

# KINETIC OBELISK

A Transforming Monument for a Society of Progress



**ABOUT:**  
 In much of the 20th Century we witnessed unprecedented scientific and technological progress at the expense of immense environmental destruction. Mainly spearheaded by the Silicon Valley, current technological inventions in the fields of computation, artificial intelligence, robotics, virtual worlds and biotechnology offer us great opportunities to recalibrate our contested relationship with nature. Technology can serve as a tool that harmonizes humans and the natural world. Based on this premise, Kinetic Obelisk is a robotic transforming monument that embodies our 21st Century ideal of harmony between humans and nature through technology.

## A Tale of Two Loops: Humans vs. Nature

As a transforming and ever changing monument, Kinetic Obelisk has two robotically actuated structures that we call loops; one representing humans and the other nature. Through a synchronized choreography, the two loops will slowly dance in the San Jose skyline, creating spectacular imagery never before seen in public spaces. Made out of durable and lightweight carbon fiber, the loops will not only provide visual iconography but also shade during the day. Accentuating its silhouette in the evening, the loops are adorned with an LED bezel. The motion and embedded lighting of the loops will be controlled by a computational system that processes information about weather, wind, solar position, light pollution, bird migration patterns, seismic data and other environmental factors to ensure that its motion does not interfere with any natural process negatively.

## Loop Form and Plaza Pattern: Singularity of the Human Race

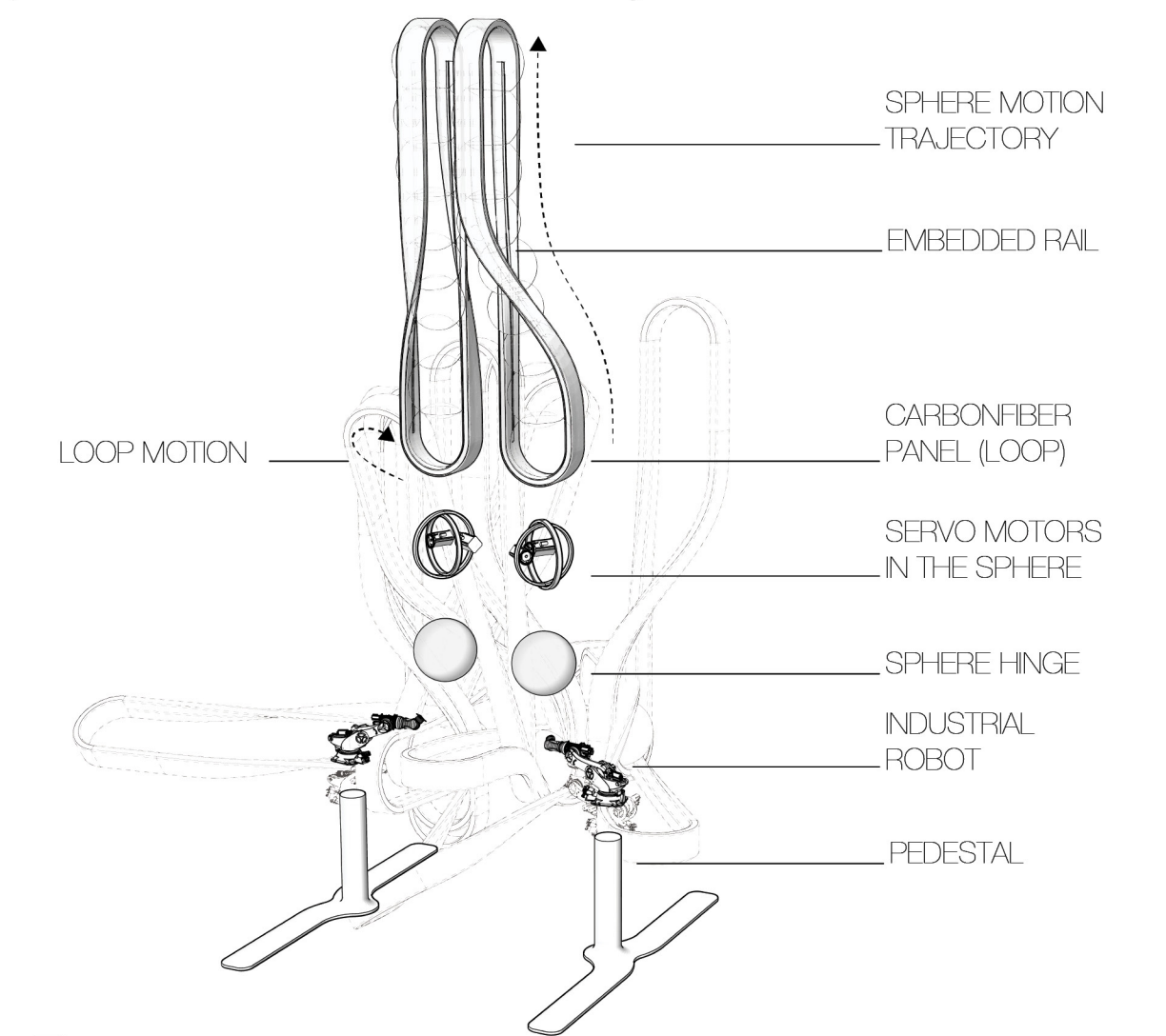
The silhouette of the loops are inspired by the imagery of human chromosomes as viewed through an electron microscope. As the loops move in the San Jose skyline, they will be creating combinations that represent the X and Y pairings in the human genome. The landscaping pattern on the plaza consisting of pavers, planters, benches, pools and lights are designed as an accurate graphic abstraction of the Human Genome Project. Originated in California and the first great scientific achievement of the 21st Century, the Human Genome Project is not only a truly international project but also a scientific proof that there is only one human race. The plaza, through engravings on its paving stones will also serve as an educational tool, further communicating information about particular genes and their functionality. Through this pattern, the monument will mark our scientific progress in history, similar to other prominent historic monuments and obelisks.

