

CO2 Conversion Process: Breaking & Bonding

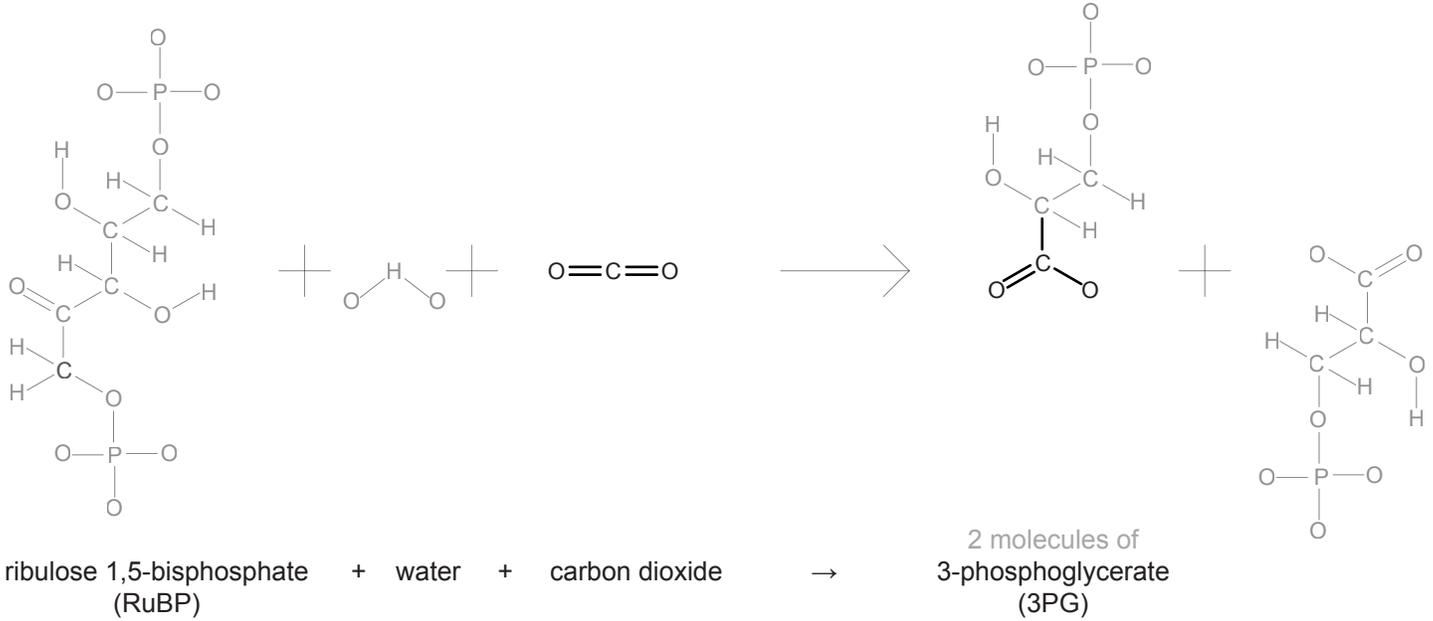
**CO<sub>2</sub> Accumulation & Conversion:**

The architecture machine is a research lab, situated above a smoke stack, that captures released CO<sub>2</sub>. Within the core tower, researchers focus on converting CO<sub>2</sub> into compounds with less detrimental environmental effects.

