

/// VERTICAL URBAN GARDEN ///

. Abstract for short paper

CONCEPT

The vertical urban garden is a temporary garden intervention in the community which, with its cost efficient and sustainable construction, creates an architectural volume in the city. In a specific urban void it is possible to do gardening on several levels. Furthermore it creates space for a weekly market, cultural activities, recreation on sun terraces and at the open kitchen and cafe. An artistic endeavour firstly, the vertical urban garden is aimed at bringing to attention specific issues and potential solutions related to the depopulation of urban areas, focusing on the utilisation of vacant sites and catalysing urban activity at points of intensity in the city. The introduction of the Vertical Garden within urban voids can aid the integration of disparate urban districts or strengthen the community it lies within. By providing a diverse and flexible cultural program, including but not limited to community and exhibition gardening plots, performance and art spaces, winter garden, market and cafe it seeks to not only operate as a node within the community but to also offer the potential for its use in a temporary context at a wider city and regional strategic scale aiding in the march towards a more sustainable, community driven transformation of the urban environment.

ARCHITECTURE

The realization of the vertical urban garden will be enabled by a simple and cost efficient assembly/disassembly construction method using scaffolding. The scaffolding super structure is organised in plan by an orthogonal 5 x 2.5m frame system. In elevation the scaffolding frame becomes dynamic and follows ramps at 3m height intervals. The 5 x 2.5 x 3m structural frame provides a basis for the internal organisation of the gardens. The first 3 gardens, those on ramps, have been organised by a theme of modulating landscape. The ramps are tuned into undulating terraces, reflecting an organic topography, providing flat surfaces for the stacking of plant crates in a creative way. The individual 'micro terraces' each 5 x 2.5m fit into the dimensions of the scaffolding.

The ramp system permeating the structure provides clear and practical circulation upwards through the structure, whilst making a clear separation between circulation and garden areas. It also maintains optimal growing conditions for vegetation, by expanding the floors to double level heights of 6 meters, allowing sunlight to penetrate into the building. Ideal orientation of the structure will maximise sunlight, taking into consideration the ramps on the upper floors have been organised along the northern aspect of the structure, allowing the greatest amount of floor space available for growing on the southern aspects.

Recent temporary interventions like the Schaustelle of the Pinakotheken Munich by Juergen Mayer H. have demonstrated the structural, aesthetic and social potential of scaffolding architecture for the city. Partners or sponsors from the scaffolding industry could minimize costs whilst promoting innovative scaffolding systems.

LANDSCAPE

The model for our architectural and planting concept is the stratified forest, which forms different ecological layers or levels on top of each other (groundlevel, midstory, canopy). As in the vertical urban garden different plants with their differing needs for sun, water, and wind grow on their own layer.

STRATEGIC ASPECTS AND UTOPIAN PERSPECTIVES

The program aims to provide a platform that brings to attention a wider environmental, social and economic issue that is perhaps unknown to a great majority of people. That is the impact of traditional farming practices across the globe and its implications for a rapidly increasing world population. The role of our vertical garden in the urban environment is to display the practicalities of farming vertically in the urban environment, something which is as of yet a rather underdeveloped idea. The vertical garden facilitates its use not only in the shrinking cities of Europe and North America, but also in the developing world, where the simple combination of scaffolding and wood planking enable this basic structure to be easily constructed where there may be a lack of more sophisticated materials, or knowledge of construction. 'Repairing the environment and still having enough good, healthy food choices

may seem like mutually exclusive goals. If the world's population continues to increase, wouldn't we need to cut down more forest to produce enough food to feed everyone? Not necessarily. One solution lies in vertical farms'. Dr Dickson Despommier – The Vertical Farm; feeding the world in the 21st century. As the population of the planet increases more and more land of ecological value is being transformed into farmland. 'We now farm a landmass the size of South America, which does not include grazing land.' Dr Dickson Despommier – The Vertical Farm; feeding the world in the 21st century. Along the way traditional farming has created huge problems related to excess fresh water usage, (and wastage), nitrate and phosphorous pollution due to agricultural run-off and releases excessive amounts of CO2 release into the atmosphere directly through farming the land and transportation of food to the market. However with the vertical farm 'Sustainable urban life is technologically achievable, and most important, highly desirable. For example, food waste can easily be converted back into energy employing clean state-of-the-art incineration technologies, and waste water can be converted back into drinking water.' Dr Dickson Despommier – The Vertical Farm; feeding the world in the 21st century. Year-round crop Other advantages of the vertical farm include year-round crop production, no weather-related crop failures due to drought, floods, pests and all food grown is organic (no chemical herbicides, pesticides and fertilisers). Entire cities can choose to become sustainable with a “cradle to cradle” waste-free economy. Once vertical farms would be established, we can convert significant amounts of farmland back into whatever ecosystem was there originally, simply by leaving it alone. Our vertical garden can serve as a tool of environmental education simply by demonstrating the practicality of this growing process, but also through specific exhibitions and workshops based at the vertical garden, focusing on these issues.

' “Shrinking Cities” - a problematic term. It seems at first to simply point to a phenomenon: the decline of the urban population and economic activity in certain cities. But behind this term are hidden various causes, processes and effects that the words themselves do not reveal. There is also growth in the process of shrinkage: it results in excess spaces, buildings and obsolete properties.' Philipp Oswlat – Shrinking Cities Vol 1 International Research.

Taking Leipzig as an example, as with many Post-Industrial cities, it has experienced the phenomenon of shrinkage, perhaps even more acutely than most. 'Many strategies exist in East Germany hailing 'shrinkage as new potential' and encourage a return to a 'new urban core', a compact city representing the ideal of European urban development.' Philipp Oswlat – Shrinking Cities Vol 1 International Research. But the reality is that many of the developments in recent years have only served to exaggerate the process of inner city flight and suburban industrial, commercial and residential sprawl. With less than 50,000 inhabitants making up the population of the Mitte district of Leipzig, the remaining 500,000 inhabitants occupy the outlying districts. And this is far below the 700,000 peak population of Leipzig of the 1930's. The result is an expansion, or thinning of the urban fabric as a smaller population inhabits the same area and relies on the same infrastructure, whilst development encouraged by the automobile, industrial and commercial logistics and contemporary living preferences, further expand the city boundaries.

A theme of the vertical urban garden, as an architectural volume and social intervention, focuses on the practical response to this phenomena across both the developed and developing world's in general. It takes into consideration the thematic thread of the conference – 'Building a social and ecological economy', and focuses on a project specific response to this.

PRESENTATION

For further information and images about our architectural design of the vertical urban garden to present at the degrowth conference 2014 please feel free to contact us.