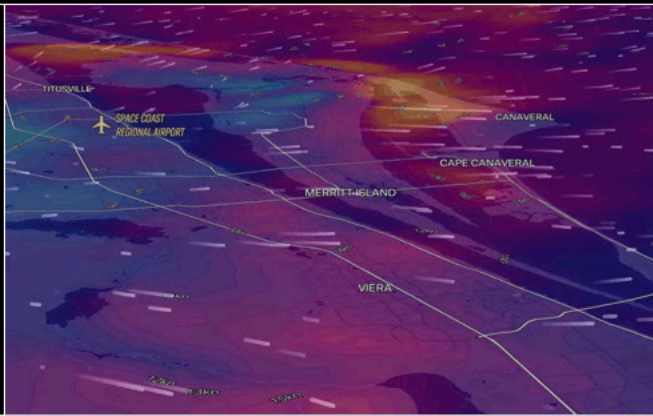


Design Diaries

volume one - atmo supercomputer

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DESIGN

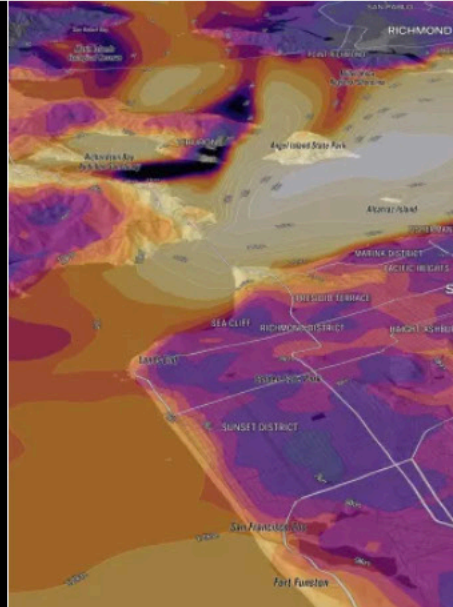




28.3922° N
80.6077° W
CAPE CANAVERAL
LAUNCHED 2024



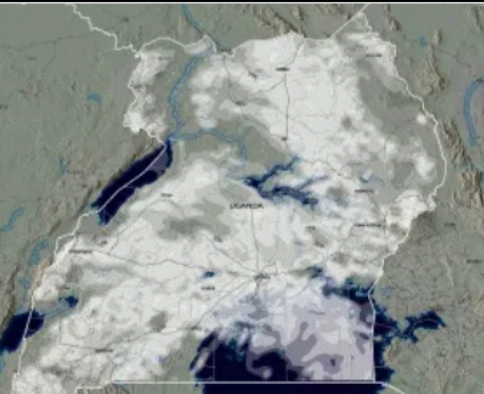
12.8797° N
121.7740° E
PHILIPPINES
LAUNCHED 2024



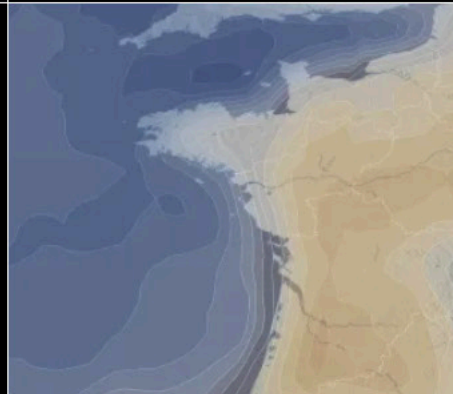
14.0583° N
108.2772° E
VIETNAM
LAUNCHED 2024

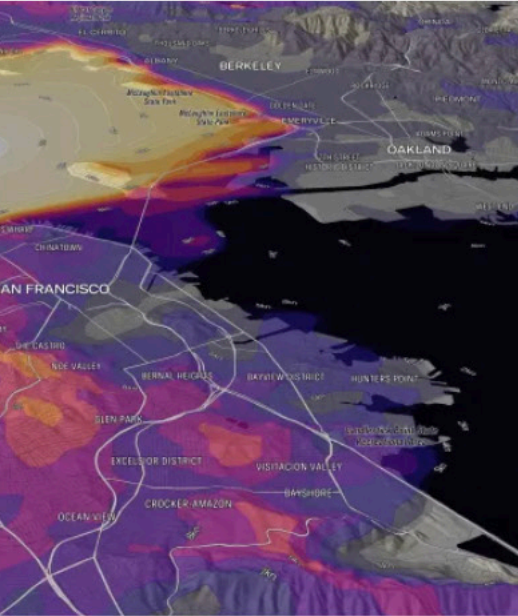


19.37.7749° N
122.4194° W
SAN FRANCISCO
FORECAST
LAUNCHED 2022



54.5260° N
15.2551° E
EUROPE
LAUNCHED 2021





Tell us about Atmo. Who are they/what are they?

