nova pro forma

IIT SOM

Master of Tall Buildings and Vertical Urbanism

Fall 2023
pro forma /ˌprəʊ ˈfɔːrmə/  
(adj.) method of calculating financial results using certain projections or presumptions
nova pro forma /ˌprəʊ vərˈfɔːrmə/
carbon capture
Allison, Elena

energy generation
Janani, Elias

energy storage
Sreeha, Josh

food production
Maria, Heidi

erver farming
Yeni, Davis

amalgamation to support multi-family housing
1. Tropics on Michigan Ave
- Amidst soaring downtown office vacancy and strong residential demand, repurposing remaining large office building floor plates into data centers and introducing a winter vertical agriculture offer a sustainable investment opportunity and addresses key real estate challenges.

2. ConSpire
- A vertical cement plant and a thermal battery system with sufficient storage capacity to power Austin, TX for a week. Heat recycled from the cement-making process is stored in carbon mass for future use.

3. Grow High
- A San Francisco skyscraper that combines urban farming for products and food with Net Zero sustainability, ideal coastal location and innovative design make it a beacon of environmentally conscious living.

4. Grow in the Sky
- This research hospital collaborates with educational institutions and pharmaceutical companies to deliver healthcare services, building programs, and research facilities. The facility offers both long-term and short-term stays for patients with an opulent guest house enhancing our programs.

5. The Carbon Drop
- This tower actively captures carbon using the building's stack effect and direct air capture technology. The captured CO2 is injected into the soil to be used with geothermal technology to produce electricity. We can make a self-sustaining circular economy within the walls of the building leading to a desirable and near-self-sufficient future.

6. E-Tower
- An innovative tower that integrates Direct Air Capture (DAC) to absorb CO2, converting it into raw materials and then biodesalting the structure houses an industrial complex with DAC at the base, a long-stay hotel for workers, and a community for sustainable energy generation.

7. The Hive
- The Hive is set to become the tallest structure in Las Vegas. It is specifically designed to meet the demanding requirements of high-performance gaming operations and the production of gaming computer chips. The building employs advanced core technology to enhance the expected vertical experience.

8. Data Green Hub
- In anticipation of future population growth and escalating food demands, the 700 m tall Data Green Hub emerges as a fusion of vertical farming and data centers in Portland. This symbiotic synergy harnesses the best collected from data centers to fulfill daily energy needs for farm production.

9. Medical Spire
- This state-of-the-art spire is built to be a pillar for its city and health, providing medical care, research, and education while clearly powering itself - and its community during a crisis - with the newest safest small modular reactor.

10. The Living Carbon Effect
- The Living Carbon Effect, a 1,200-meter Chicago tower, utilizes the stack effect for advanced carbon capture and storing river water. Integrating Direct Air Capture and microalgae, it captures carbon dioxide, generating over $200 million in annual revenue and potential total revenue exceeding $2 billion.

11. Unmanned Building for Man
- Building winds have enormous potential to move skyscrapers. Wouldn't it greatly benefit us if we could utilize these buildings and other than overcome it? Here, building winds are no longer a big change but a big chance.

12. PhytoMed Hub
- A transformative healthcare tower in Chicago exploiting its pharmaceuticals, specifically from High Altitude Medical Plants: With hospitals, a school, and state-of-the-art research labs, it heralds a new era. Bridging healthcare economic necessity and environmental healing - a proposition for a healthier future.

13. Five Jumps to Chicago
- A microgrid network consisting of six group-fed, modular structures reduced the high-frequency travel latency between the Chicago and New York Stock Exchange data centers by 3.5 milliseconds.