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Aloft Metabolism: A Juncture of Architecture Future Design

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Abstract

The Metabolism architectural concept, with its fundamental architectural and urban ideas has attracted the attention of wide architectural communities to Japan art development in the 1960-1970s. Nowadays, in 2010 more than half population live in modern cities, and by 2050, 7 out of every 10 people will live in urban areas. The study presented in this paper, has conceptually researched: architecture metabolism design models of future cities with its proportions and design concepts, mainly focussing on urban form and functional structures. This research, applied an empirical method through the arranged and combined structural models, furthermore, strengthened with handmade models in architectural studio as a research comparable volumes. The models were investigated thru comparative method, and researched mainly through literature review, especially studying structural interrelations of the: forms, position, proportions, and volume transformations thru time intervals. Global and wide actions are irreplaceable and crucially necessary to maintain the public health conditions in appropriate scale of modern cities. The current state of cities, requires specific municipal's responsibilities in situations when we are facing potentially hazards of public health. According to the conceptual conclusions of this study, we much prefer spatial patterns where the urban zones are more concentrated with high-rise structures, although preserving the land use for vegetation. Hence, we further argue that in 'verticality' the high-rise structures can be considered and environmentally treated as vertical farm 'green' mega cities. Urban planning issues, regarding to the: air pollution, climate changes, and public health hazards, fundamentally requires a holistic integrated environmental action. Global measures, as an environmental healing strategies!

Keywords: metabolism, architecture, urban planning, ecology, modelling.

1. Introduction

The Metabolism architectural concept, with its fundamental architectural and urban ideas has attracted the attention of wide architectural communities to Japan art development in the 1960-1970s. The first sense of the meaning of the word was a concept of renewal, the old with the new, hence, the members of the group explained this to be comparable to the extended awakening of the architecture, an organic growth of the modern cities (Lin, 2010). According to the World Health Organization; "in 1990, fewer than 4 in 10 of the world's population lived in cities. In 2010, more than half live-in cities, and by 2050, 7 out of every 10 people will live in urban areas" (WHO, 2010). Moreover, this rate of progression mostly is occurring in developing countries, as we

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witnessed in Kosovo, where city infrastructure was overwhelmed by the rapid population boom in the beginning of the new millennium. Hence, "Cities are complex ecosystems with specific phenomenon directly reflected in our health, natural resources, economic, social and aesthetic fields. They are open integrated systems and huge organisms with specific and complex metabolism that transform vast amount of energy, generate huge amount of waste and emanate a number of specific environmental phenomenon and activities" (Bajçinovci and Jerliu, 2016). The systems to support the fast-growing cities have developed complex infrastructures and spatial activities, resulting with enormous investments and huge urban morphological actions. As stated by Pincetl, 2012: "While on a daily basis most of this has become part of daily life, normalized even, this complex set of physical and human social supply networks is fundamental to the functioning of society and cities; it is also insufficiently examined" (Pincetl, 2012). Cities in recent decades endure a considerable lack of space for much needed urban and spatial development, accompanied with extensive and complex social issues (Bajçinovci et al., 2016). Furthermore, cities are open integrated structures and wide entities with specific and aloft metabolism that transform enormous amount of energy, generate huge amount of waste and originate a sum of distinct environmental circumstances, and urban oscillations (Bajçinovci and Jerliu, 2016). Urban planning is a design process with a primary course to protect the environment, to manage urban infrastructure as a whole integrated system, and deliver the most appropriate style for living. In relation to sustainability and ecology, a qualitative urban design can significantly improve condition, and quality of life of citizens. Therefore, it is crucial to encourage every action, related to city functionality which will minimize any faced functional, and ecological issue. With a new millennium began a new epoch, a globalisation era, which will present a totally contrast and new living habits in the coming decades (Bajçinovci and Jerliu, 2016; Bajçinovci et al., 2016).

2. Materials and Methods

The study presented in this paper, has conceptually researched, an architecture metabolism design model of future cities with its proportions and design concepts, mainly focussing on urban form and functional structures. This research applied an empirical method through the arranged and combined structural models, furthermore strengthened with handmade models in architectural studio. The models were investigated thru comparative method, and researched mainly through literature review. Art and volumes studies contain handmade drawings of conceptual urban compositions, with the multi structural parts of the studied designs, especially studying structural interrelations of the forms, position, proportions, and constructive abilities of urban structures. Study is visually strengthened with the interrelation of art, architecture, and volume transformations thru time intervals (Bajçinovci and Jerliu, 2016), (Bajçinovci, Thaçi and Bajçinovci, 2016).