Atmo is an AI technology firm based in San Francisco California, providing **ultra-precise weather forecasting** with deep learning computational systems, using worldwide real-time data.

Atmo are a growing team of engineers, scientists and meteorologists, on a mission to empower government and industry leaders with superior weather prediction tools to protect their citizens and assets, and **harness the power of nature.**

Atmo collects Earth's weather measurement data in real-time from the vast majority of weather satellites, ground stations, radars and ocean buoys. Their AI models use this data to continuously refine forecasts and improve their forecasting ability.

Weather changes fast. Atmo AI weather models deliver forecasts even faster. Up to **40,000 times quicker** than traditional models, and up to **50% more accurate** than today's most advanced forecasts.

Atmo delivers forecasts with up to **100 times greater detail.** With models as fine as 1km by 1km, offering unprecedented clarity in predicting weather for microclimates within larger climates.





Atmo merges the power of computing with the majesty of nature.

What was the design brief for this project, and what were your initial thoughts?

Atmo approached the Frank Stephenson Design team in summer 2021 with the following design brief:

'To create a **striking** and **functional** industrial design for the first-generation Atmo Weather Supercomputer that drives awareness, purchase, and successful deployment of the system throughout the world'

From the outset, there was a clear visual approach: Atmo designs begin with **natural motifs**, such as a sunset, storm front, or geological formation, and apply **mathematical structures** to them, such as grids, slices, and symmetries to evoke a sense of order and mastery.

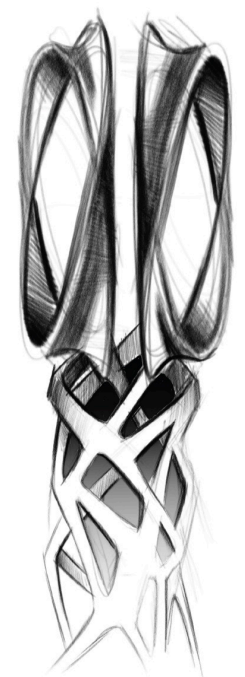
An Atmo computer is **sculptural, organic, reverential, and monumental**. It is equally at home in a natural environment or museum.



Where did you get your design inspiration/ideas from?

This design brief provided by the Atmo team was a fantastic starting point, as it conveyed a clear sense of how they envisioned their product, along with the environment that it would be used in. The foundation of the design story was already in place.

This was not another super computer, this was to be a sculpture, which displays the vision of the brand.



In the early stages of the project, we focused solely on shape and sculpture, in order to provide inspiration to the team of engineers. The initial moodboard explored the theme of

Mathematic Sensuality: The creation of organic forms using calculated geometry, such as single planar surfaces, akin to the mathematic dissection of weather patterns. Creating an intricate yet natural appearance.

Initial theme sketches were generated to understand the overall perception and impact of the object, creating a visual language, and a direction of intent.

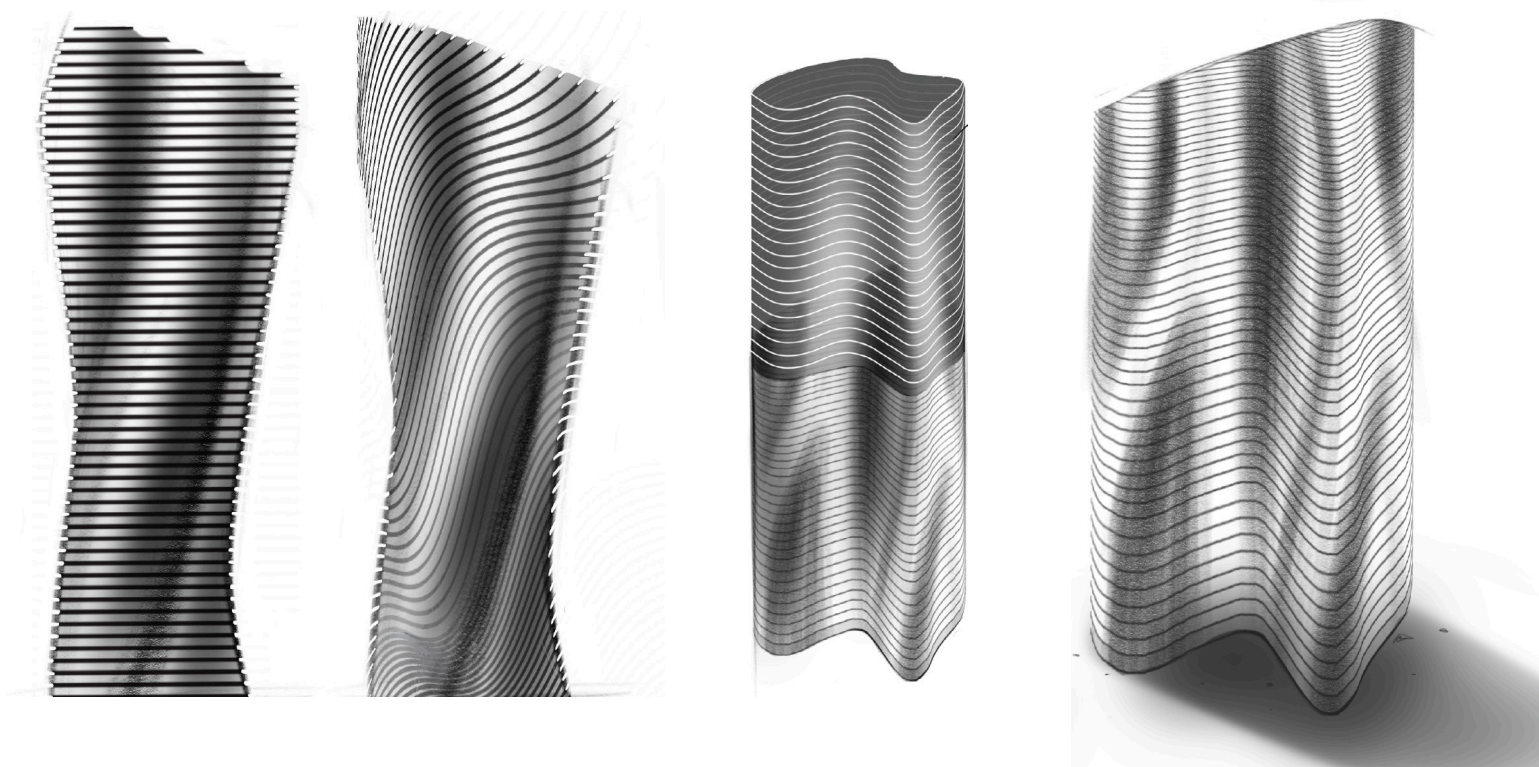
Translation of organic surfaces into perfect segments akin to computational mapping of data.

