PK689
AMSTERDAM SLUISBUURT (NL)

WELCOME TO THE JUNGLE!

RETROFFITED CITY

We need cities to be SYSTEMS THAT ARE CAPABLE OF REPRODUCING AND MAINTAINING BY THEMSELVES. That's what we're going to do. A piece of city that carries out the processes necessary to maintain the ecosystem by itself and, if possible, the surrounding neighborhoods. If we do so, it will also be A BEAUTIFUL PLACE TO LIVE IN.

Each time we turn on the light, we charge the telephone or we turn on the television the electrons flow through the wires that run the walls of our house. Those electrons are there because we have transformed some energy into electricity. Every time we brush our teeth, wash our hands, we clean a glass after drinking, sanitary drinking water flows through the pipes of our neighborhood and a reservoir empties a little bit. Each and every one of our actions at home involves PROCESSES AND TRANSFORMATIONS.

The present competition is an opportunity to address the complexity of the CREATION OF A NEW CITY at a time when information and knowledge about the processes of urban activity transcend positivist linear thinking and assume the systemic complexity of the network of actions and reactions. The processes that define our way of inhabiting the world.

This desire for a universal solution is part of the global search for resolving the ecological imbalance posed by postindustrial urban settlements. To be able to approach this task it is fundamental that we rely on the knowledge provided by SYSTEMS ECOLOGY as it is done from the first cases of analysis and study of human habitation on Earth

Therefore we must understand that any city area, especially when it has the density of this piece of Amsterdam, is a subsystem within the urban system of the city (Amsterdam in this case). This subsystem is defined by a semipermeable border that allows the reception of external resources (water, energy, electricity, food and manufactured products ...) within which a set of actions and reactions are produced, after which waste or discarded resources are generated or left over.

In the case of RETROFIT SYSTEMS, the waste or surplus of the internal processes return to the system to nourish other processes. In this way the resources discarded are reduced. In the case of a neighborhood, it is important to know what resources are demanded and what resources are used for.

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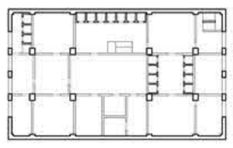
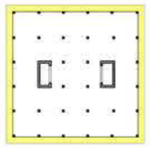
SKYSCRAPER EVOLUTION



1900 - 1950
ARCHAIC SKYSCRAPER

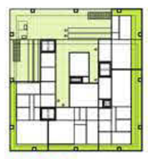
The first skyscrapers were simple stacking of independent levels without relation between them.
The ONLY LIMITATION IS STRUCTURE.
NO SPATIAL INTERCONNECTION
NO PUBLIC SPACE CONTINUITY
NO TECHNIFICATION



1950 - 2010
TECHNICAL SKYSCRAPER

More technical skyscrapers, new elements arise:

- Floor slabs for MECHANICAL & ELECTRICAL SYSTEMS
- Ventilated facades and other elements that provide the building with
- GREATER COMPLEXITY
- NO SPATIAL INTERCONNECTION
- NO PUBLIC SPACE CONTINUITY
- PUBLIC SPACES AS VIEWPOINTS (skylobbies, restaurants, connected with the street by lift)



2010 >>>
ECOSYSTEM SKYSCRAPER

The Ecosystemic Skyscrapper is a reflection of our time, a time of social concience and sophisticated system thinking where we understand the interrelation of everything. All the elements form part of the whole.
It is a vertical city that is RETROFFITED by the different processes that happen within it.

- HIPER COMPLEXITY
- SPATIAL AND SYSTEM INTERCONNECTION
- PUBLIC SPACE CONTINUITY
- PUBLIC SPACE AS AT ALL HEIGHTS
- CITY IS CREATED IN 4D (X,Y,Z AND TIME)

SELF-SUPPLY SYSTEM

CLIMATE CONTROL. PASSIVE SOLAR ENERGY

A home demands heat (or cold) to achieve internal comfort. This can be obtained from various sources although in recent years the use of natural gas has expanded as a more widespread option. However, from the point of view of energy quality (exergy) optimization, using a source of such high quality for such a simple process (raising the temperature of the air to 23 ° C or of the water to 60 ° C) means wasting this energy source, which could well be used for other processes that demand higher quality of energy (such as melting metals).