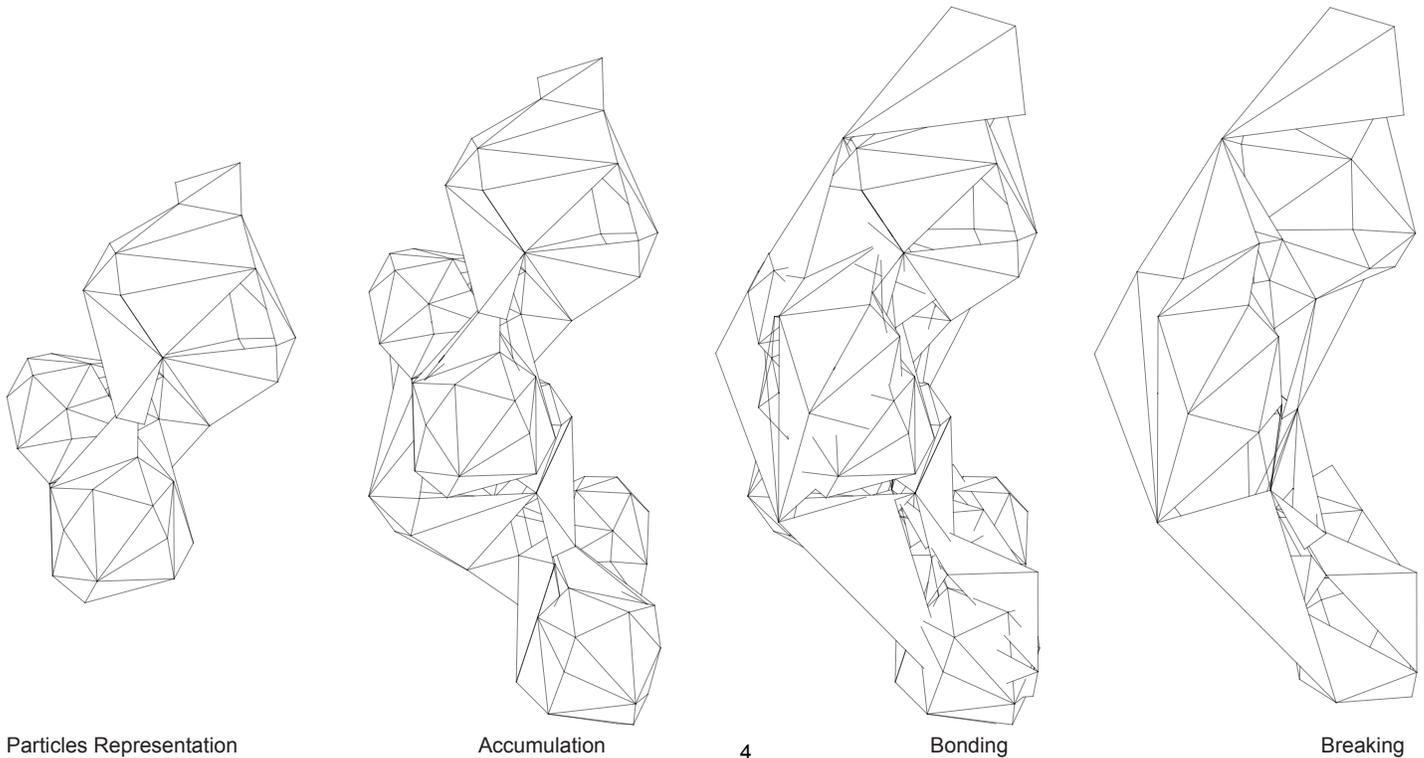
The conversion of CO<sub>2</sub> into another compound entails the breaking of one or both of its double bonds and the forming of new bonds<sup>1</sup>.

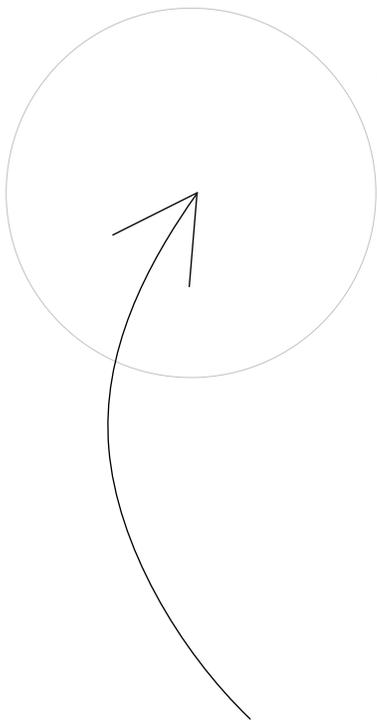
This process of accumulation and conversion (breaking & bonding) directs the architectural design procedure.

A geometric representation of particles is accumulated to form a single pathway. The particles are "bonded" with planar connecting surfaces and the dividing walls are "broken".

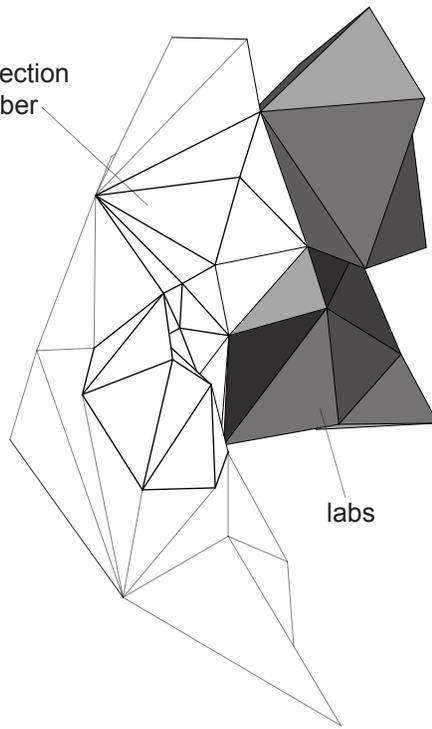


Instance of CO<sub>2</sub> Conversion Process in the Calvin Cycle during Photosynthesis