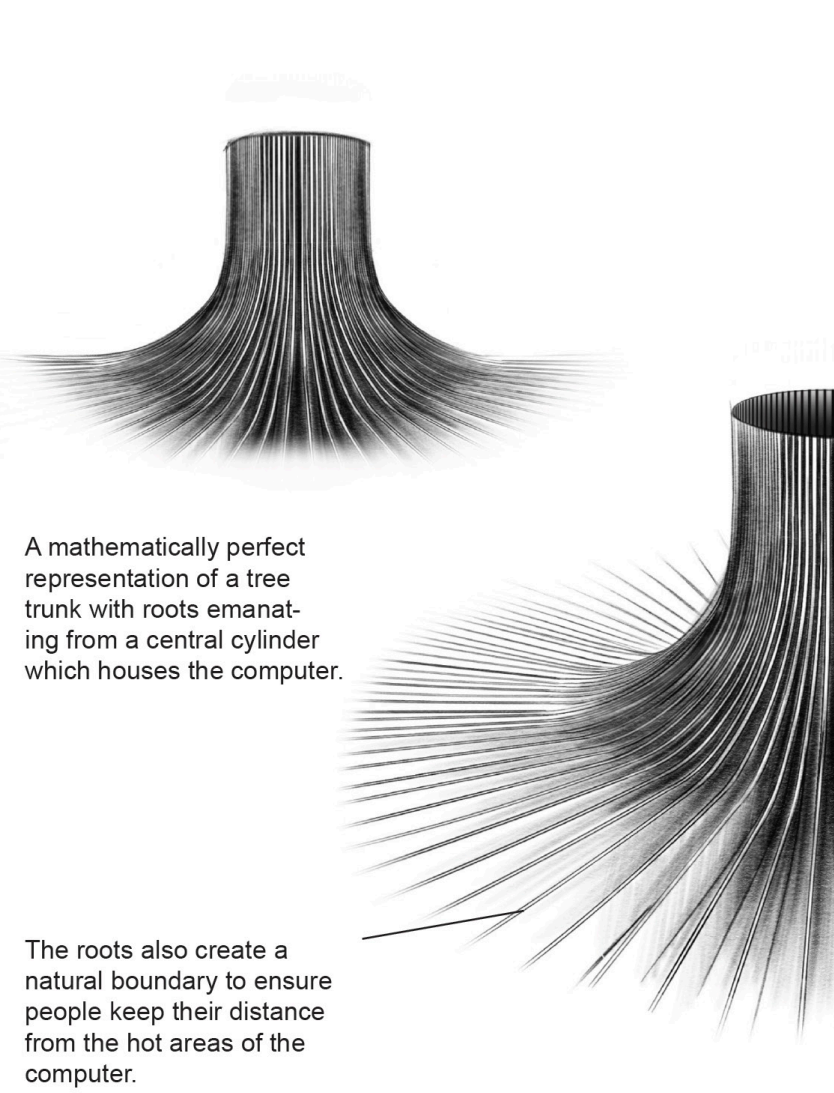
Two 3 dimensional waves joined by rigid structure.

