VIVARIUM BIOSPHERE (RESEARCH CENTRE)

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BACHELORS IN ARCHITECTURE

BY

AZKA YOUSAF

ROLL NO:13004101051

SUPERVISORS

DR. MUHAMMAD YUSUF AWAN

AR. NAJAM UL HAQ

AR.SAIMA GULZAR

AR. MEMOONA RASHID

Panel of Examiners

- **Head of Department** _____

  Department of architecture

  UMT Lahore

- **Program Director (Final Year Projects)** _____

Department of architecture

  UMT Lahore

- **Supervisor** _____

  Department of architecture

  UMT Lahore

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ABSTRACT

Urbanization has greatly affect the natural environment .With the innovation of technology most people are attracted to machines .Whereas looking over the plant life that is a major part of eco- system on which the organization of world is based. If we look around, we will notice that plants are essential to maintain the balance of nature .Negligence to it can lead to destruction of our entire Biosphere .Every organism in this world, directly or indirectly, is linked with plants relying on it .This is why botanical garden and research center is a need for world where the tremendous environmental changes are affecting climate not only on global scale but on micro level also.

Botanical Research center is a center dedicated to the plants researches only. Species of plants are taken into account and experiments are performed and botanical garden is garden with variety of plant species grown for the public awareness and vivarium in a wider sense is a botanical garden that is based on conservatory purpose.

This project has been chosen in order to fill the space between nature and humankind. As we know Pakistan is enriched with fertile soil and taking the advantage of this blessing, there is more need as well as scope of botany related studies, So with help of new innovation, technologies and discoveries in botany could give rise to advancement in medical care units through different herbs, there could be more variety, could change architecture by designing plantation on building fronts.

Our solution involves the construction of an Modern botany research center with hi-tech vertical green house, and a civic garden and farmers market to involve the local public which altogether make a platform where not only scientists works for the solution but also students, farmers and public contributes their part in this challenge of growing population with the demand of more food in less agriculture land.

This will lead us to one anticipated long-terms benefits that would be the gradual repair of many of the world's damaged ecosystems through the systematic abandonment of farmland. In temperate and tropical zones, the regrowth of hardwood forests could play a significant role in carbon sequestration and many help reverse current trends in global climate change. Other benefits of vertical farming include the creation of a sustainable urban environment that encourages good health for all who choose to live there; new employment opportunities, cleaner air, safe use of municipal liquid waste, and abundant supply of safe drinking water.

1.0 INTRODUCTION TO THE PROJECT

1.1 PROJECT TITLE

Vivarium means laboratory for keeping plants under observation or research whereas biosphere means zone of life on earth. 'VIVARIUM BIOSPHERE' beyond research center, is a botany complex working hand in hand with technology and an initiative to a better and sustainable future. Research Center is a place to boost agriculture. A department that is sure to be propitious to the country's agriculture/botany sector. A platform where scientists, scholars, students, public and farmers are working together for the advancement of farming and agriculture.

The project is to design a biological botany research center which invites all the scientists and researchers from within the country and abroad to research on the life of plants. Thus research center will act as platform where different world organizations, researchers and scientist will gather for their particular research.

This project with its hi-tech green house in the form of vocational school and exhibition area will serve the public and students of the campus for their food and will give a new meaning to farming itself. These Center and farming would be an exotic appeal, and a unique combination of architecture and botany.

1.2 PROJECT DESCRIPTION

This research building is an Urban and social vision from architectural realm in response to the increasing concern for the drastic growing population and depleting of agricultural land, global climatic problems, diminishing of natural resources and the sustainable ways of urban living in the middle of the city , it creates a new civic space as social and cultural infrastructure tied with new technology based research center, food production and civic garden based on the kitchen gardening; a complete complex for healthy living it challenges how we produce food and the way we consume in the city and further the urban life style.

Over the last decade we have come to realization that we live in planet with limited resources. So, to feed 11 billion people without destroying nature, we must intensify farming through modern techniques. But this alone doesn't solve the issue; the increasing population also demands excessive energy sources, so alternate energy production should be dealt, saving our natural resources.

For this reason, when energy prices go up, food prices tend to go up. From 1990 to 2013, the annual price of oil explained three-quarters of the annual variation in the price of food (cereals, edible oils, meat, dairy and sugar). This shows how directly both these factors correlate to stabilize our monetary state. So when we are focusing our resources on food production, we should resolve the energy crisis as well.

Large cities like Karachi, Lahore would be having food crisis in the next 5 to 10 years. This is where the concept of Modern botany Research center and Hi-tech green house as vocational school for urban farming, cultivating food (kitchen gardening). It gives us the possibility to produce our vegetables in more effective, healthier and clean way. Lahore has great urban sprawl recently and it is expected that its population will exponentially increase. For that (FVDP) Fruit and Vegetable Development Project was launched by government of the Punjab, for alleviation of poverty and improvement in the living standards of the farming community through diversification of high value fruit and vegetable crops production.

Capacity enhancement of farming community in fruit & vegetables production on modern lines through (farmer field school) FFS approach.