"Around the world, modern cities are centres of economic activity. Their skyscrapers and bustling marketplaces are testament to the development they have driven. Overall, urbanization has brought countries opportunity, prosperity and health" (WHO, 2010).

Furthermore, as presented by the joint UN-HABITAT/WHO report: "Modern cities are filled with shadows. Beneath the skyscrapers, behind the marketplaces, the lives of city dwellers are hidden from view. This is especially true for the urban poor living in slums or other informal settlements, which are often excluded from estimates of cities "economic and health development" (WHO, 2010).

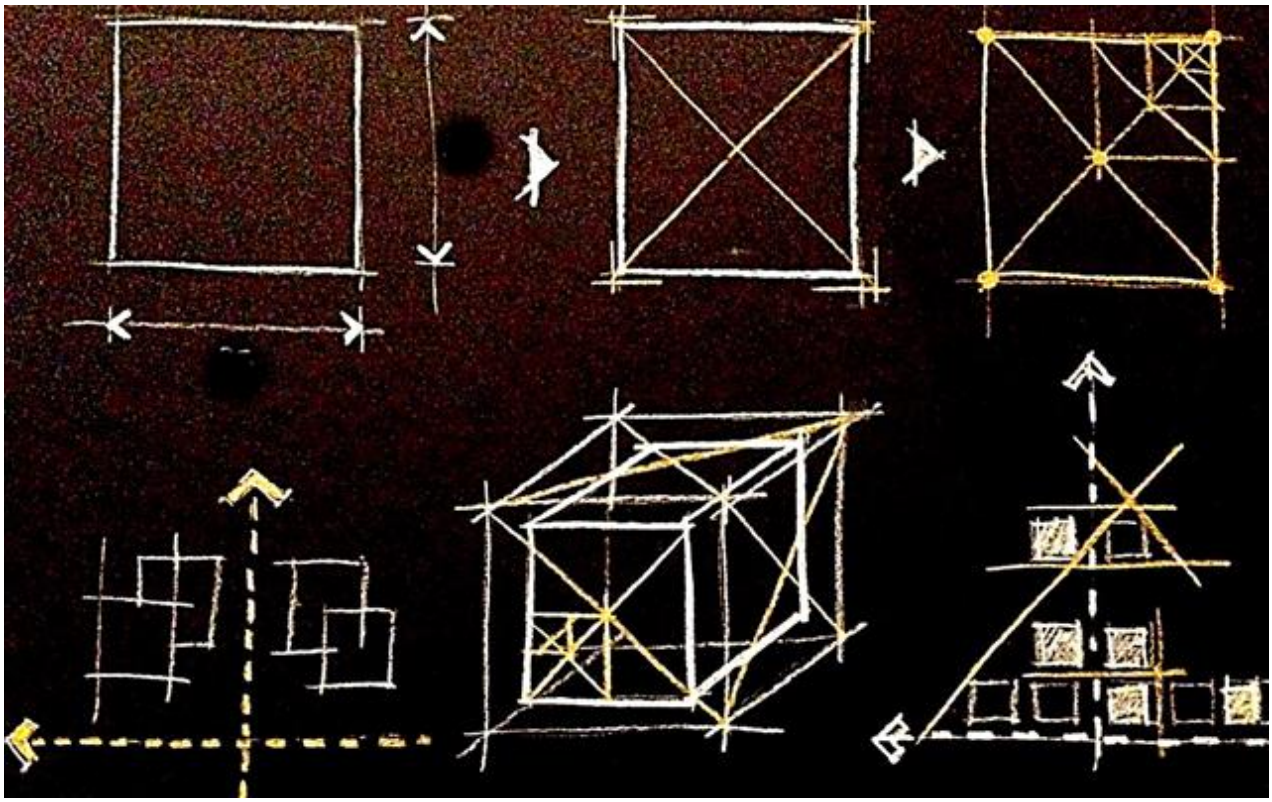
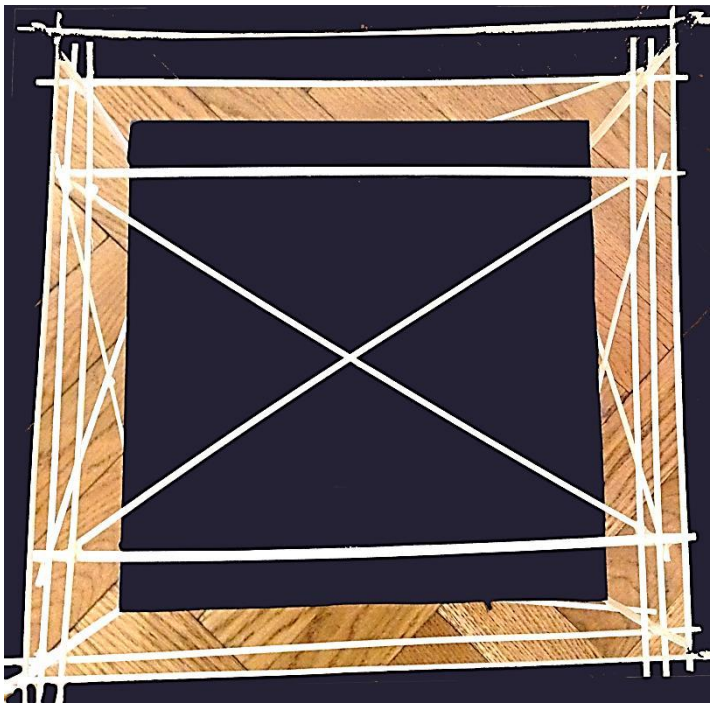