Large fins act as heat sink.

Integrated with rocks from the surrounding landscape

Using multiple splines or planes to create a more complex geometry



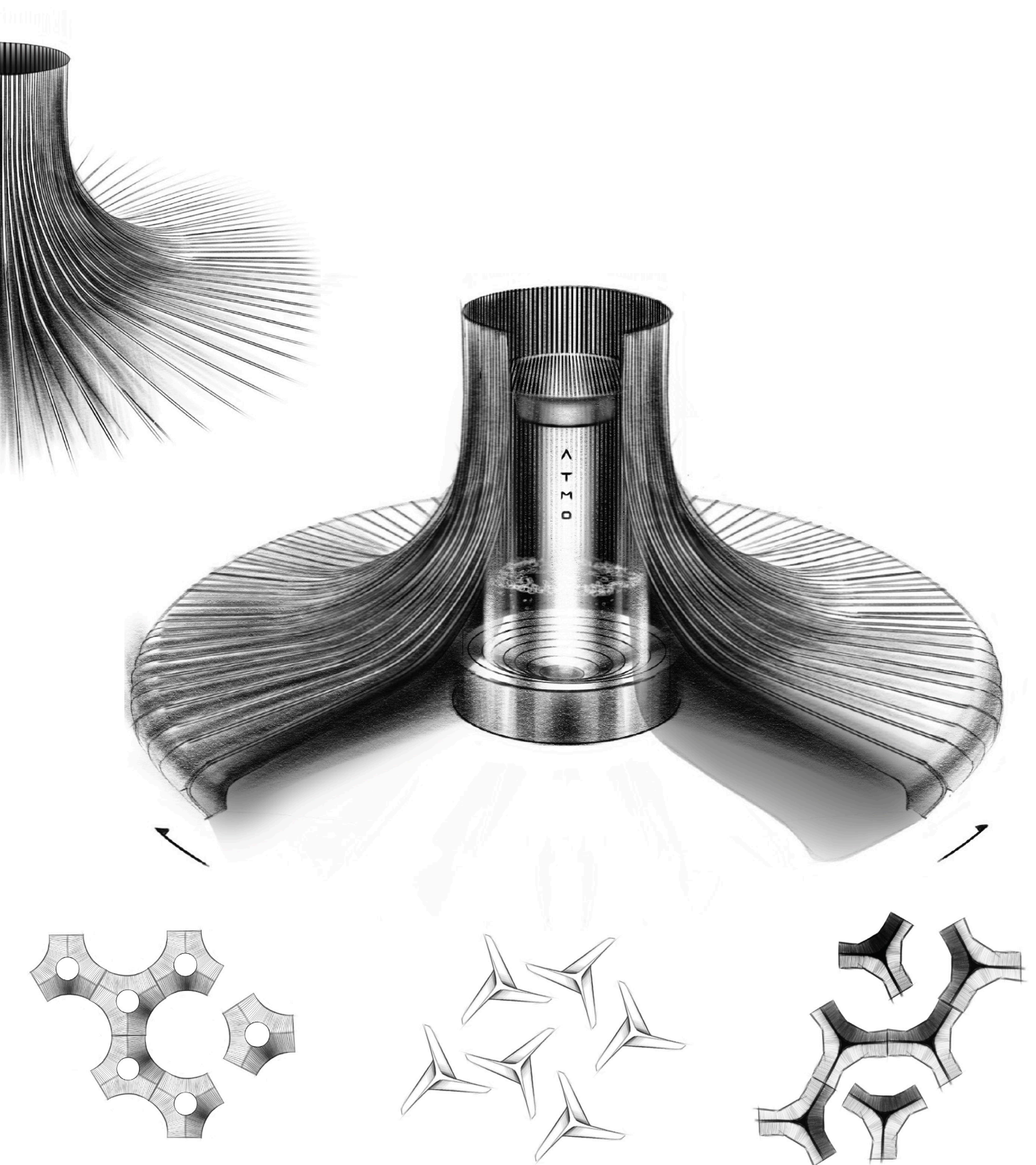


Explain the design process for ATMO and the complexities/challenges you had to consider/face?

We developed a range of concepts with a large surface area in order to **maximise heat dissipation** from the computer cores. The cores themselves are water cooled to allow for maximum efficiency.

