



Henry Parrott

Project: **R³** (E-Sensor Carbon Concept)

Day 01 — DNA

Day 02 — Sketching

Day 03 — Modeling

Day 04 — Project Layout

Rock

GT's Journey

Design philosophy should always derive from concepts which are meaningful.

In its journey across the landscape, a trail bike conquers boulders, crevasses, and gravel alike. Each element of terrain encountered on the trail fulfills a criteria in the hierarchy of design. This is the origin of **R³**.



First Read: Silhouette

- Big Volumes
- Convex Curvature

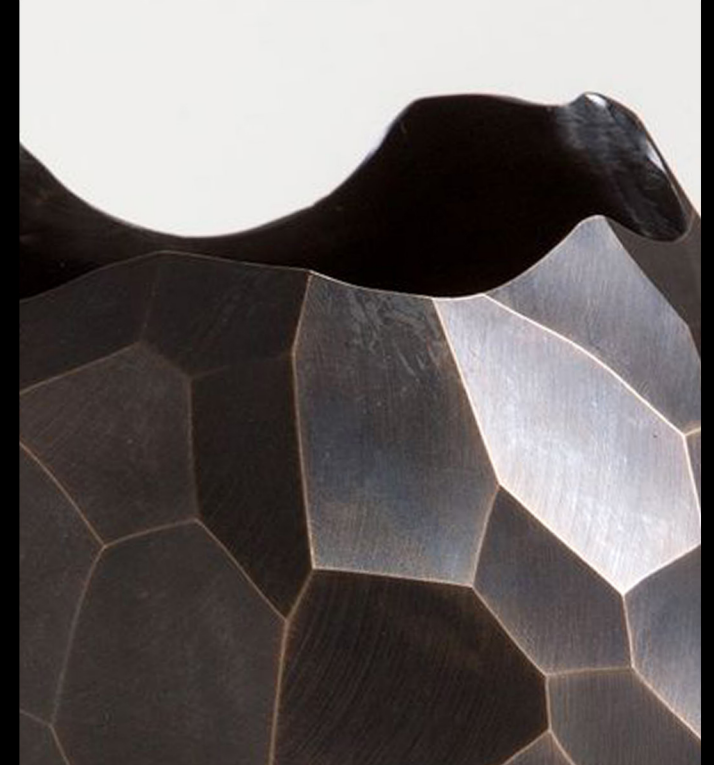
Ravine



Second Read: Surface

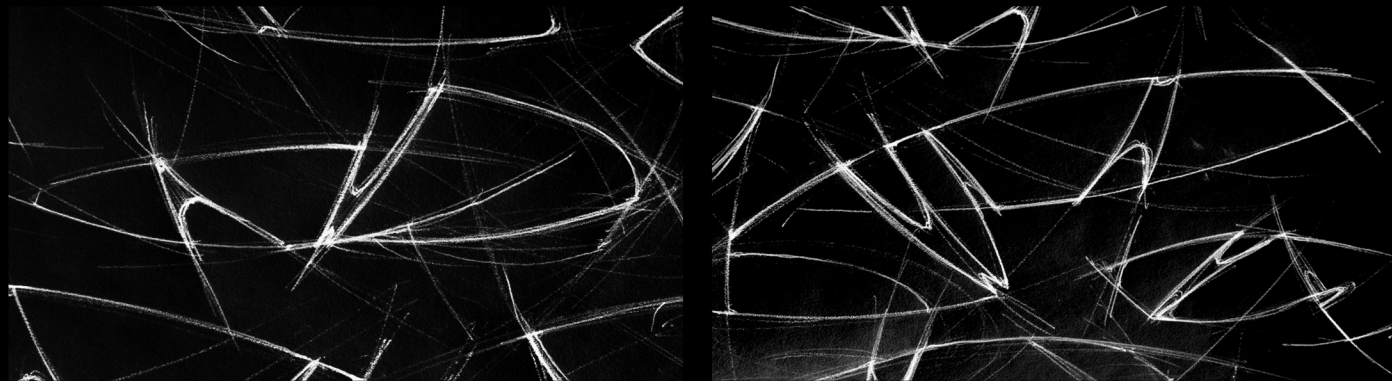
- Parabolic Cuts
- Tangential Creases

Rubble



Third Read: Detail

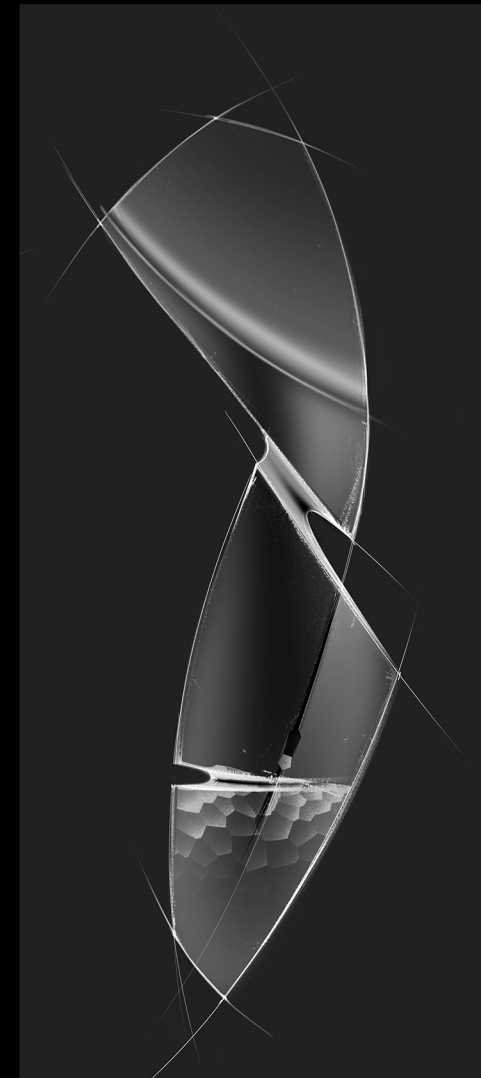
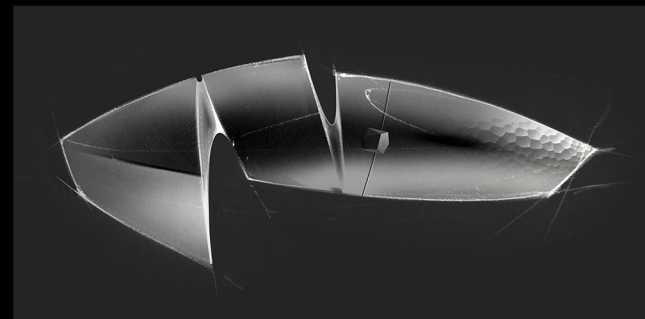
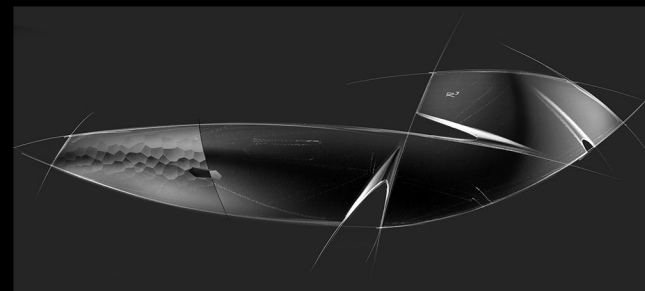
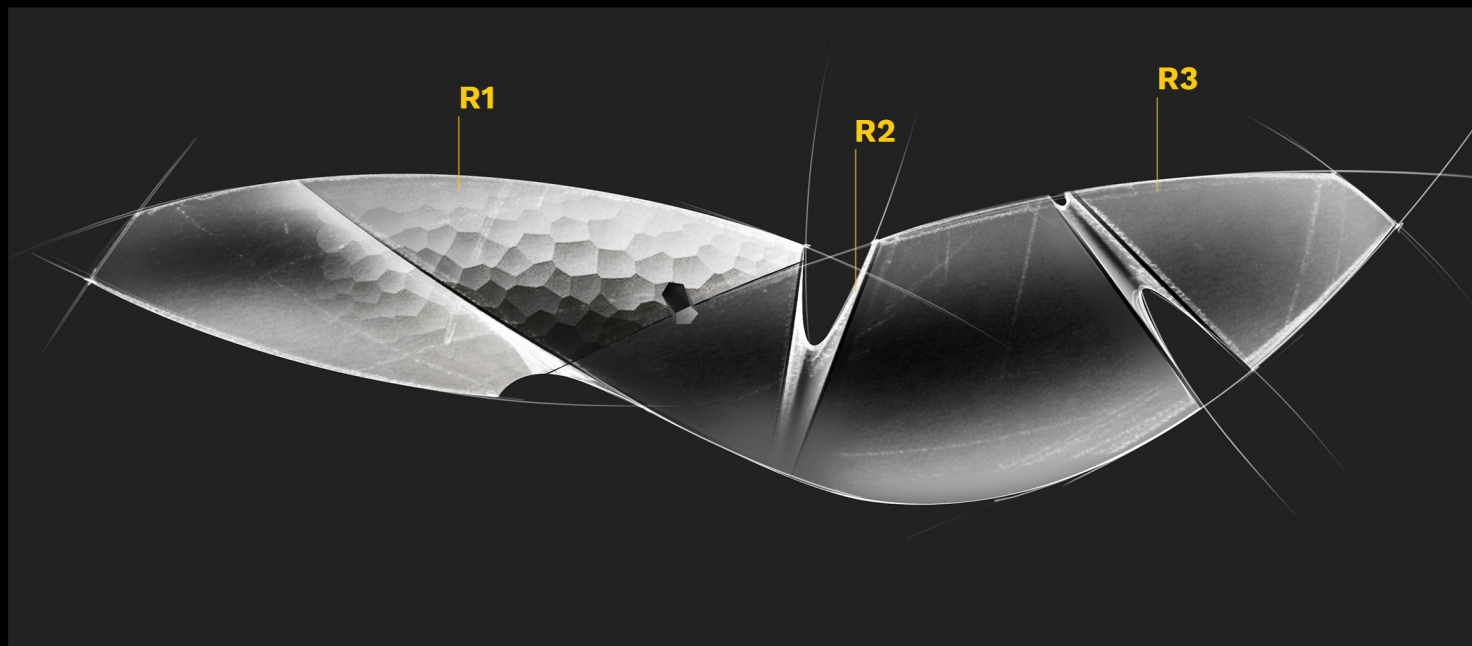
- Geometric Components
- Scalloped Voronoi