The main energy demand of a dwellings is related to obtaining comfort. In mild climates the thermal demands are moderate and the resources to reach the comfort can be obtained with a correct manipulation of the surrounding environmental conditions. If we provide heat in winter by means of the correct solar exposure and the accumulation of the solar heat for its use at night, the conditions of comfort can be maintained in a good way without consuming high quality energy resources. In summer a correct ventilation and solar control by vegetal shade is enough to have a full comfort, without needing to use air conditioning.

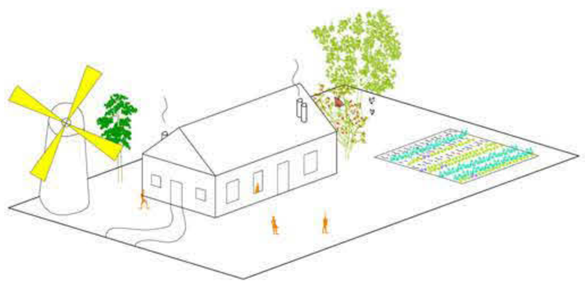
As we can see in Victor Olgyay's bioclimatic chart, in a moderate climate it is very easy to maintain high comfort conditions with ease if the demands and environmental conditions are controlled.

ELECTRICITY

A home also requires electricity to be used in a multitude of appliances that improve the quality of our lives. Well, it is important to understand what kind of energy these devices demand since one of the biggest energy losses occurs in the processes of transformation and transportation. For example, all electronic devices operate with direct current, the same current produced by solar panels. If we create separate electrical networks we can nourish our appliances without unnecessary losses of transformation.

The city that we propose consists in the understanding of the processes that occur in our daily lives to improve the quality of our way of inhabiting by taking advantage of the available resources. To do this, it is necessary to provide the necessary space within the city for infrastructures and elements of growth, management and transformation. Basically it consists of recovering the values of traditional dwelling but in an intensified way. It consists of correctly orienting housing, shading when necessary and using the latent potential of the resources that we have close to get the maximum yield with the minimum effort.

URBAN MODELS >>



COUNTRYSIDE MODEL

One or two floor houses
Productive activities at home
Commercial & economic activities as public space (the market)
Farming and gardening for SELF-SUPPLY

AMSTERDAM XIX CENTURY MODEL

Back private courtyards
Commercial and economic ACTIVITIES ON GROUND FLOOR

XXI CENTURY MODEL

VERTICAL CITY is proposed. A city as a SYSTEM that is capable of reproducing and MAINTAINING ITSELF.
A RETROFITTED SYSTEM where the waste or surplus of the internal processes return to nourish other processes. PUBLIC SPACE, PRODUCTION, COMMERCIAL AND RESIDENTIAL ARE EVERYWHERE. IT IS A SYSTEMIC 4D EXPANSION OF THE CITY

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INTERDEPENDENCE = INDEPENDENCE

As it can be seen in the diagram of the of the CITY SYSTEM in the center of the panel, compared to the resources demanded in the current housing model, our proposal only needs sanitary water for food consumption, for drinking and cooking (although the processes of purification would allow the consumption of naturally recycled water, it would be necessary that the sanitary authorization at a state level allow such consumption in the dwellings).

THE SUN PRODUCES HEAT AND ELECTRICITY, RAINWATER IS COLLECTED, AS WELL AS WATER FROM THE NEIGHBORING SEWER, WHICH IS FILTERED AND PURIFIED. ALSO THE WATER OF THE HOUSES IS COLLECTED SEPARATELY AND IS PURIFIED WITH NATURAL LAGOONS. FOOD AND OTHER CONSUMER GOODS SUCH AS SOAPS ARE PRODUCED WITH THE WASTE PRODUCED BY THE DAILY USE OF HOUSES. LOCAL DATA CENTERS, SERVE as ACCUMULATORS THAT PROVIDE INTERNET CONNECTION TO NEIGHBORS and GENERATE HEAT THAT CAN BE USED TO ACHIEVE INTERNAL COMFORT.