Fig. 1. Conceptual drawings, a simple square and cube. Holistic approach - the much more of the sum of all parts



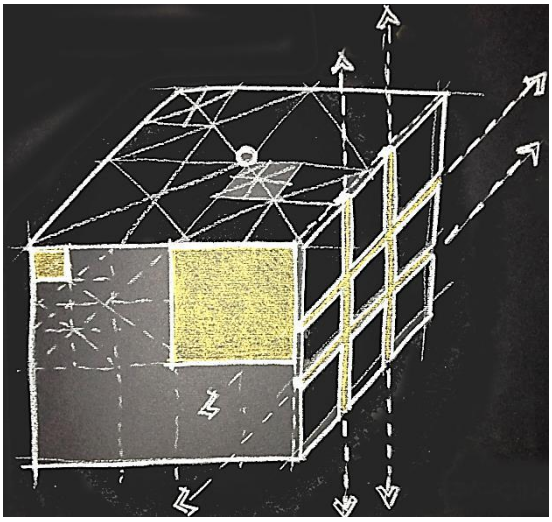


Fig. 2. Chosen cube model, multiplied unit for the high-rise structures. Contemporary architecture design unit for aloft metabolism

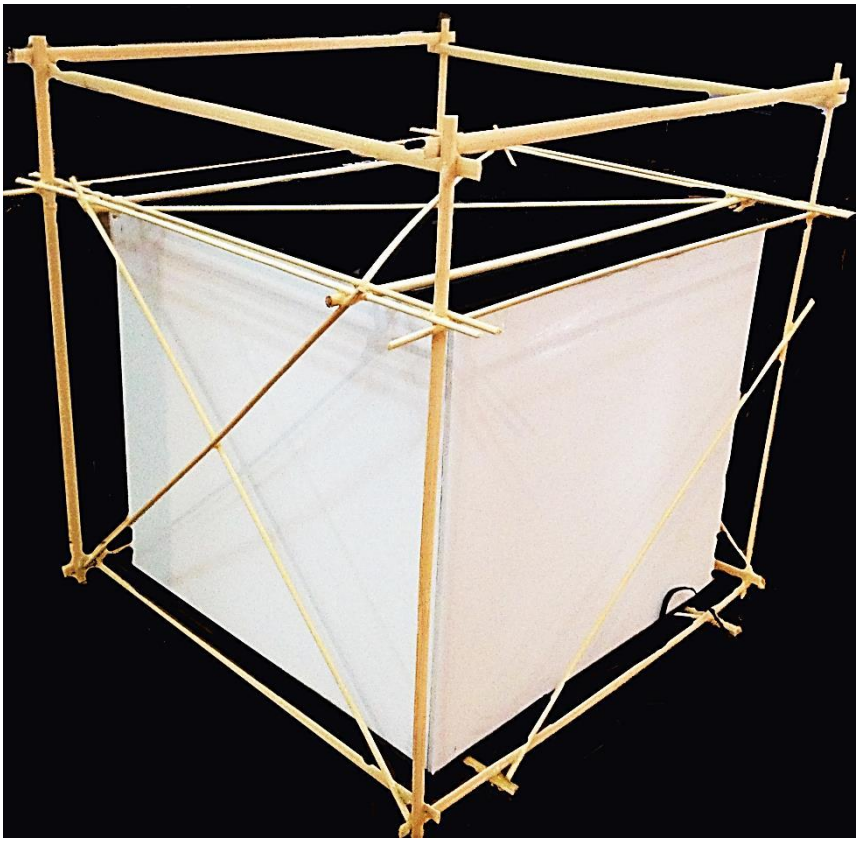


