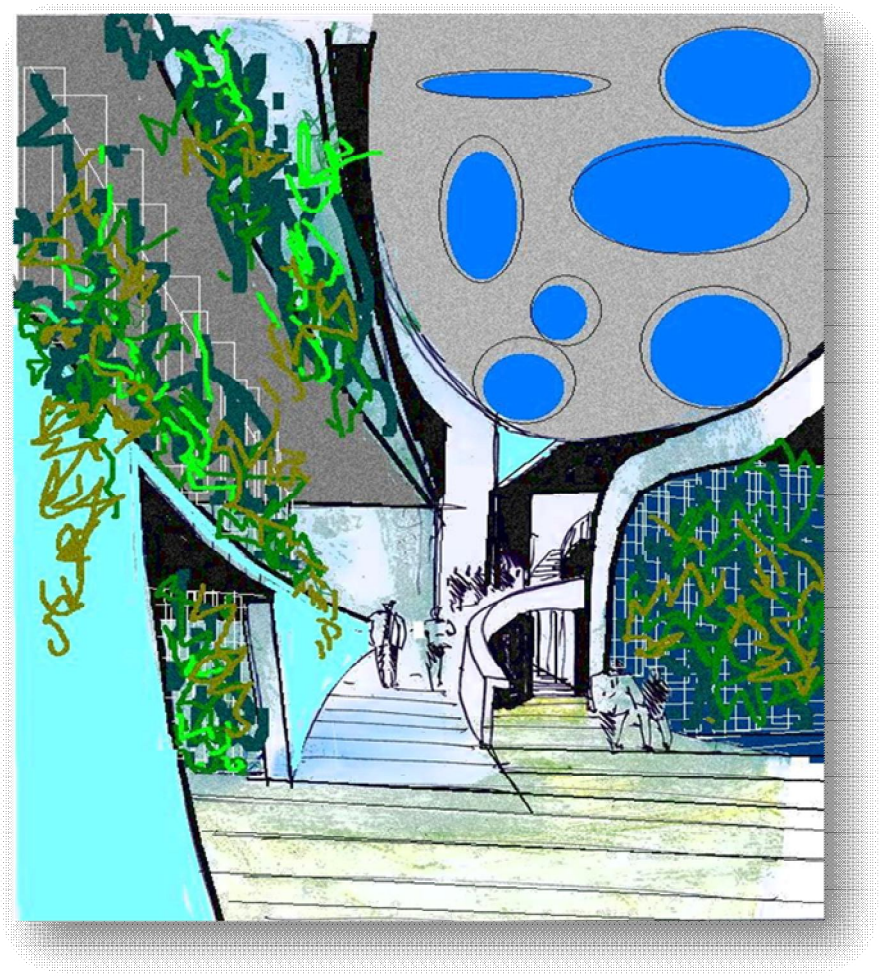
It will also be used to develop research and development intensive programs, as a great laboratory, so it will serve as a prototype to implement cultivation systems in non-adapted latitudes because of the climate.

Technical characteristics
High 70 m
Closure of the facade through a cortain-wall made with photovoltaic trays.

Sketch of the cortain-wall, south direction.



Greenhouse for vertical crops.



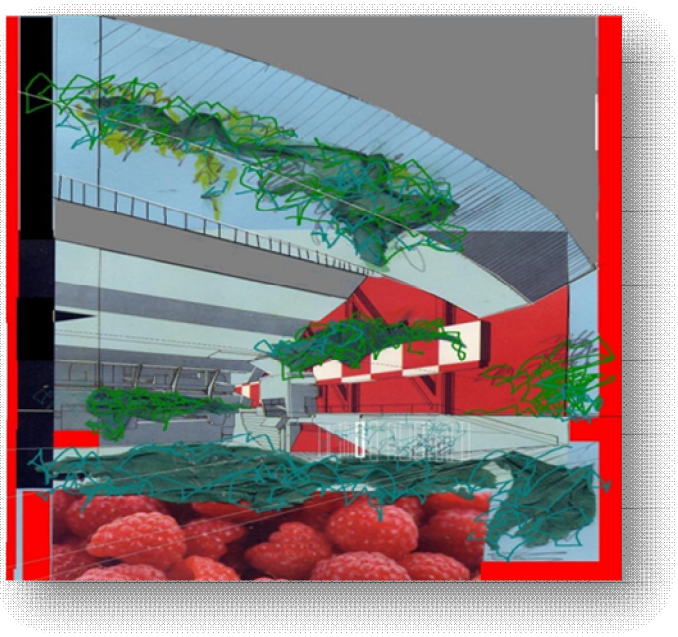
Crops with a high performance hydroponic system:

Social and urban agriculture is aimed at closing the production cycle of healthy and sustainable products, creating as a result a new dynamic.