## Site Plan

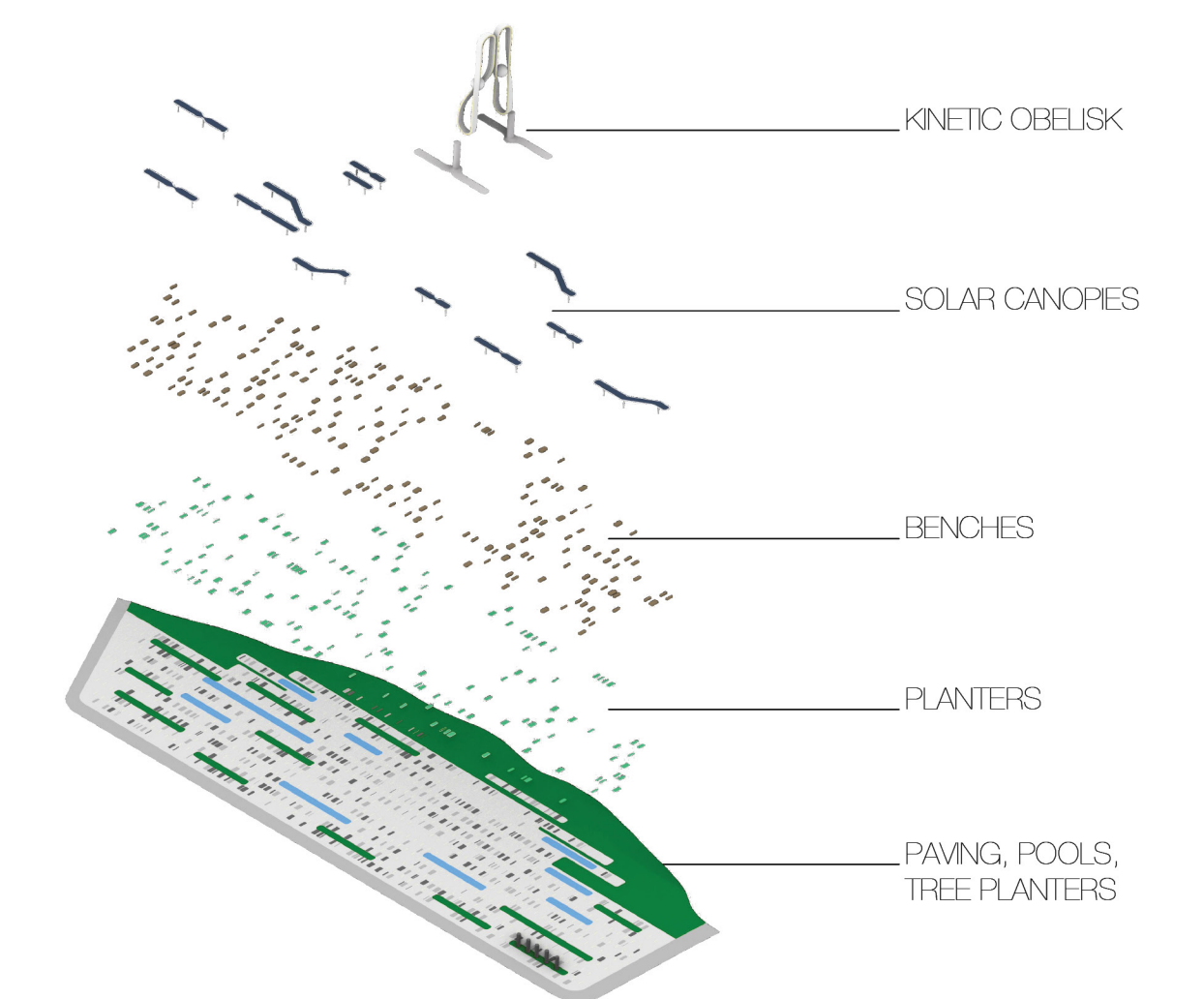


## Monument Assembly and Motion

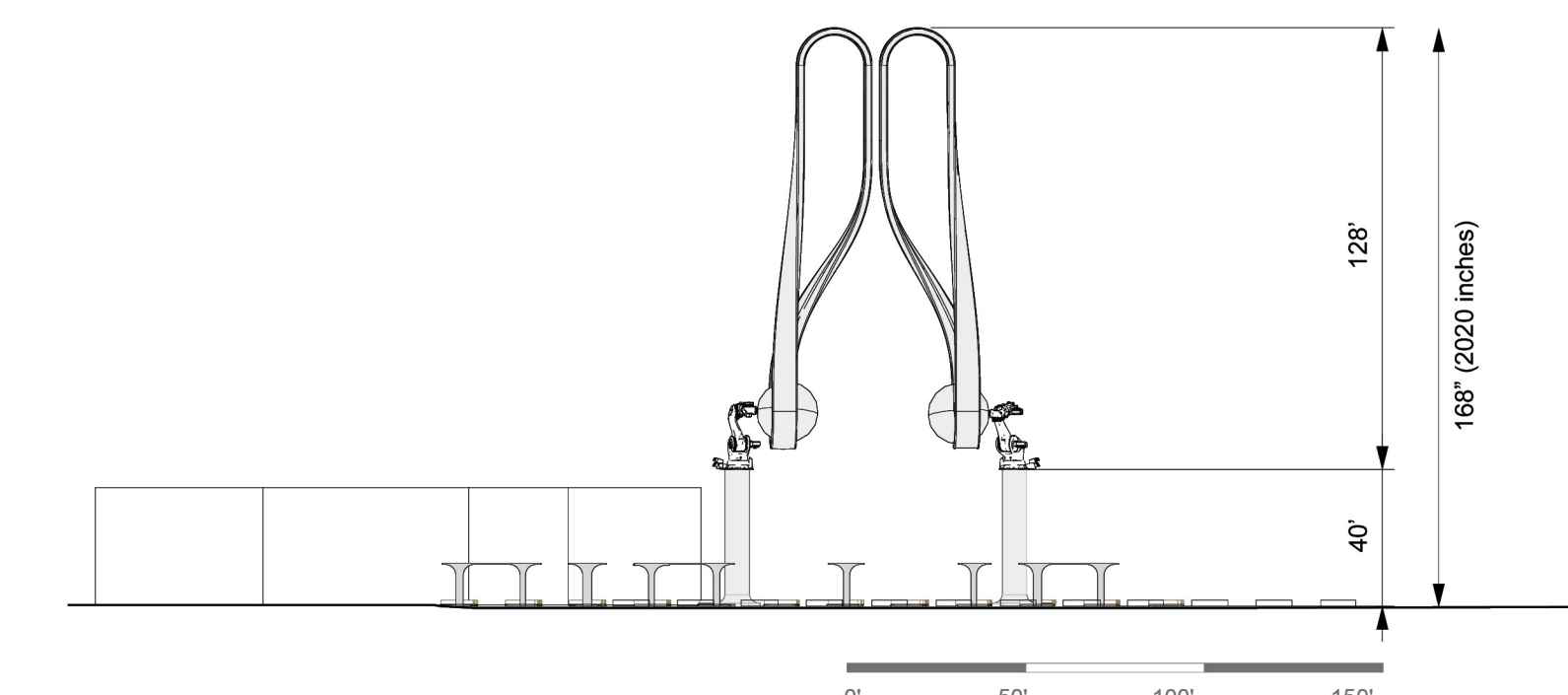
Kinetic Obelisk loops are carried by a pair of large industrial robots. Each robot attaches to a carbon fiber sphere, which has two embedded servo motors on its two ends. These two motors activate a simple gear mechanism attached to a linear rail along the inner edge of the loops, allowing for a lateral motion. Through the combination of the sphere servos and the industrial robots, the sculpture is capable of executing very complex motions. The robotics, entertainment and theme park industries in Southern California will be great resources for resolving the engineering of this structure, as they have experience with building much larger and complex kinetic structures in a safe way.