Fig. 3. 3D cube model, architectural multi-functional unit for the high-rise structures

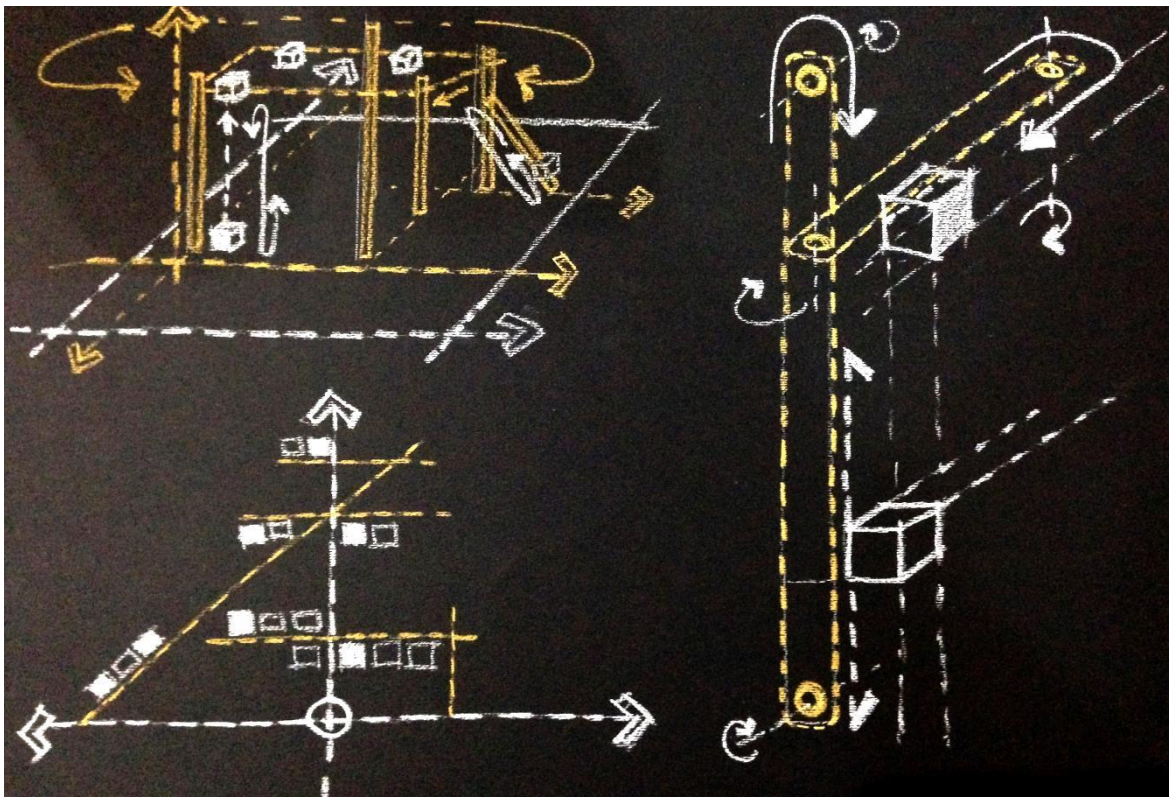


Fig. 4. Conceptual drawings, a schematic line movement of structural units. Juncture of time and space intervals, forming the wholeness of the architectural structures