Cultivation in vertical axis warehouses has between its objectives the promotion of social habits and also useful habits for the environment, health and economy.

The creation of “green employment”, rooted to territory, culture and natural environment, is also aimed to the production of proximity products that reduce food dependence and changes in the environment, as the conservation of non-renewable fertile soil and the promotion of biodiversity in genetic terms.

Sketch of the inside. Seasonal crops in constant cycles.



Detail of facade closures.

SECTOR 11

BUILDING 2

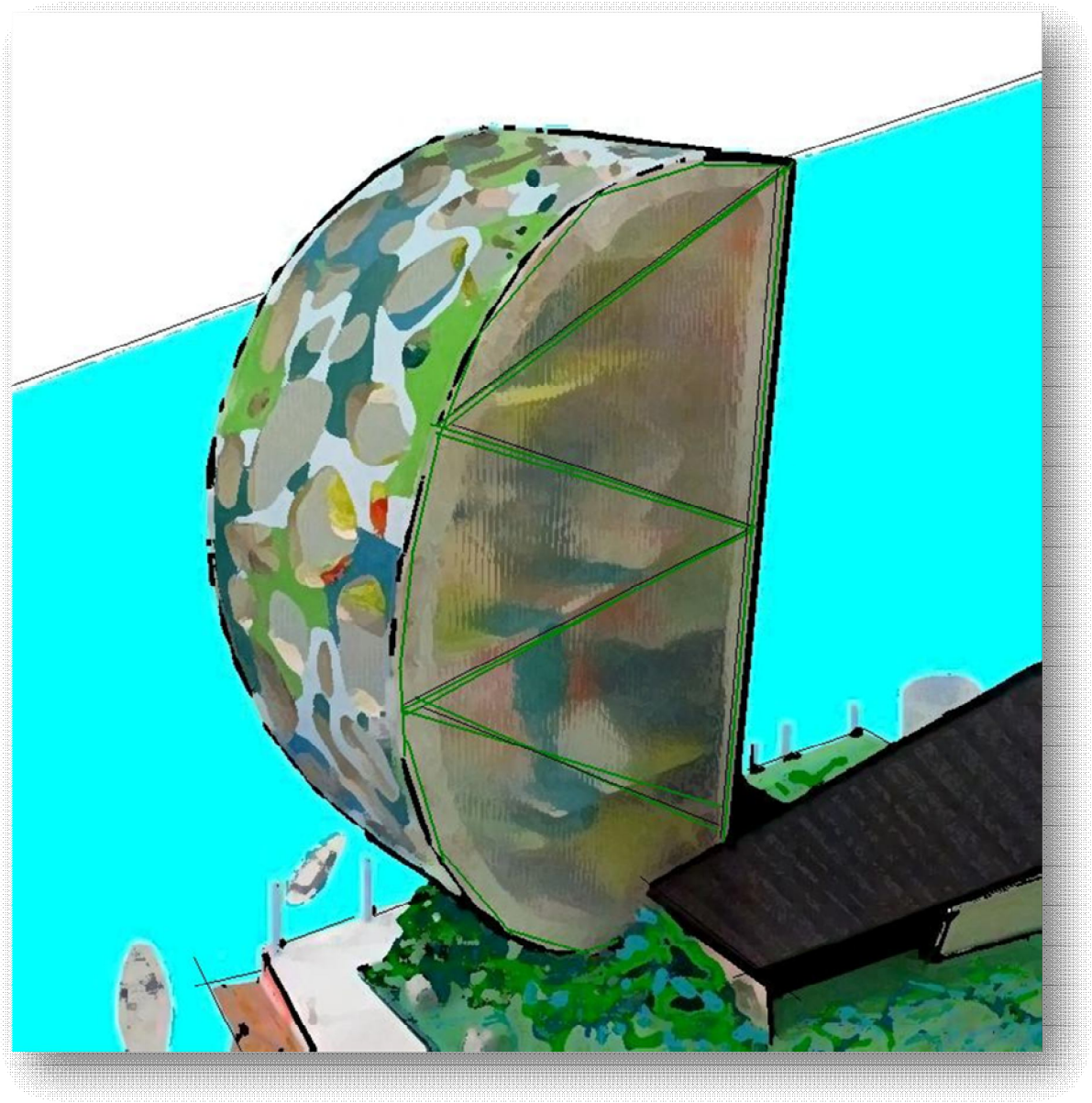
VERTICAL AXIS GREENHOUSE

Aimed to very specific cultivations of fruits and vegetables, hydroponic systems in compost trays and vertical axis crops, with little vegetable soil.

