1° People

Railway

1.1 First step: to connect the various parts of the city to each other, making it easier for people to access the center. To do this we used the tracks of the railway so that we do not have to expropriate or end up in negotiations

G.R. (Green Railway) has two floors: one for transport and one for people then a walk and a cycle path. Since the train is currently still in use, it is possible to start building the first floor and begin to connect the currently fragmented city

When the train line is moved to the floor below, it will be possible to build parking lots and a public, electric and eco-sustainable transport line.

Parking

1.2 In an area reachable in 5 minutes on foot from the Green Railway we found 38 parking lots (indicated in blue) that can be moved to the ground floor of the same thus freeing up a lot of space for the city.

This space can be used to create vertical farming allowing the city to self-produce food, thus allowing it to more easily reach the 2050 Co2 goals.

Vertical farming uses aeroponic technology which reduces water consumption by 91%, does not use soil so no pesticides are used for insects, plants are healthier and grow faster, all year round and do not have to be transported since are produced on site.

Furthermore, a vertical farm the size of a shipping container produces as much as one hectare of land traditionally cultivated per year!

Public spaces

1.3 On the first floor of the G.R. 37 spaces dedicated to people have been created (indicated in red). They are empty spaces that the community can use and interpret as it pleases. The Sudbury community is rich in different ethnicities and backgrounds, it is full of artists and creative people

In our opinion, the best way to integrate them into the project is to leave them room to express themselves, to have their say and modify the environment as they wish.

Each micro-community will have its own space, maybe there will be a theater, a street art workshop, a cooking workshop or maybe a traditional restaurant.

It works exactly like the market, it self-adjusts to the needs of the community

To start all this we will be able to invite the micro-communities of Sudbury and assign one of these spaces to each one, asking them to customize it as they see fit.

2° Planet

2.1 A well-connected city helps both the community and the environment, if connections are made well and public transport is abundant, people tend not to use the car, many cities around the world have successfully implemented this system and consequently have greatly reduced CO2 emitted into the atmosphere and improved air quality.

Also in Sudbury in the winter months it gets dark early and very cold, on the G.R. people will feel safe, it will be easier to go out even in the dark and above all they will be covered and sheltered from winds and rain, pushing them to go out and socialize even in those cases

2.2 The main structure of the G.R. and of the buildings is modular and parametric, it can be realized with the combination of 5 pieces by attaching them together, greatly facilitating the work of the wood manufacturers who will have to make only these 5 pieces in series and of the bricklayers on site.

This significantly lowers costs by making the buildings very accessible, thus encouraging people to relocate downtown allowing for a mixed community

Given the fast construction site, making a ratio between the Co2 emitted into the atmosphere to create the structure and the Co2 stored by the wood inside it during the life cycle of the tree, the final bill is positive for the stored Co2.

This means that to create this structure, no CO2 is emitted into the atmosphere but the trees used retain the CO2 breathed in them during their life cycle.

So unlike a traditional concrete structure, the more wood we use the more CO2 we remove from the atmosphere.

Another advantage of using a lot of local wood is that investors will actually invest in the local wood industry allowing the city a rebirth, just as it happened years ago with precious metals, but this time with the precious eco-sustainable and renewable wood.

2.3 G.R. it is covered with 28500 square meters of solar panels thus allowing a production of 8550 KW while maintaining itself, the lighting along the entire railway, the consumption of the residences and offices and the consumption of the congress center and in addition there is also energy left over that can be donated to the rest of the city

3° City center

Public spaces outdoor

3.1 Once the railways are removed we find ourselves with many empty spaces, (indicated in green) where there is the train station and the loading of goods we can create a large public space in the open with a well-organized central park inside, the congress center and other buildings. public and a large square where events, fairs and Christmas markets can be held

The park can be seen as an outdoor botanical garden, recreating the vegetation local and showing people, both tourists and locals, all the types of flora present in the Sudbury area, perhaps even bringing back some species that have been lost

This will of course also help the creation of fauna, allowing birds to enter the city and make their nests

Residences and offices

3.2 The residences and offices (indicated in yellow) are located above the G.R., the houses are 20 meters thick to have as much light as possible and functionally speaking they take inspiration from the famous LeCorbusier Habitation Unit that uses a corridor for three floors.