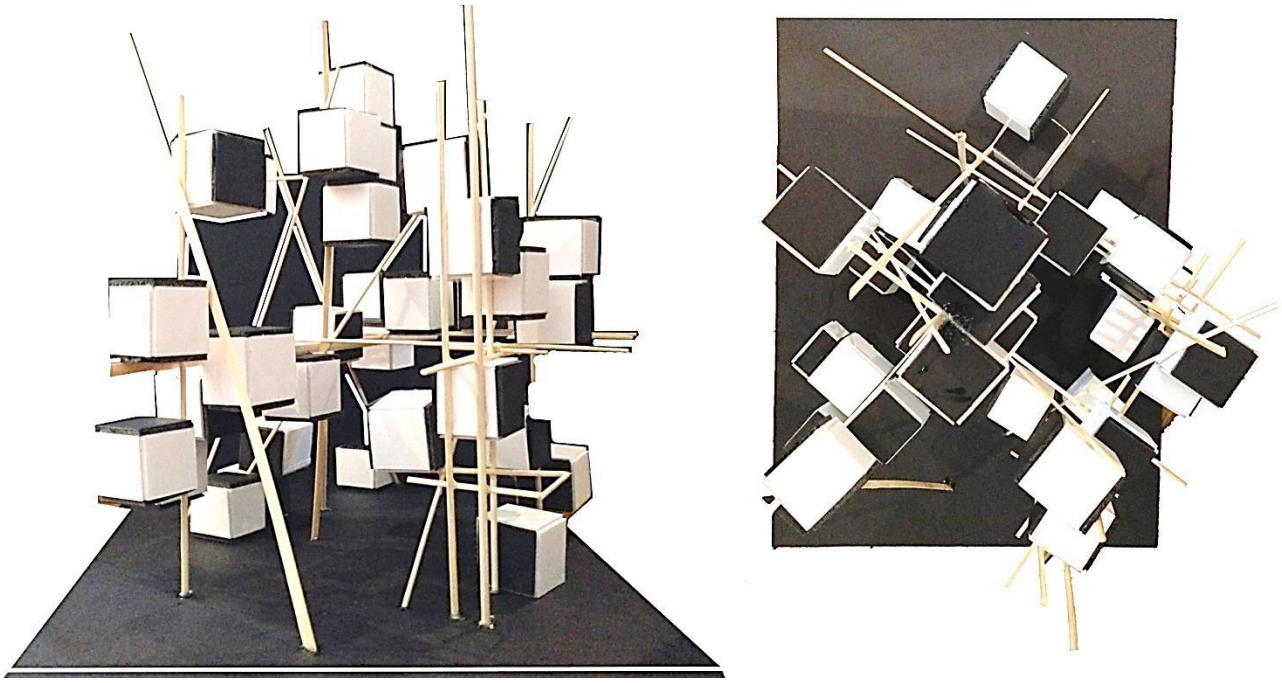


Fig. 5. 3D space, formed aloft architecture metabolism structures. Contemporary architecture reflection of modern mega cities.