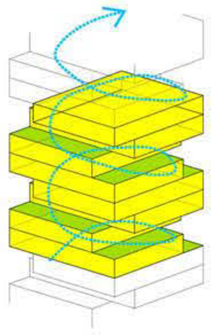
All this is done through simple processes and cheap technology. The important thing is the understanding of the demands and the resources to be able to establish relations that cross between each other. That is why simplification is essential for proper management, as well as the transmission of information and data linked to the components of the system. It is clarified and facilitates the management of residues of the houses to allow their direct use. For example, if we facilitate the COLLECTION OF LEFTOVER OIL AFTER COOKING WE CAN MAKE BIODIESEL, GLYCERINE AND SOAPS, THUS ACTIVATING THE LOCAL ECONOMY.

EVERYTHING IN THE SYSTEM MUST INVITE AND FACILITATE THE FEEDBACK OF THE PROCESSES. If we have a lot of water, we will use it. Thus we can have gardens that improve the environmental conditions, as in the Alhambra, we can accumulate once purified on top of buildings, generating swimming pools for the enjoyment of neighbors whose base is cladded with SOLAR PANELS THAT GENERATE ELECTRICITY for appliances and electronic devices. The pools can be discharged to produce HYDROELECTRIC POWER and the water can be pumped once again by electric pumps activated by solar panels.

In the GARDENS ORCHARDS can be placed to produce vegetables, fruit trees, as well as chickens and other animals that BALANCE THE ECOSYSTEM PRODUCING FOODS THAT CAN BE CONSUMED DIRECTLY BY THE NEIGHBORS. There may also be fish breeding ponds.

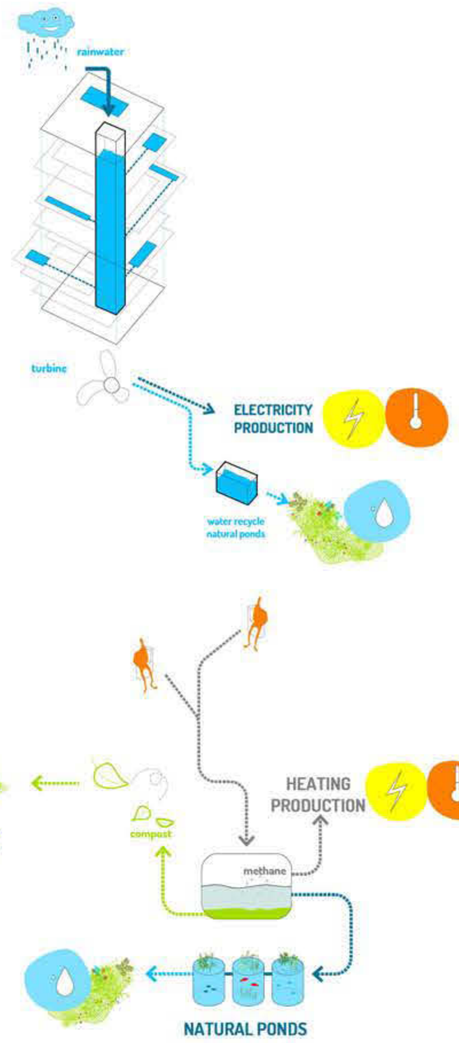
CHILDREN CAN GROW LEARNING HOW ALL THIS WORKS, HAVING FUN AND UNDERSTANDING THE INTERRELATIONSHIP BETWEEN ALL THE COMPONENTS that define our way of inhabiting the world if we place our children's schools as another more element of the system.

THE CITY JUST NEEDS TO ALLOW SPACE TO HAVE ALL THIS. It is necessary to leave space for purification ponds, gardens, water discharge towers, waste processing centers, productive agricultural system and various systems of creation and processing of energy, both electric and heat.

