ABSTRACT

Agriculture is a key factor for the development of civilization because it can support large amount of people in one place. This is the reason why early civilization and its cities always start on fertile land and usually on the river banks.

Along with time and the advancement of technology, cities are constantly evolving. From the rigid ancient cities that surrounded by walls, to the 17th – 19th centuries cities that sprawl because of the invention of steam engine for trains. Nowadays, modern contemporary cities tend to not have a specific city center because everything is distributed evenly in small granules.

Unlike the ancient cities, contemporary cities didn't need to be established along river banks. With the concentrated collection of infrastructures like highway, railroad, and ports, cities can survive with the constant flow of goods from neighboring cities, or even cities from across the world.

However, this modern civilization depends heavily on fossil fuel. Every aspect in our civilization are produced and distributed using energy from fossil fuel. Electricity, a key factor in our modern life, also comes from fossil fuel. But with the endless appetite of consumption, experts estimated that around 2010 to 2020 oil production will reach its peak, meaning that the price of oil will grow higher and unpredictable.

Architecture usually designed and built to last. We invest energy, material, labor, money, and emotion in architecture on the assumption that it will. However, with the ever-changing needs of modern cities nowadays, buildings are left obsolete far earlier that its life span initially assumed.

With the energy crisis we are facing, we are reminded that building is the most expensive solution to solve problems and creating new conditions. Architects are usually good at resourceful strategic thinking, and examples like landfill restoration in El Garraf Natural Park, Barcelona and the famous High Line in New York prove that architects are trying to find an alternative solution to keep up with the public demand without consuming too much raw resource.

Looking from two examples mentioned above, the purpose of this paper is to explore an alternative view about obsolescence, decay, junk, and ruins in a city, on how to read and maximize its hidden potentials, and to create a strategy that allows it to keep up with the constant change of public demands.

Italy has one of the greatest biodiversity in Europe, not only because of the geo-morphological conditions, but also because of the techniques and type of agricultural production in use. One of its regions, Emilia-Romagna, is easily recognizable as a part of the Italian agricultural heritage due to their shape and layout.

Established on the border of Emilia-Romagna and Lombardia Region, and being one of the cities of Megalopolis Po,[1] Piacenza inherits a great potential both from natural resource and infrastructural facilities. Piacenza also has been an area of great interest from the military point of view. From the Roman era until this modern time, numerous facilities have been established over the years. However, with the change of requirements and priorities in the army nowadays, some of the facilities are under-utilized or even abandoned.

The military compound in the west side of Piacenza has a huge open space with bushes and big trees growing throughout the place. At least 4 water towers are still visible and some warehouse type buildings are clustered in the middle of the compound. However, the limited access policy and walls surrounding

[1] Theorized by Italian geographers Eugenio Turri in his study *La Megalopoli Padana*

the perimeter makes it impossible for this facility to integrate with its neighborhood, rendering it into an urban void.

Upon reading our existing site, we use a quote from Elia Zenghelis as starting point of our theoretic platform. He stated that we "...need an interpretation to find a site's capacity by distinguishing the junk from the potentials." From there, we cover other theories that dated back from the 1970s by Charles Jencks about post-modern architecture, up until contemporary scholars such as Charles Waldheim with his Landscape Urbanism.

As the product of this investigation, we have 3 keywords as our strategy to work on the void we have. First, "Site-based" means that we have to consider the existing site in every decision we want to take. We have to read the history of our site and also consider what will happen in the future.

"Non-figural" means that we concentrate our action upon creating connection and relationship, just as Jaap Bakema once said **"**Architecture must stimulate the feeling for the relationships that make real life."

Finally, "Flexible" means that we have to consider that our project itself won't last forever. Therefore, we have to establish a strategy that allows our project to be prepared with the ever-changing demand of a city.

We start our project by applying a site-based approach for the compound. We try to read the logic of existing built environment and then create a new master platform based from it. The platform later on will help us inserting new programs for future development into the existing built environment.

First we establish a field of 144x144m primary grid. This grid, derived from the position of the existing building in the middle of the compound, will act as a primary circulation axis. Inside the primary grid, a secondary 6x6m grid that derived from the dimension of the building is inserted as guidelines for the development. Finally, by using the buildings structural grid, a field of 4x6m grid is established inside the existing building.

Transforming the compound into an agricultural research university will be a good opportunity to develop the site. While located between the rural-agricultural and sub-urban district, it can act as a bridge between the production field and its consumers. Finally, with the support of irrigation channel, this university will be suitable with the geological and hydrological conditions.

The university will include scientific researches and conducts social-educational approaches that involve publics from neighboring residential area. The main activities are located in the middle of the compound and will be surrounded with field laboratories that also help to create a tranquil environment for studying. On the perimeter, there will public parks that act as an intermediate space that everyone could enjoy. Maximizing available infrastructure, buildings along the main road will be re-used as guest house, restaurants, and place for farmers market.

Supporting the field laboratories, light structures are constructed to provide space to cultivate bio-diesel algae. The product of this device can be used as the fuel that runs the machines in the compound. The fields are serviced with computer operated land-scanners with different agricultural tools that could be plugged on to water, fertilize, and even weeding the crops. This algae farm and land scanners would be an experimental device to increase agricultural yields and reduce the dependence of fossil fuel energy in agriculture.

In the main campus, rooms for classes and laboratories are inserted into the building according to the 4x6m grid we previously establish. By installing glass partition, we can convert the roofless building into a

green house. This green house is important for researches that require a controlled atmospheric environment.

Along with the laboratories and classrooms, other facilities such as library, administration offices, and storage facilities are also accommodated from the variations of the grid. As important as the others, commercial spots are situated in strategic places in every building. These spots will imitate what corner shops do in cities: making public spaces more dynamic and alive.

At the end, this university is not just about a cluster of buildings with classes, laboratories, and any other facilities, but a place for individuals and groups exchanging information, with both tranquil and vibrant spaces to support various activities.

Many architects are now thinking that contemporary cities are a living dynamic organism that constantly evolving and changing its demands. To keep up its constant change of demand, this reanimation process has to be flexible and embracive rather than exclusive as it was before.

Therefore, the public parks will act as the intermediate spaces that are available for both the public and university. On special occasion, these spaces are open for events or festivals. With the help of the university, educational programs can be established to educate children about where and how their foods come from.

By introducing new experimental products alongside the conventional one, we can consider the farmers market as a laboratory that can gather public opinions and demands about agriculture and food. All of these activities are crucial to engage dialogue between university and the public, especially its neighborhood.

If we consider city as a living organism, then we also should consider architecture behave the same way, as a living organism. Architecture should be a part of the circular metabolism system. A system in which all matter is ultimately recovered as nutrients in one form or another. In this system there can be no such things as waste, because in nature, waste equals food.

If city's evolution leaves ruins and obsolescence, then it is architects and architecture duty to process them, re-adapt them to be viable again. With the energy crisis we are facing, this approach is considered to be more sustainable rather than demolish the ruins and constructing a new building as the solution.

Rather than the "three-dimensional disciplining of a built architecture,"[2] "flexible and relational" system of architecture is faster, cheaper, and more reliable to respond to city's constant changes.

[2] British architect Cedric Price also called it "slow architecture"