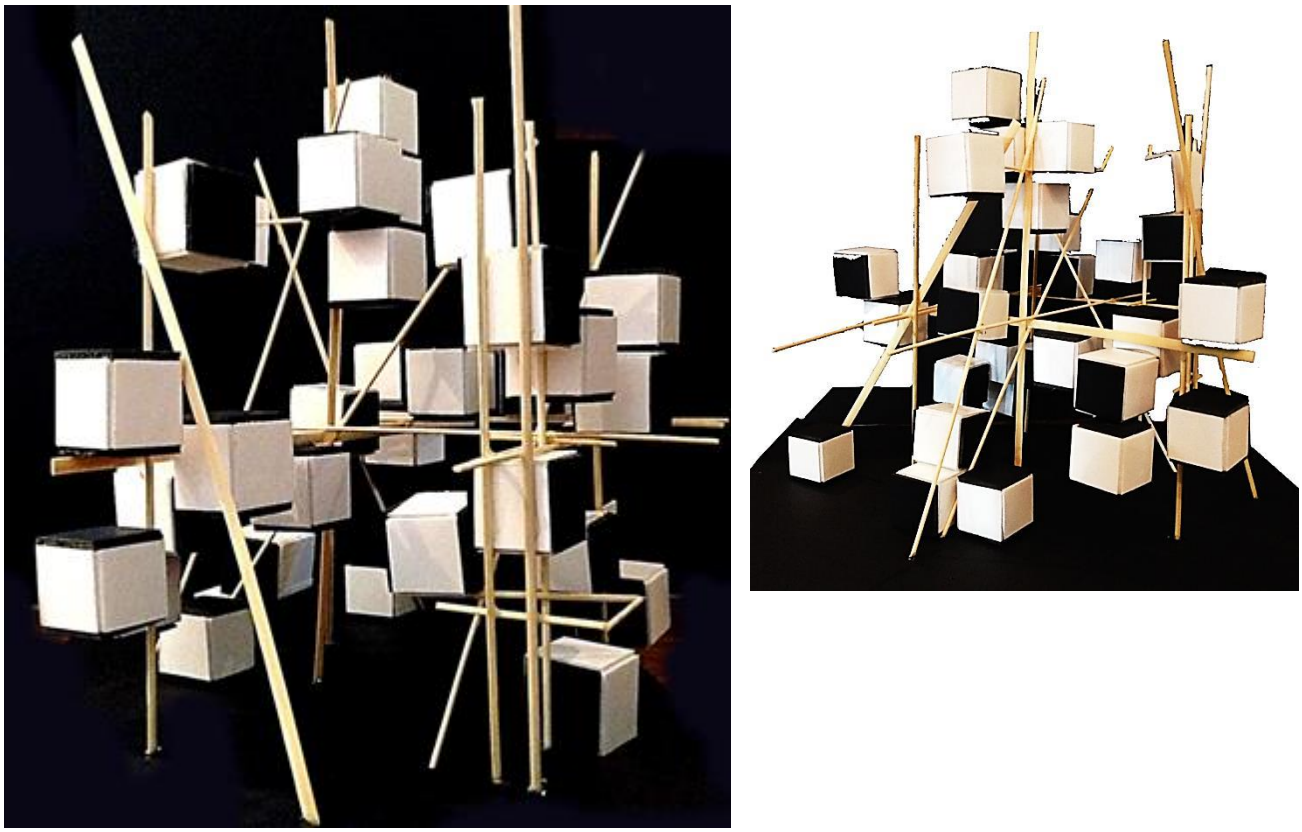


Fig. 6. Aloft architecture metabolism structures. Modern mega cities, researched volumes as future city modelling.

3. Discussion

Urban expanding, and needed city space is a global issue; hence, urban planning challenges can't be developed only for the present time. Furthermore, environmental concern design solutions are fundamentally necessary, aiming to accomplish higher public health conditions: we preserve quality of life, and our obligations for future generations as well. In this paper, we argue that modern future cities, must arise to be physically, and socially prepared for the great challenges of the upcoming decades. Presented models of researched volumes, visually describe interrelations of possible future architectural structures, and design concepts which constantly aim to preserve the ecology, environment, and biodiversity of ecumena. In this study, we conceptually conclude that in relation to the complexity of the urban planning, the land must be preserved without negative emanations of the so much needed human development. We argue that cities are complex ecosystems with a specific metabolism and it can be conceptually considered that cities are locally and regionally specific, especially, when the impact of urban growth and demographic volumes shifts, those events are very crucial challenges, always accompanied with contemporary demands, particularly for future modern cities. Hence, we must carefully further update, and develop spatial urban strategies regarding to the less known upcoming city challenges.

4. Conclusion

The Metabolism architectural concept early in 1960-s, was especially concern about future humanity wellbeing as a great global issue, moreover, those environmental actions as the group stated, can't be addressed only locally. Global and wide actions are irreplaceable and crucially necessary to maintain the public health conditions in appropriate scale of current, and future mega cities. The current state of cities, requires specific municipal's responsibilities in situations when we are facing potentially hazards for the public health. Hence, according to the conceptual conclusions of this research, we much prefer spatial patterns where the urban expand zones of the future cities, are more concentrated in high-rise structures, although preserving the land use for vegetation and environmentally healthy spaces, moreover, we further argue that in 'verticality' the high-rise structures can be considered and environmentally treated as future vertical farm mega cities. Urban planning issues, regarding to the: air pollution, climate changes, and public health hazards, fundamentally requires holistic integrated environmental actions. Global coordinated measures, as an environmental healing strategies.

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