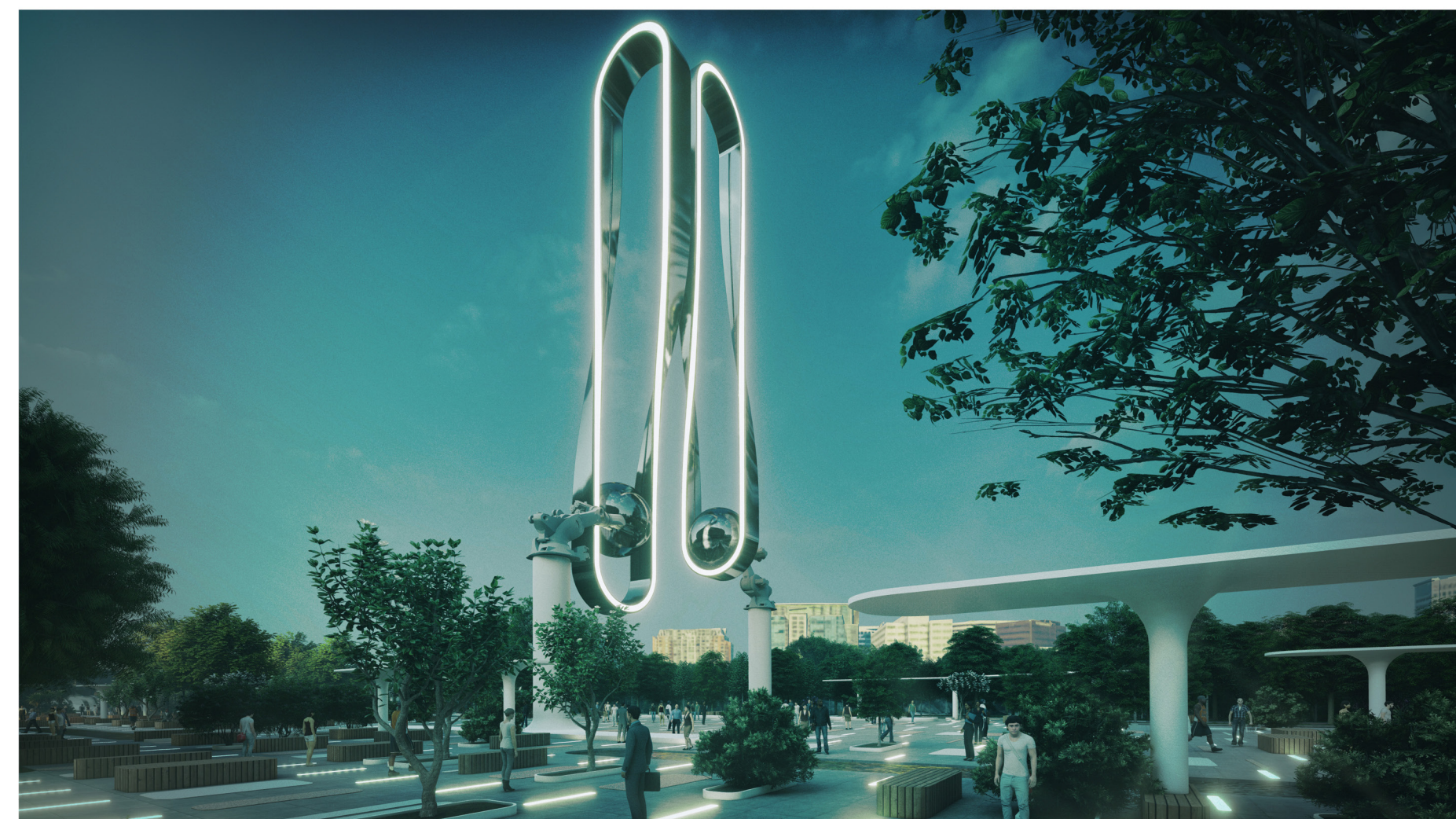