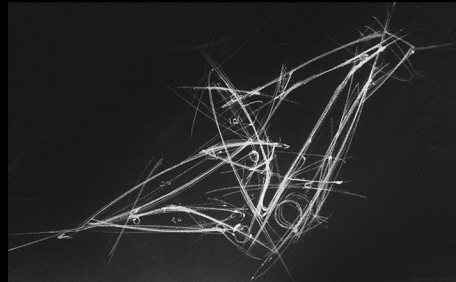
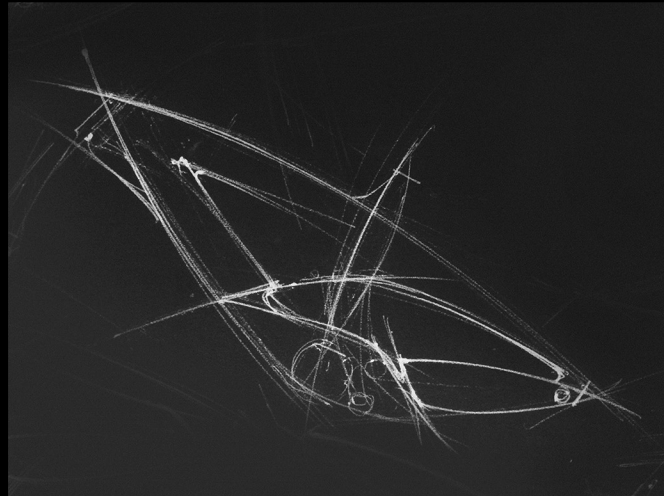
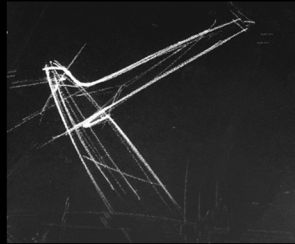


Spirit of the Trail

Adhering to the “rules” of the R³ design philosophy, a systematic form language begins to emerge.

The ability to justify every element of the design from the standpoint of brand values is the end goal of this methodology. It is harder to challenge or question design choices which have underlying meaning.