Characteristics:

100 m high

Production with be limited to few concrete species, in a restricted area to avoid vegetal and bacterial pollution.

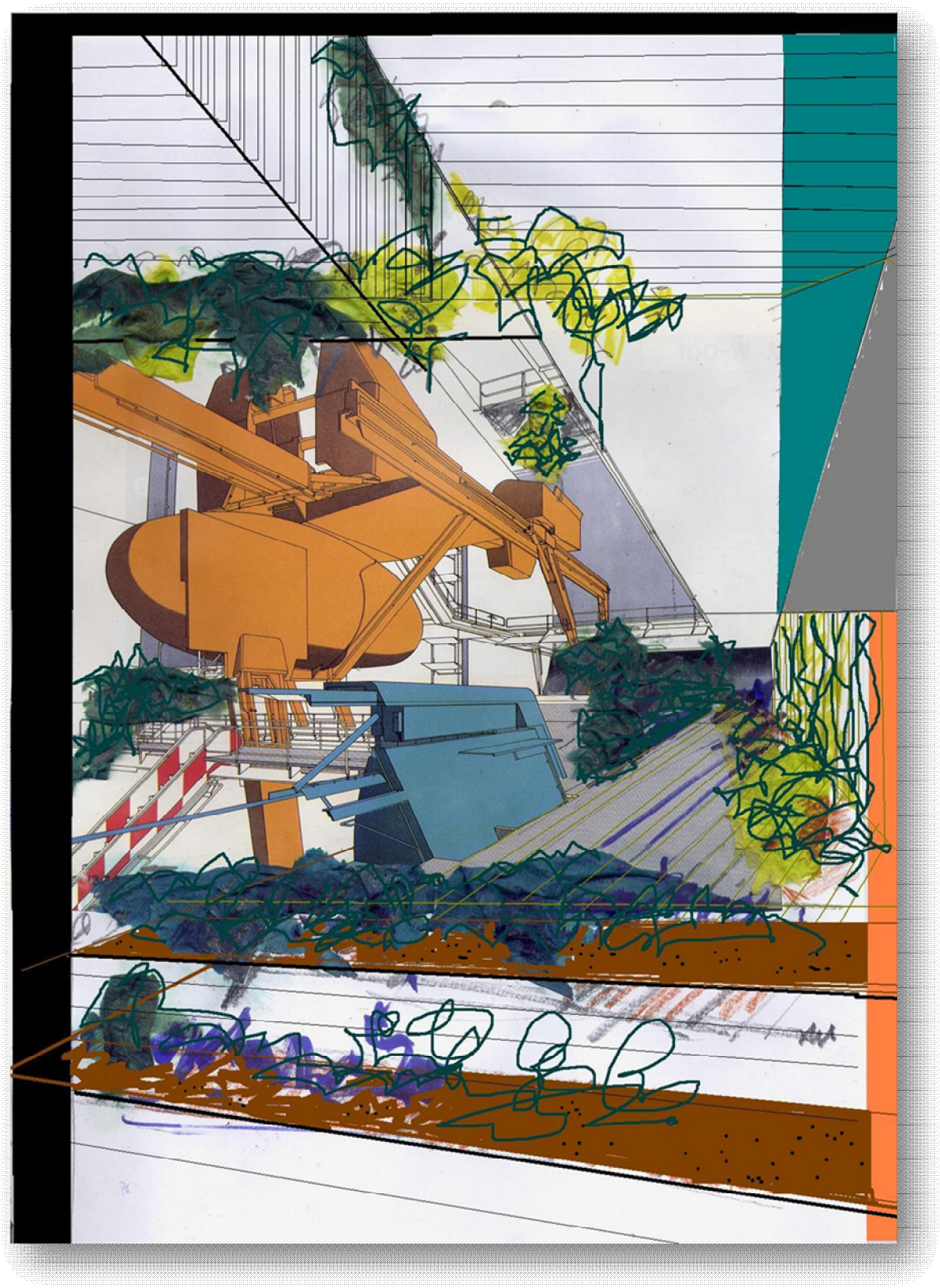


It will also be used to develop research and development intensive programs as a great laboratory, so it will serve as a prototype to implement cultivation systems in non-adapted latitudes because of the climate.