For the design we were inspired by the Canadian mountains that majestically emerge from the trees but beyond an aesthetic aspect the shape avoids a closing effect, of claustrophobia, on the contrary all the buildings have been designed not to obstruct the view of the other buildings.

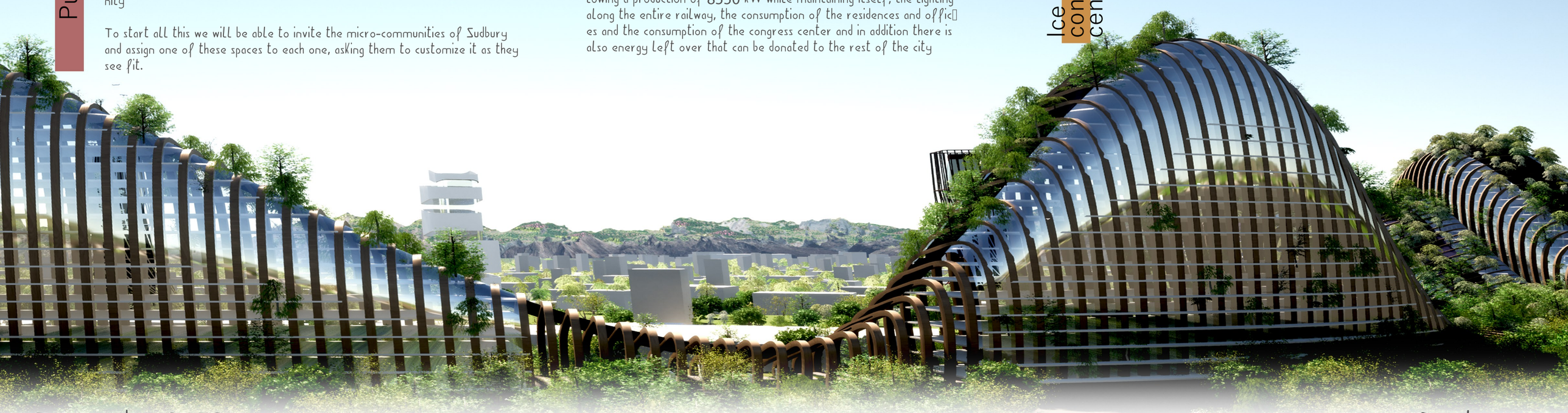
Furthermore, the "mountain" shape allows us to create an open space where the people on the floor can go out and enjoy the beautiful view, maybe socialize with the neighbors on the floor, maybe have a grilled on the weekend or see a good game of WoKey all together

It is by creating this kind of occasions that communities are created, it is by giving people the opportunity to see each other and facilitate this process that they know each other.

Ice rink and conference center

3.3 The auditorium / conference center is a completely eco-sustainable building with a wooden structure, a green roof and a large space inside that allows it to change as needed (theater, event room, conference center, etc.)

It is a building designed to become a symbol, not only for Sudbury but for present and future eco-sustainable cities.



