RE-PLUGGED

CONTEXT
DELHI, the capital city of India is going through a rapid growth of urbanization and industrialization. It experiences a huge spike in the air quality index due to rise in weather conditions and urban emissions. As the region is situated with a high of carbon, the residents and the farming community suffer. The farm land yield black and rotten crops due to foul air. Farme are also susceptible to flooding and attacks by wild animals because of the continuous flooding. This affects the rice paddies and all the farms are forced to direct their efforts to income. The farming continuity is at threat of extinction.

APPROACH
RE-PLUGGED intends to rethink this urbanisation as an opportunity to grow sustainably and help the residents and farming community of Delhi. House construction and lack of any physical movement have increased trauma and stress. The crucial times make us realize what we essentially need and miss out on. People living in cities feel the most isolated and have lost connection with nature. RE-PLUGGED is an attempt to use architecture as a tool. It is an approach to bring life to the forgotten nature.

The design integrates a vertical approach to the otherwise horizontally spread out farm lands, mountains, lakes and lath forest. The three towers are connected from the central core to form an Urban Forest to reconnect people with nature.

FUNCTIONS
The core of the RE-PLUGGED comprises of Vertical Farm. Vertical farms are open markets, a mountain range with running slopes, small climbing activities and zip lining, a green Amphitheater facing the panoramic views which floats on the lake and are connected through the built over bridges.

Vertical Farms provide self-sufficiency and produce cost-effective agricultural products in the city centers. This can reverse the farming community. Scientific research laboratories are provided to monitor the ecosystem stability in the premises. The laboratories also act as educational spaces for tourists to create awareness.

WASTE MANAGEMENT
Trash collected from residential apartments and commercial buildings will be treated by composting. The organic matter will be released in vertical farming and green zones. The bag gases released will be converted to fuel and electricity. The storm water is recycled and used in farming.

ECOLOGICAL STRATEGIES
RE-PLUGGED is richly programmed to effectively use and restore resources. The rainwater harvest and the greenery of its landscape allows for the urban-rural setting to reduce its environmental impact.

BIOLOGICAL AND DIGITAL RESPONSIVE SKIN
A skin designed by Teens, this is an innovative biological system for building skin. Algae is filled between ETFE. It absorbs microclimatic supplies of water, carbon, and oxygen. Algae also performs as a second skin of buildings with passive cooling while producing oxygen of up to 70%. The algae-algae and algae-plant association will store organic substances with 10kg of biomass per 60% of which are natural nitrogen proteins.

STRUCTURE
The Three horizontal vertically stacked system connects to the three units of algae members to each other from the core which helps to expand the building to form spaces for the flat green forest to maximize the sunshine intensity and on the algae skin. It photosynthesize at its highest efficiency.

Schematic Diagram of algae system.