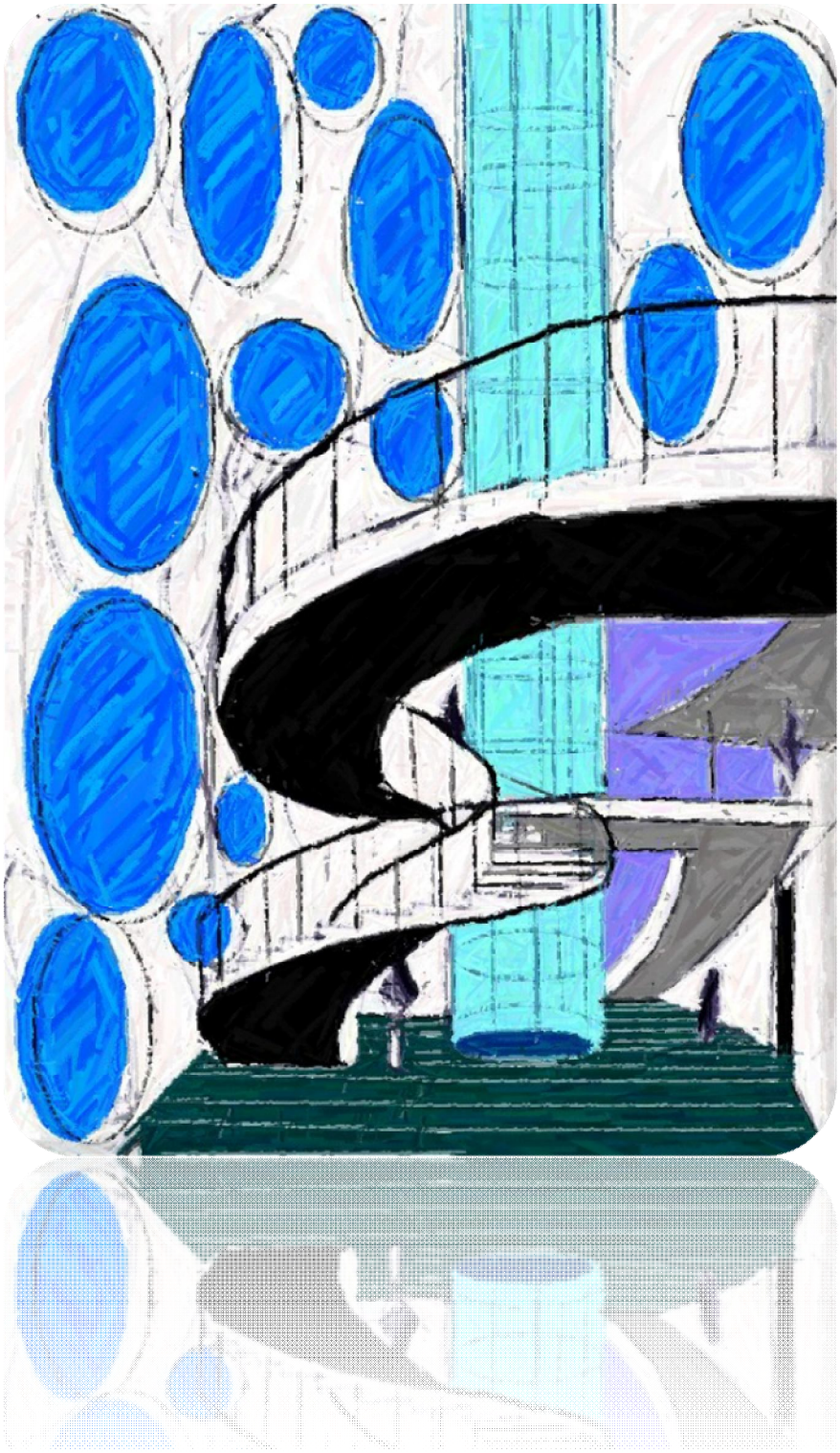
It gives a bigger surface for automated and computerised agricultural development.

Inner sketch

Other kinds of crops, developed through cultivation tables and transportable trays.
Thermal screens, humidity and temperature controls.
Movements of the crops by robotized motorization.



Sketches of automated crops.



Sketches of shared Communications areas

In this building, as the most exposed to sea flows and to inclement weather, will need more light contribution and environmental sealing, so windows will be revolving and controlled from Building 1.