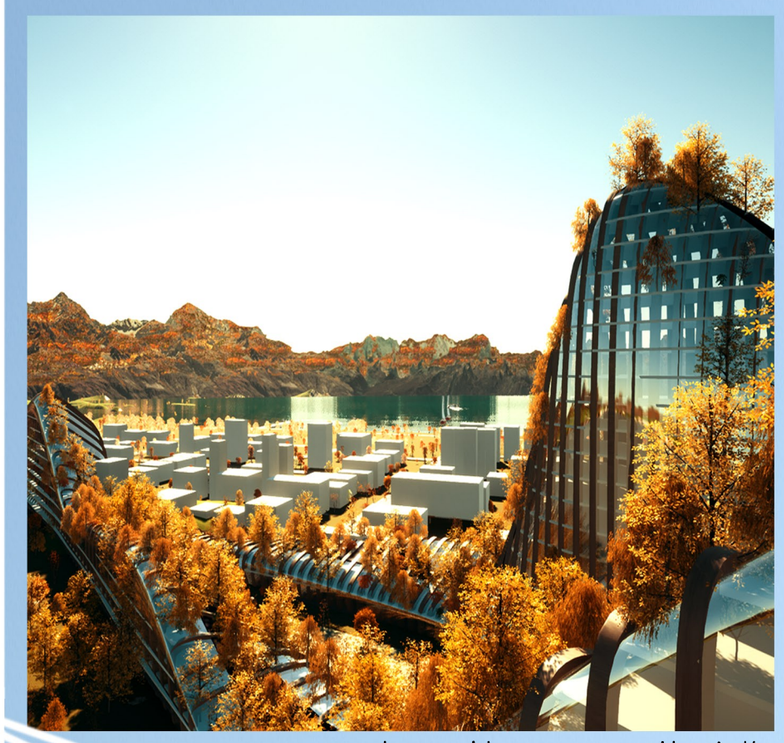
1.1 Conecting the city

The old railway tracks connect the suburbs of the city to the center so we covered them with a pedestrian walk/cycle path

The path is covered by solar panels and is well lit so people can easily reach the center even if it is raining or if it gets dark early

The route can be completed even if the train is still running because it is elevated but when the train changes route in its place it will be possible to put electric transport and parking spaces, to facilitate the movement of people.

The G.R. reaches the Lake



The residences near the Lake

Example of vertical farming instead of a parking lot

The center of Sudbury contains 38 parking spaces that can be moved to the ground floor of the Green Railway thus freeing up space for the city

The new space obtained and the old unused buildings can be dedicated to vertical farming and urban gardens, therefore to the production of fresh food

Aeroponic technologies reduce water consumption by 91%, do not require soil, therefore not even pesticides, and do not require numerous transports or numerous plastic packaging

Besides, a shipping container can produce as much as 2 hectares of traditional agriculture!

1.2 Food from parking

1.3 Space for comunity

Including local people is an important point for us and we believe that the best way to do this is to give them space

Along the whole G.R. (Green Railway), we have created 37 blanks that people can modify at will, according to their needs

Each community can have its own space, there can be a street art gallery, a restaurant, an ethnic museum, a pub, a bookshop or whatever else people deem necessary

Example of a restaurant / bar

Example of library

Example of an art gallery

2.1 The functions of the green railway

The ground floor of the G.R. is dedicated to transport. Currently the railway route is still in use and therefore only the upper part, the first floor, can be built, but when the train is moved the ground floor will be able to contain parking spaces and electric public transport spread throughout the city.

The first floor of the G.R. is dedicated to people. It contains a bike path, a pedestrian promenade and 38 public spaces spread throughout the city but at the same time connected and easily accessible.

2.2 Mass Timber (the structure)

The entire structure was designed in wood. It means that investors will not only invest in G.R. but also in the wood industry of the city which with the occasion will be able to create a name also at an international level.

The structure, to make it inexpensive, is a modular parametric structure, made up with five pieces.

This means that it is created by the same five types of elements combined with each other, significantly lowering construction costs and times.