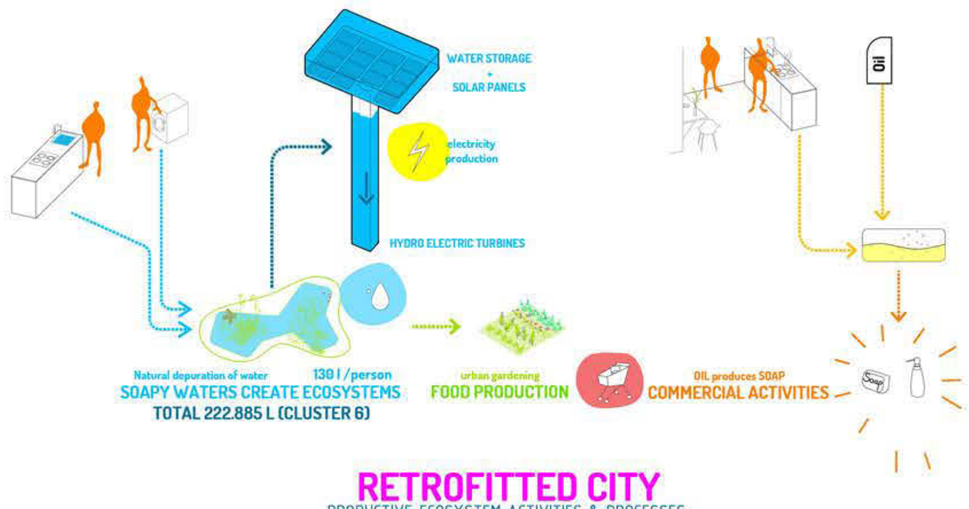


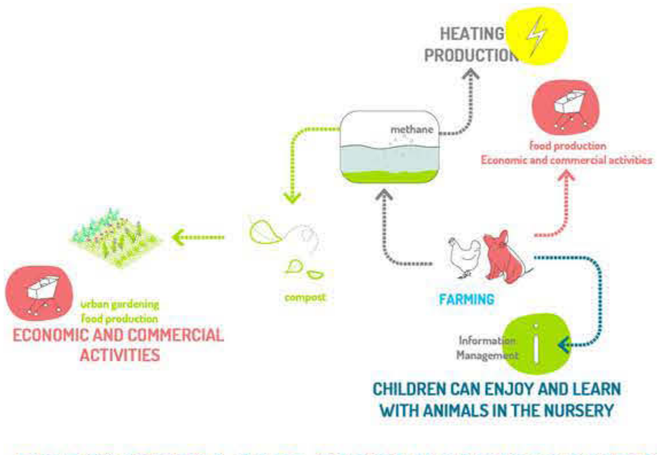
PUBLIC SPIRAL

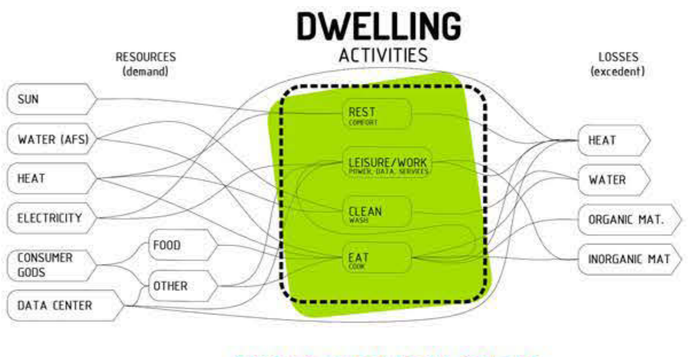
PUBLIC SPIRAL CONTAINS PARKS AND STREET ACTIVITY IN HEIGHT ALL OVER SLUISBUURT



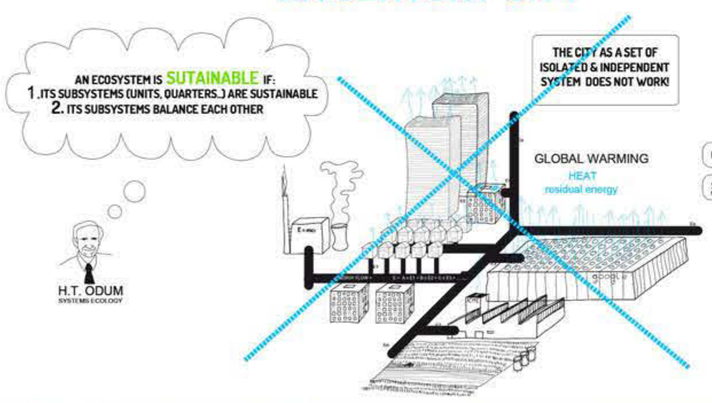
ELEMENTS



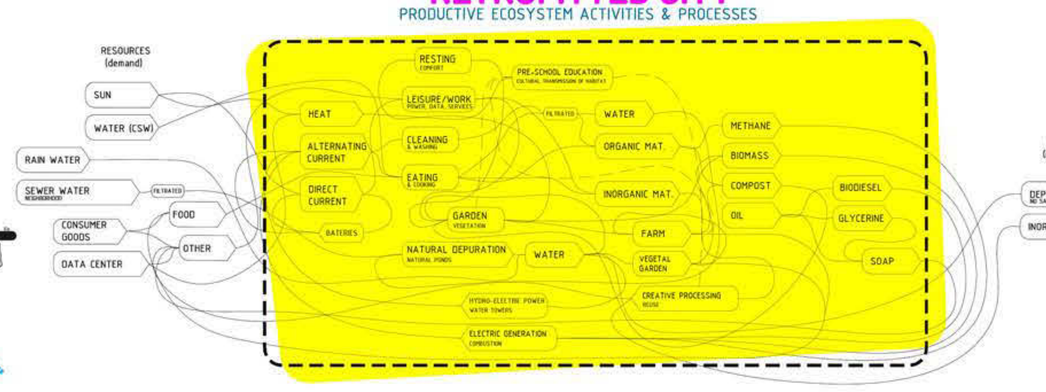




XX CENTURY CITY



RETROFITTED CITY



ECOSYSTEM AND BIOCLIMATIC COMFORT

As we can see in VICTOR OLGYAY 's bioclimatic chart, in a moderate climate it is very easy to maintain HIGH COMFORT conditions with ease if the DEMANDS AND ENVIRONMENTAL CONDITIONS ARE CONTROLLED.

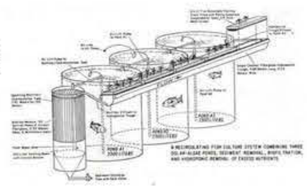
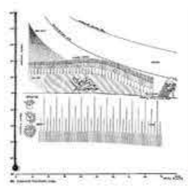