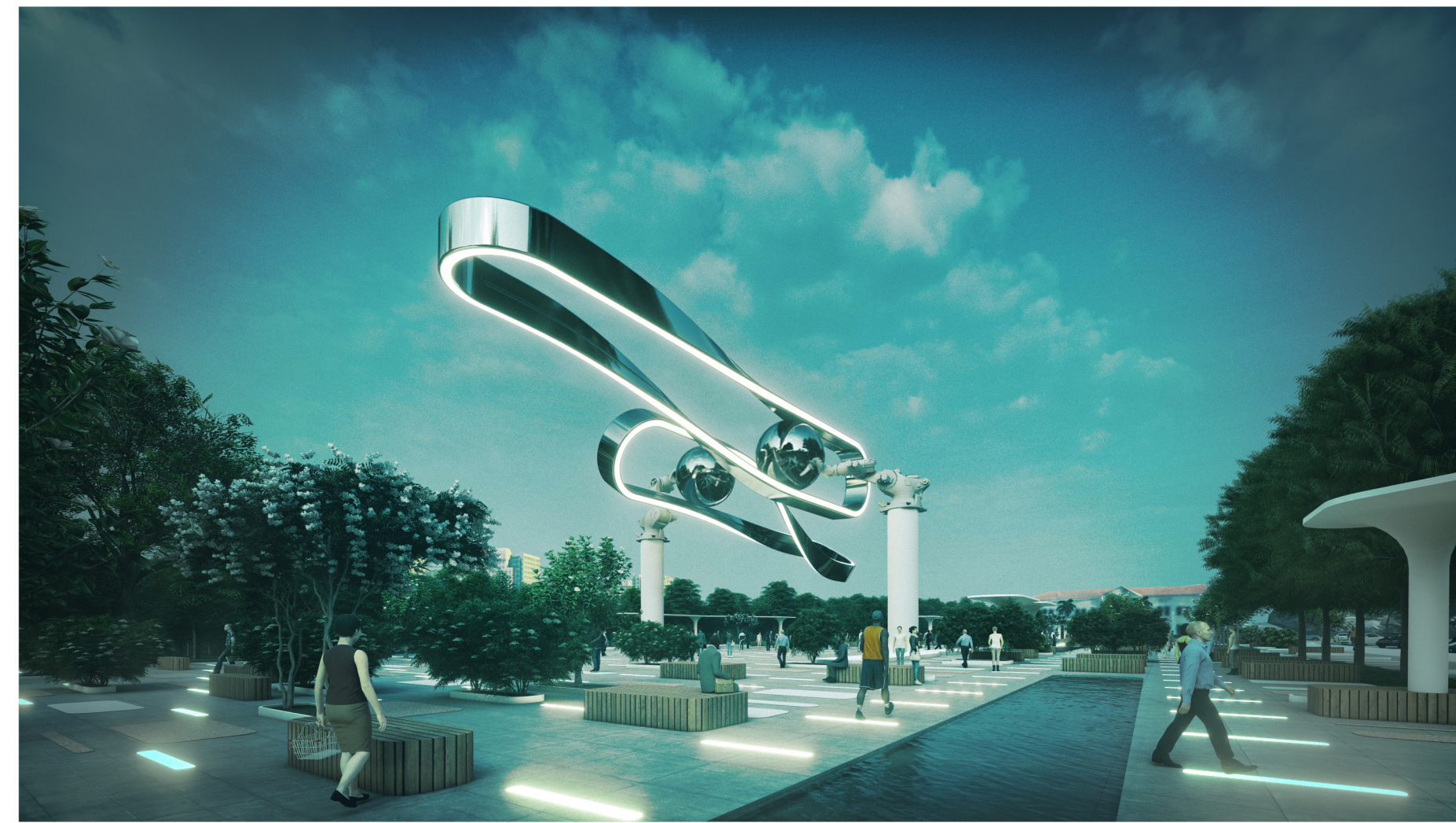
## Site Landscape Elements