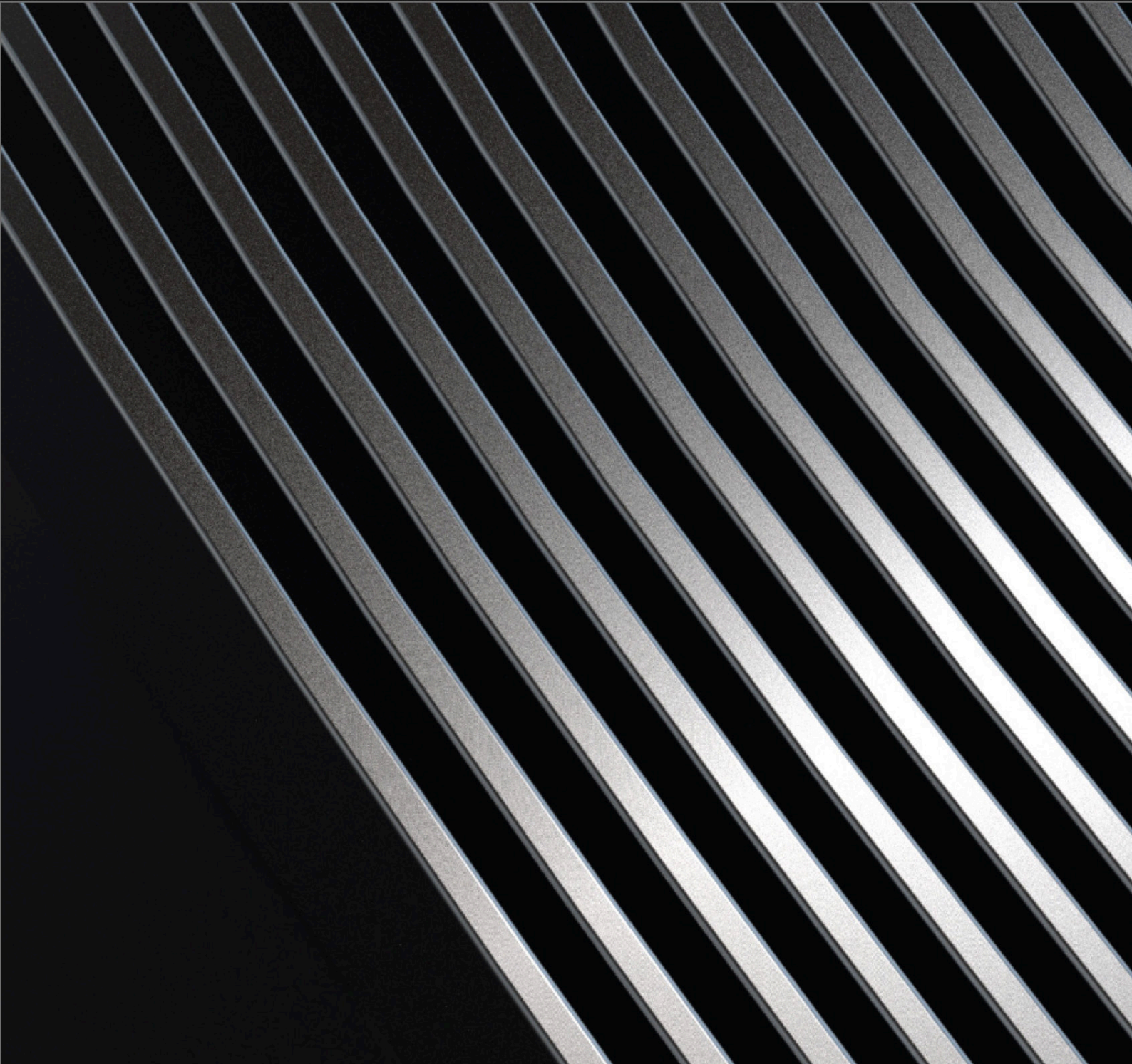
The dissipation of heat created an opportunity to create a unique piece of furniture, whereby we could use the heat extracted from the computer cores to subtly heat the seating area surrounding the computer - further **increasing the human interaction between the device and it's environment.**

At this point the design is starting to take shape, reminiscent of a tree trunk emerging from the ground, giving a solid base to surround the computer. The shape is also reminiscent of the early CRAY computers from the seventies, which incorporated seating areas around a cylindrical base.