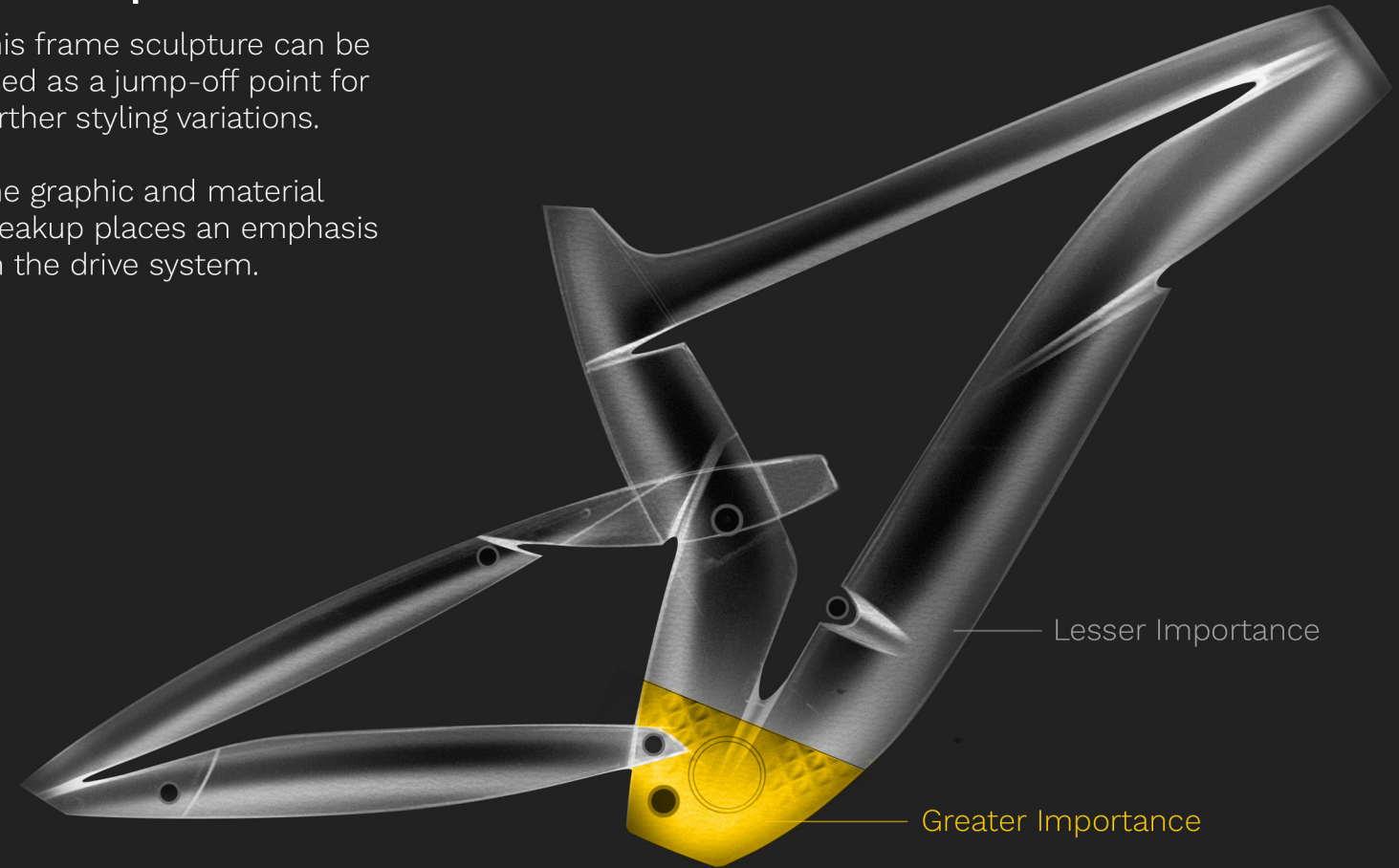




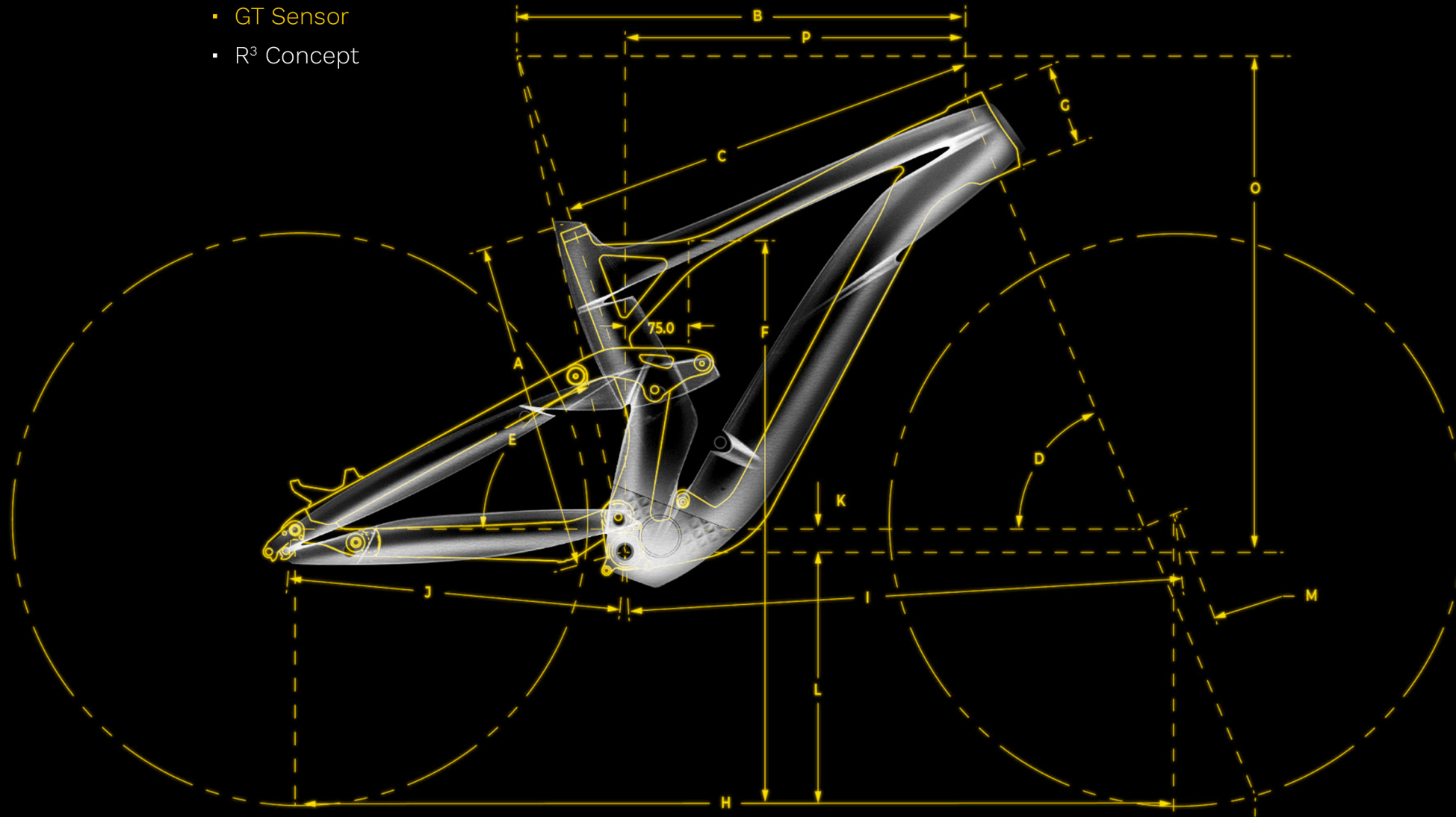
Frame Intepretation

This frame sculpture can be used as a jump-off point for further styling variations.

The graphic and material breakup places an emphasis on the drive system.



- GT Sensor
- R³ Concept



Benchmark Validation

The concept bike is a compromise between production considerations and a new design philosophy. To that end, frame geometry and hardpoints remain identical unless absolutely necessary.

The most significant changes are a **thicker down tube** to accommodate the battery, and a **relocated shock anchor** which was displaced by the drive unit. Potential issues include the manufacturing of sharp radii, and the presence of thin frame sections.

Final Design





Sketch Model

A model of the concept bike allows intuitive evaluation of how components interact in 3D space. One insight provided by the model is the extent to which the shock rocker must be raised to accommodate an E-bike's suspension travel.

Created with Sub-D tools in Foundry Modo.

Natural Appeal

Why a Voronoi texture?

Aside from its justification in the design philosophy, the texture grounds the bike in its environment. A trail bike is intended to operate in nature; it should be compatible with nature in a holistic way.

The Voronoi will also hide wear and damage on the surface, which the lowest component of a bike is susceptible to.