2.3 Electricity

The Green Railway is 9500m long in total so we will have a total of 28500mq of solar panels that can produce 8550 KW then 34.200.000 KW / year

An average Canadian family uses 9500 KW/year so the G.R. will be able to support 3,600 average families

3.1 Housing and office

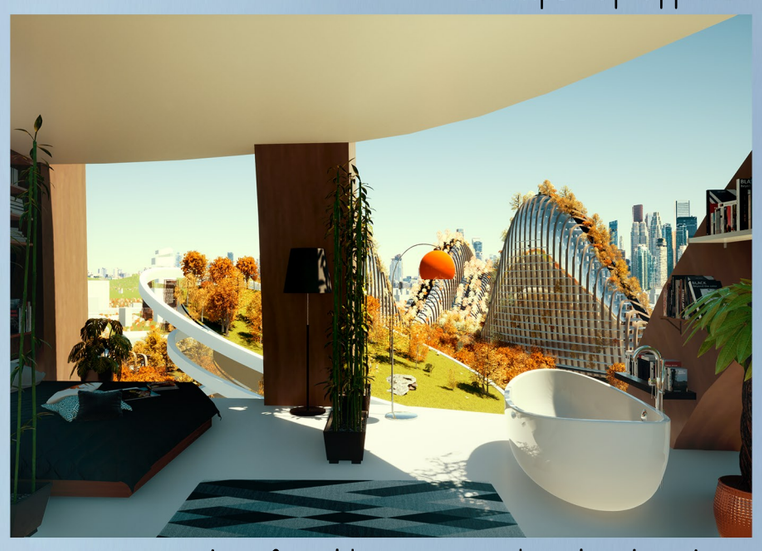
The houses are based on LeCorbusier's concept of "Unitè d'habitation", using a three-story corridor

Are located above the GreenRailway so that they are easily connected with the rest of the city and are located around the center developing towards the Lake, making the city grow in that direction

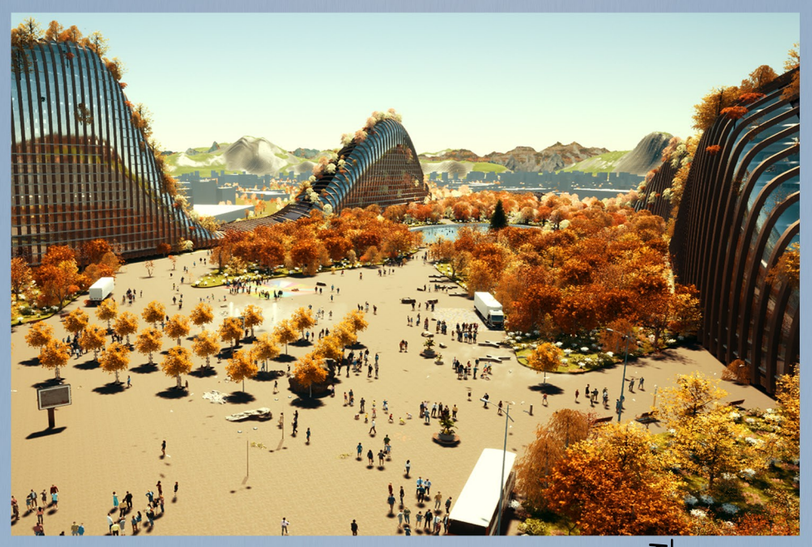
The design of the buildings is inspired by the Canadian mountains that rise majestically out of the forests

But in addition to an aesthetic aspect, the curves of the buildings allow us to have a public "park/balcony" with plants on each floor, offering open space with beautiful views to all residents.

Example of officese



Example of residences, new housing typology



The square

The ice rink

The central outdoor public space is divided into three parts:

-The square: a large open space that can therefore be easily modified by people, allowing them to organize events, markets or Christmas fairs!

-The ice rink: obviously in summer it is an artificial lake but in winter it will freeze much earlier than the large lake, allowing people to practice one of Canada's main sports

-The park: allows people to experience nature just a few minutes from home and therefore carry out various outdoor activities, sheltered from the sun in the summer months

3.2 Public space

3.3 Auditorium

It is a multifunctional center, this means that it can be modified when necessary.

It can become a congress center, an exhibition center, an art gallery or an auditorium

The design incorporates modern but at the same time simple lines, integrating with the surrounding environment

It is an eco-sustainable building with a green roof and wooden structure designed to become a symbol for the people of this city and perhaps for the eco-cities

The congress center in spring

The congress center in autumn