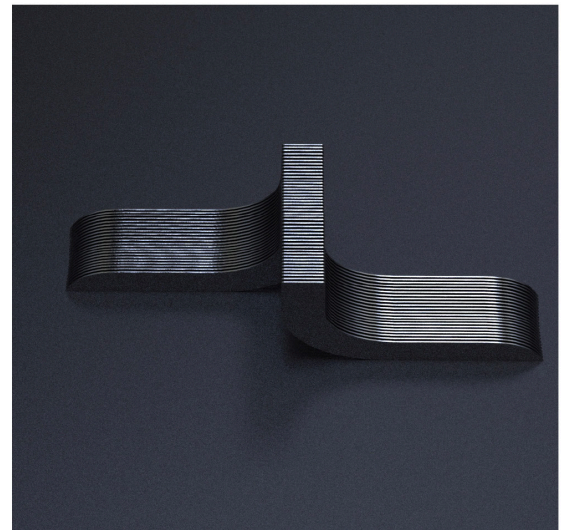
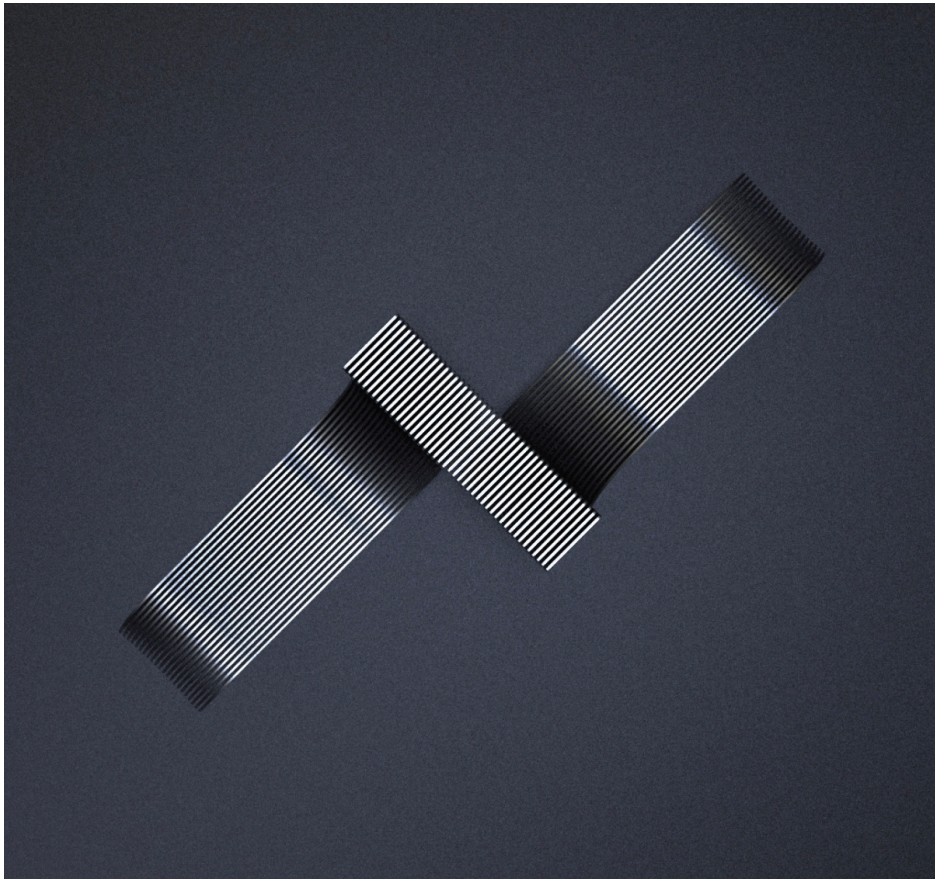
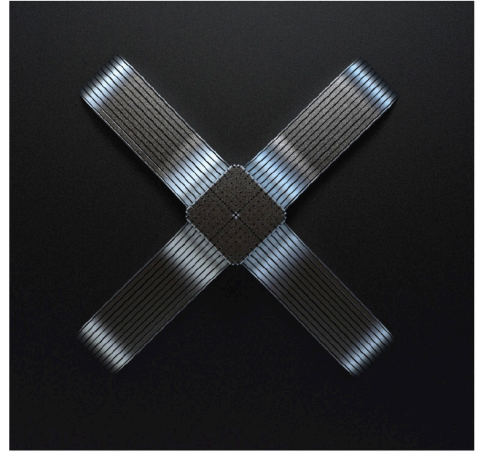
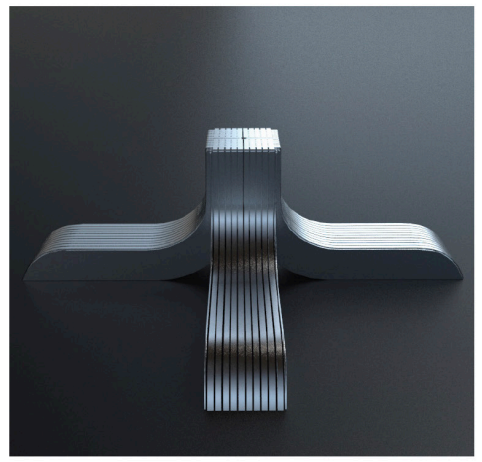
MODULARITY

Exploration of clusters and interlocking units as a display, creating a communal seating area with seats facing each other in some cases to create areas of social opportunity.



We then approached the final direction: Crossroads. A modular interpretation of the previous design proposal allowing for a variety of configurations between multiple units.