## Elevation

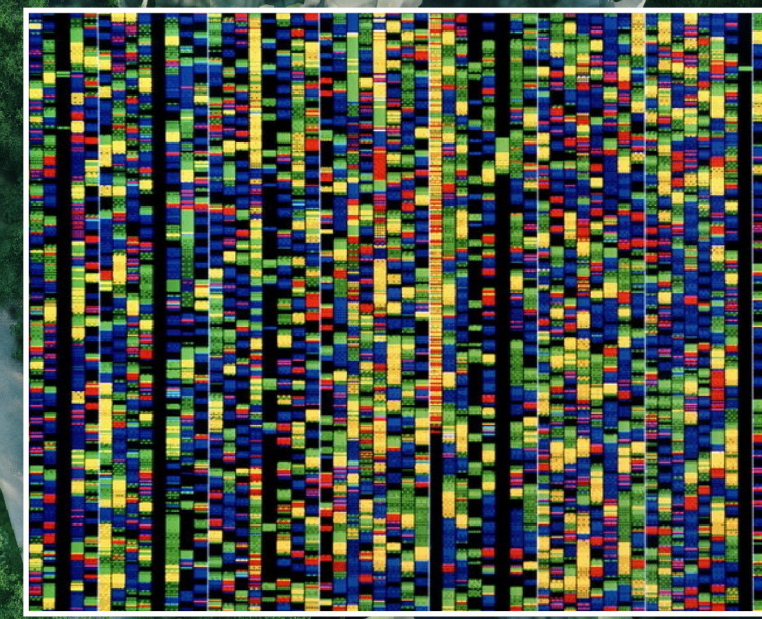
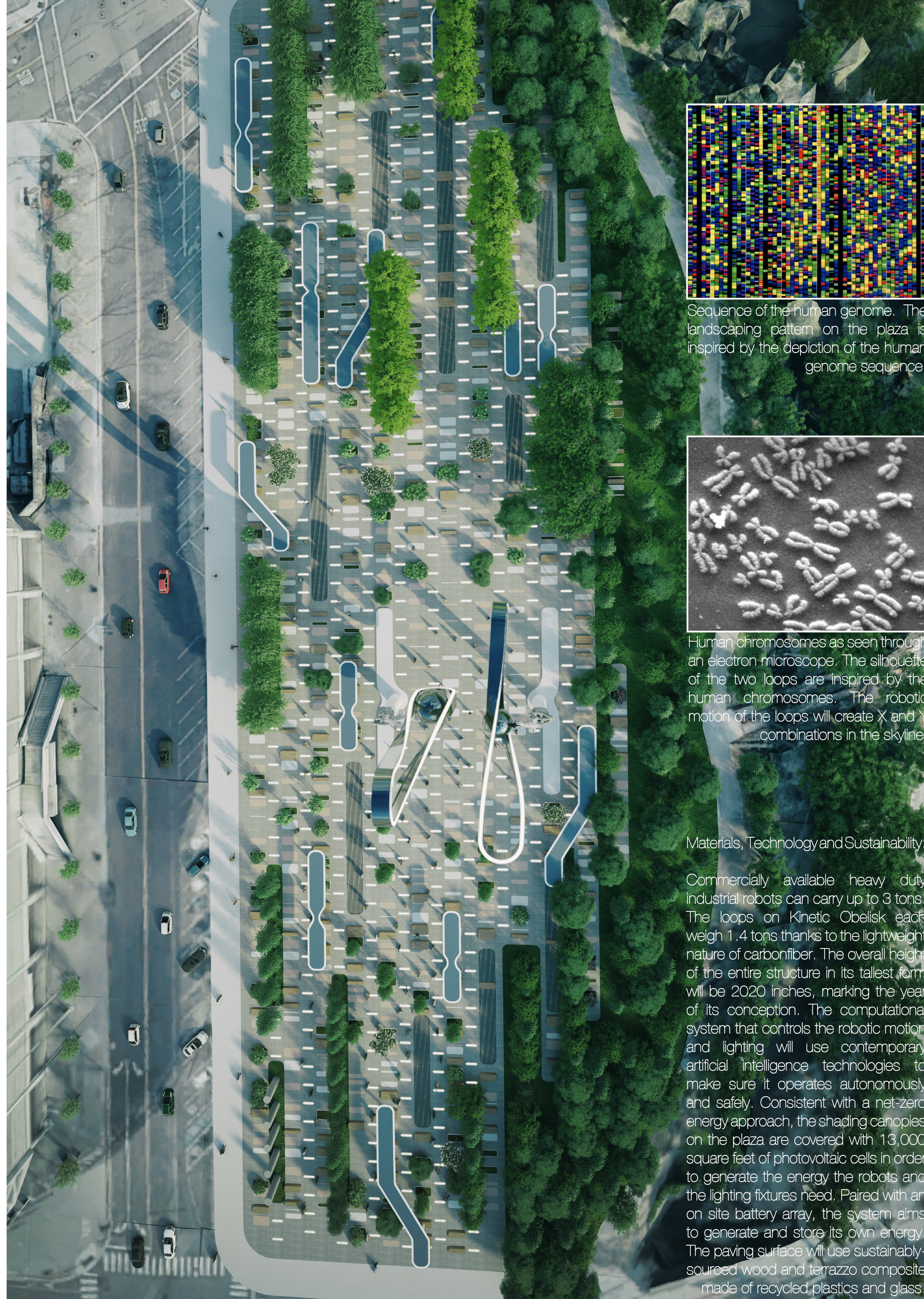




