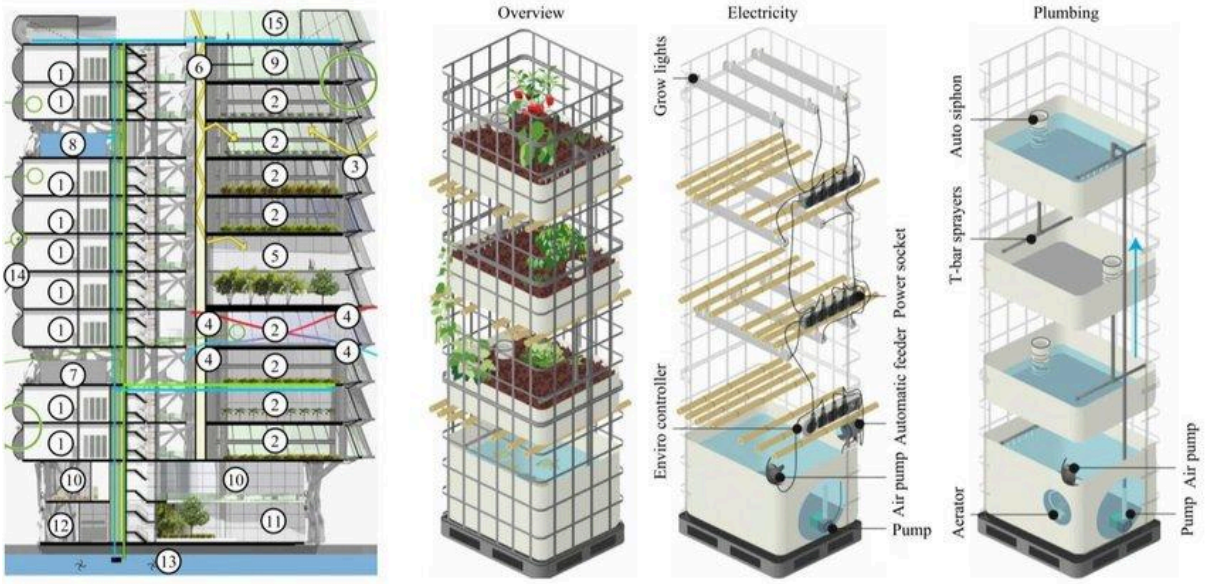

Aquagro Vertical Farming Stack: Conceptual Architecture Design

The image depicts the architectural design of the Aquagro vertical farming prototype. This design integrates several critical components that ensure a sustainable, efficient, and automated farming system. Below is an outline of the system architecture and its components:

Key Components:

1. **Overview Section:**
    - **Grow Beds:** The structure features multiple levels of grow beds, stacked vertically to maximize space efficiency. Each bed holds soil or growing medium for cultivating crops.
    - **Enviro Controller:** This system monitors environmental conditions such as temperature, humidity, and light levels to ensure an optimal growing environment for the plants.
2. **Electricity Section:**
    - **Grow Lights:** Energy-efficient LED grow lights are installed on each level to provide plants with the necessary light for photosynthesis, simulating natural sunlight in indoor conditions.
    - **Automatic Feeder & Power Socket:** Automated feeders provide plants with nutrients, and the power socket connects to other critical components such as the pumps and lights.
    - **Air Pump & Actuator:** The air pump helps to maintain healthy oxygen levels for the plants, ensuring proper nutrient absorption and growth.
3. **Plumbing Section:**
    - **Auto Siphon System:** This system controls the water levels in each grow bed, enabling an efficient and regulated water flow for plant irrigation.
    - **T-Bar Sprayers:** These are used to deliver water to the grow beds, ensuring even distribution of moisture across the plants.

- **Pumps & Aerator:** The pumps circulate nutrient-rich water from the reservoir at the bottom to the upper grow beds, while the aerator ensures oxygenation of the water, promoting healthier root growth.

4. **Other Key Features:**
    - **Water Recycling System:** This closed-loop system efficiently recycles water, ensuring minimal waste. Excess water from the grow beds is filtered and sent back into the system.
    - **Compact Modular Design:** The entire structure is designed to be compact and modular, making it suitable for urban environments with limited space.
    - **Energy Efficiency:** The system is designed to minimize energy usage through the use of energy-efficient components such as LED lights and air pumps.