This is also the point where the design work transitioned to 3D, allowing us to work with the Atmo team to ensure that all of the hard points and engineering requirements were met, whilst maintaining a strong design theme. The access doors were deliberately hidden between the gaps in the blades in order to minimise the visible shutlines. 14 identical blades were delicately chamfered, with each curve unbroken from the base of the computer rising up to the centre.

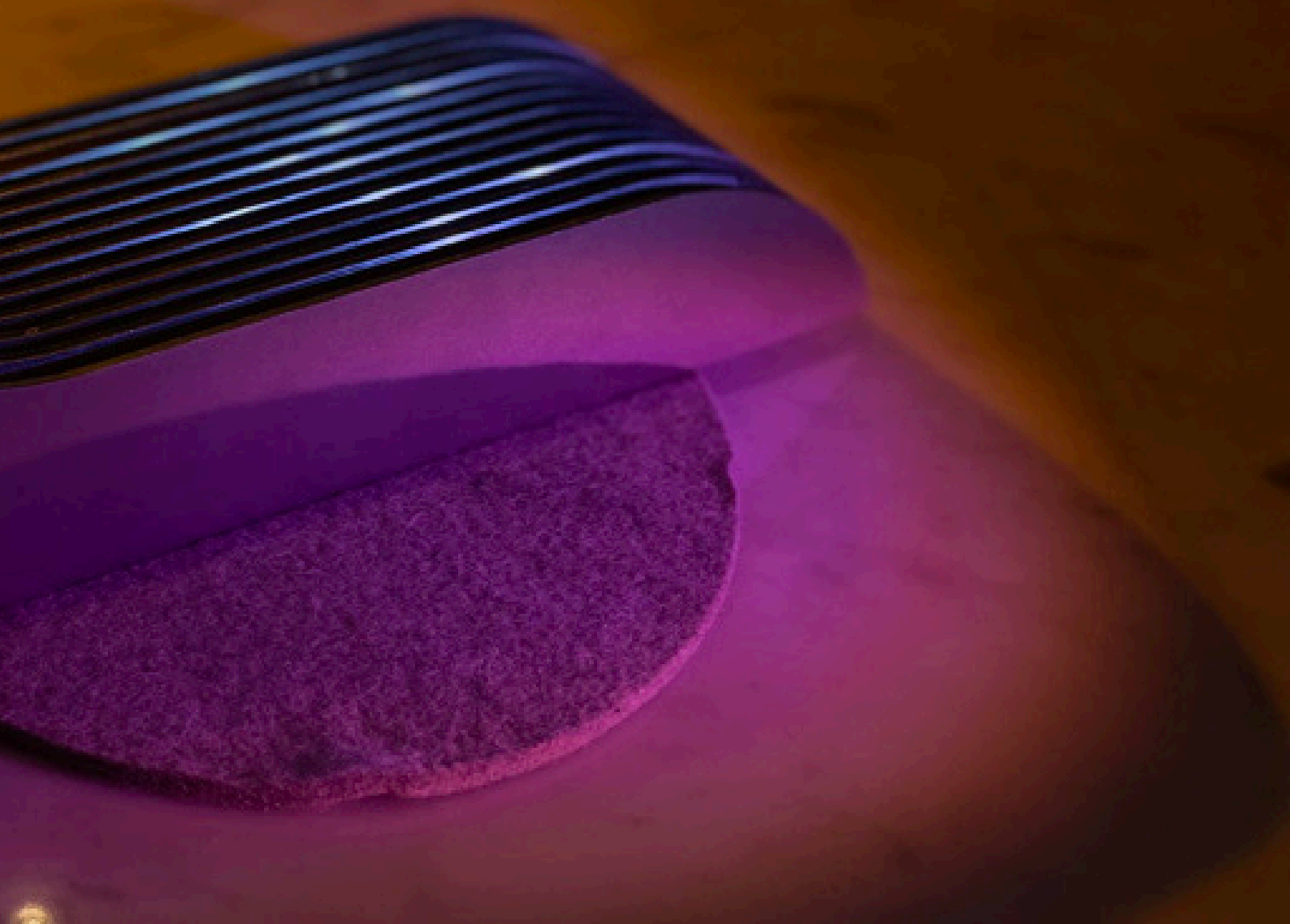


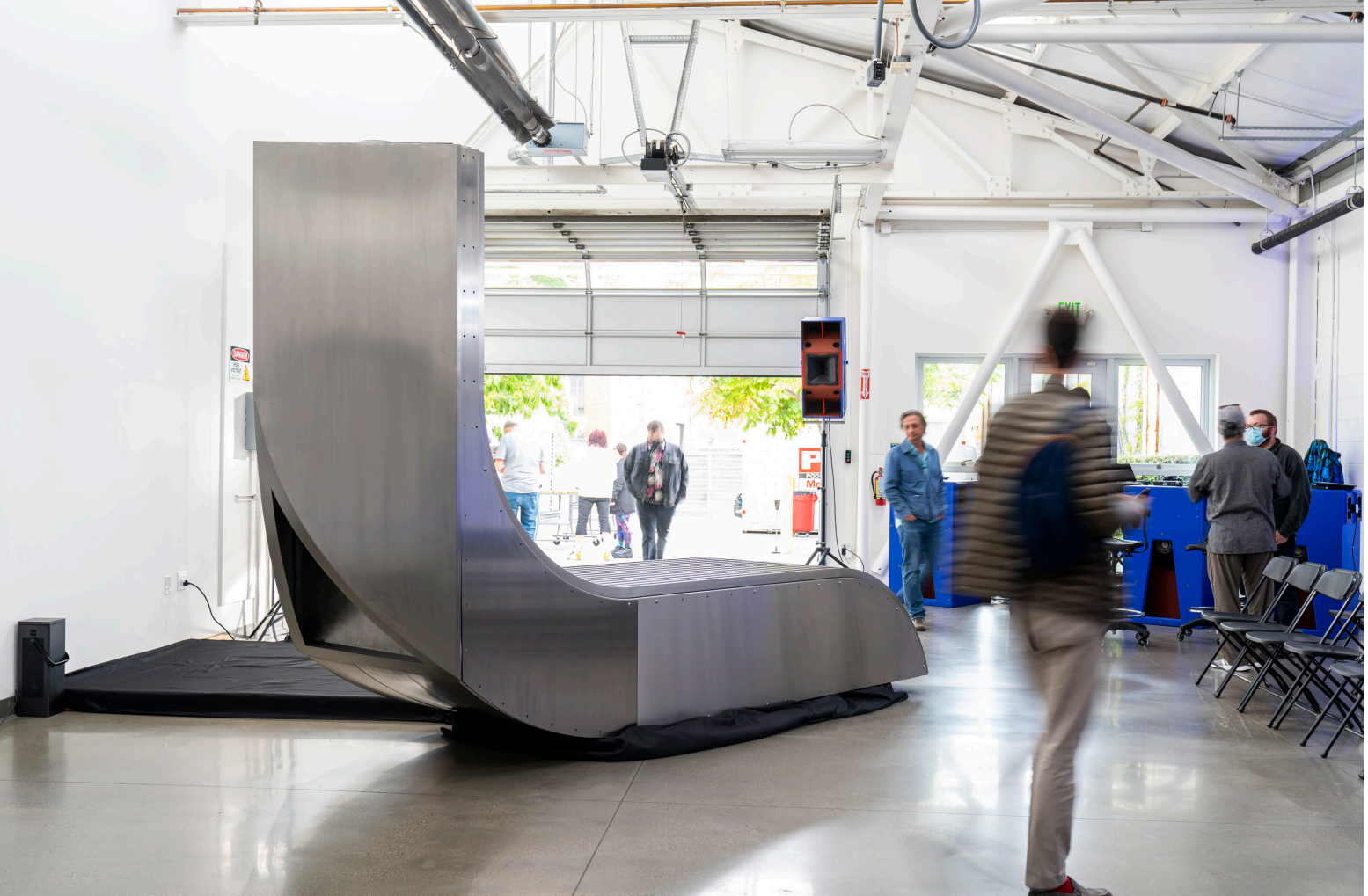
DUAL UNIT SEATING PROPOSAL

Alternative approach with units sat side by side with a longer rectangular core as opposed to increasing the height of the unit.



Scale prototypes were manufactured in order to analyse the design in a physical state, and test various lighting conditions for the launch event. The prototype incorporated a triangulated rear section to allow up to 4 units to be connected together, hence the codename 'crossroads'.





What were the highlights of working on this project? What are you most proud of about the finished project?

I am most proud of the fact that as a team we were able to maintain a very **strong design theme** from beginning to end. Balancing natural forms with precise, mathematic structures, leading to a finely resolved and highly detailed model. The shape itself is very **pure and simple**, easy to recognise and distinguish from other super computers - in fact, it doesn't look like a computer at all!

The two founders of Atmo, Alexander Levy and Johan Math  , had a fantastic grasp of good design, which made the process very efficient from the outset. And we converged on a final design proposal relatively quickly. This ensured we had plenty of time to refine the shape, radii and finishes to ensure a high quality perception.

The 1:1 prototype was unveiled at a launch event in San Francisco in 2022. The imposing polished steel structure dominated the event space, whilst providing a stunning backdrop for a photoshoot for the admiring guests, and even served as a dance platform!

[Click here to watch the launch event video](#)

Words from Euan McPherson
Lead Designer







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The background of the entire page is a pattern of numerous parallel diagonal lines. These lines are closely spaced and vary in grayscale, creating a sense of depth and movement. The lines run from the top-left towards the bottom-right.

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