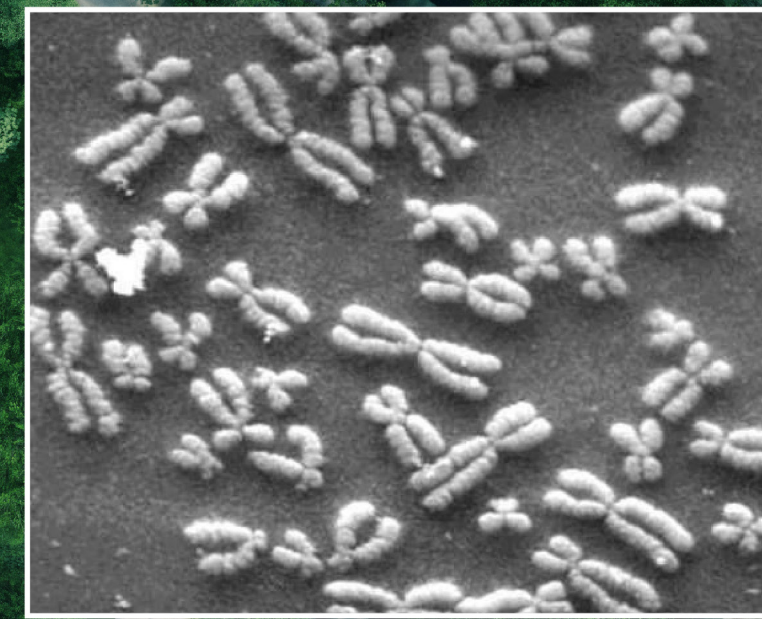


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Sequence of the human genome. The landscaping pattern on the plaza is inspired by the depiction of the human genome sequence.



Human chromosomes as seen through an electron microscope. The silhouette of the two loops are inspired by the human chromosomes. The robotic motion of the loops will create X and Y combinations in the skyline.

### Materials, Technology and Sustainability:

Commercially available heavy duty industrial robots can carry up to 3 tons. The loops on Kinetic Obelisk each weigh 1.4 tons thanks to the lightweight nature of carbon fiber. The overall height of the entire structure in its tallest form will be 2020 inches, marking the year of its conception. The computational system that controls the robotic motion and lighting will use contemporary artificial intelligence technologies to make sure it operates autonomously and safely. Consistent with a net-zero energy approach, the shading canopies on the plaza are covered with 13,000 square feet of photovoltaic cells in order to generate the energy the robots and the lighting fixtures need. Paired with an on site battery array, the system aims to generate and store its own energy. The paving surface will use sustainably-sourced wood and terrazzo composite made of recycled plastics and glass.