Diagram of operation of living machines
Todd ecological design



Comfort and climate.
Bioclimatic diagram Victor Olgyay

Sample of unpurified water and sample of purified water in South Burlington

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p03

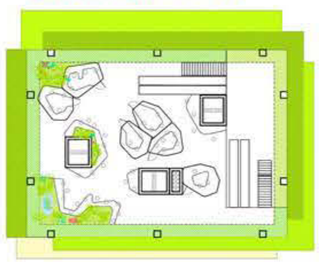
TOWER PLANS TIPOLOGIES 1:500

DWELLINGS & RETAIL

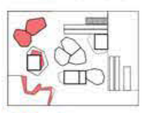
Dwellings

Retail

OPEN SPACE OFFICES

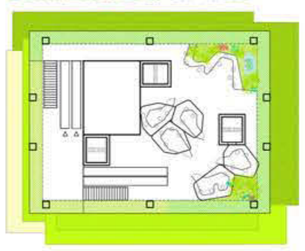


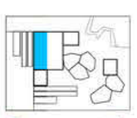
Green areas



Work spaces

COMMERCIAL & OFFICES



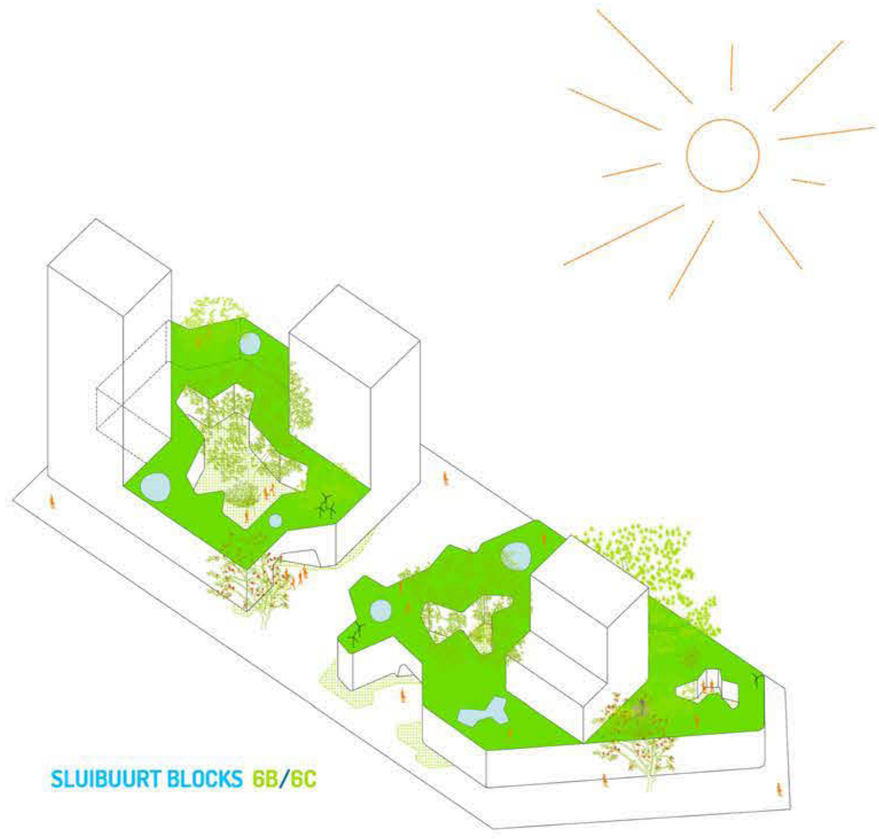


Commercial

Work spaces

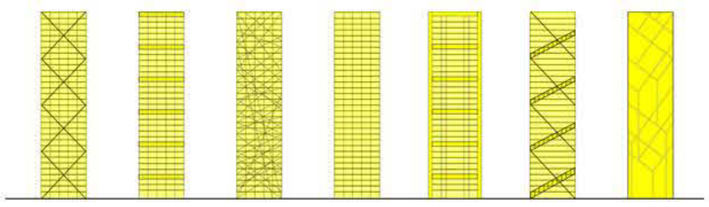
SECTION DETAIL 1:200

SLUISBUURT ELEVATION 1:1000



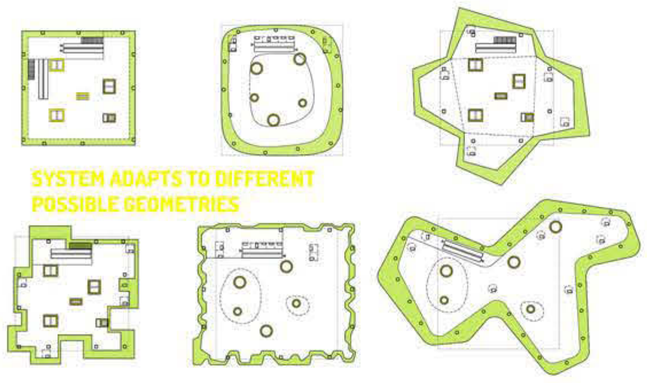
SLUIBUURT BLOCKS 6B/6C

SKYSCRAPER STRUCTURE

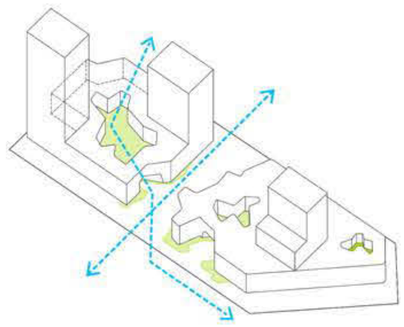


STRUCTURE IS **ADAPTABLE**

The typology designed is independent of the structure.
Different types of structure are provided to adapted them according to the needs.
Improving the project with a greater DIVERSITY OF PROPOSALS. Creating a more dynamic and ADAPTABLE CITY.



SYSTEM ADAPTS TO DIFFERENT POSSIBLE GEOMETRIES



CONNECTIONS & VOIDS

COMMERCIAL & OFFICES

VIEW OF WORKSPACE

VIEW OF APARTMENT