CO<sub>2</sub> collection chamber

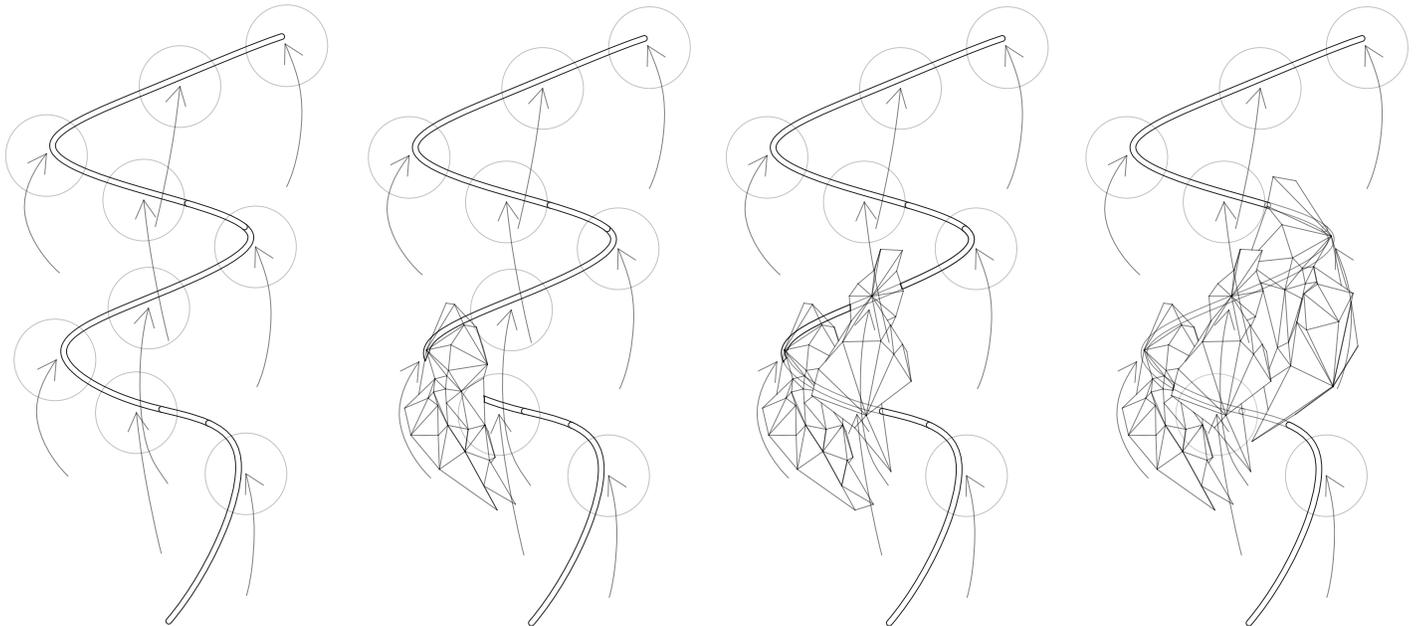


Each pathway culminates in a CO<sub>2</sub> collection chamber, which is linked to a lab.

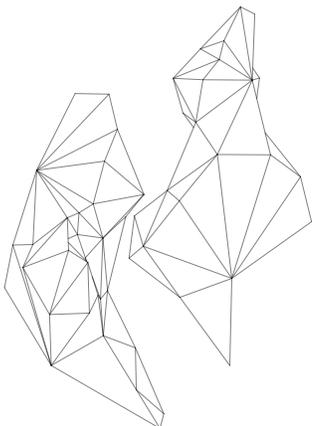
The architecture grows according to the motion of the particles, which dissipate in a vortex plume formation. Thus pathways accumulate around a spiral backbone.

The conversion process fuses the separate strands. Dividing walls are "broken". Individual pathways are "bonded" to form an inner vortex of labs within an outer vortex of chambers.

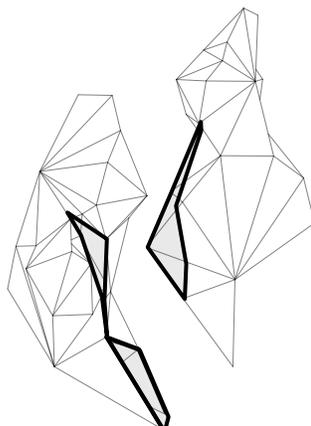
1. "RuBisCO," last modified February 18, 2013, <http://guweb2.gonzaga.edu/faculty/cronk/biochem/R-index.cfm?definition=rubisco>.



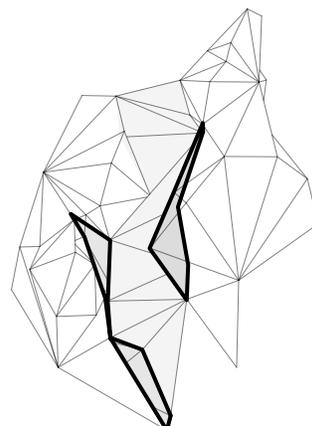
Accumulation



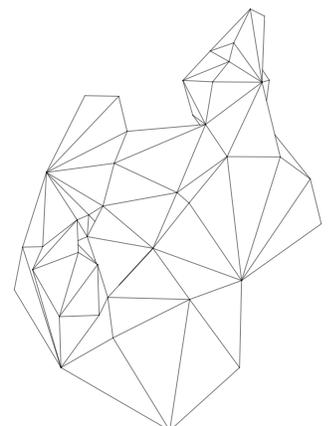
Conversion:



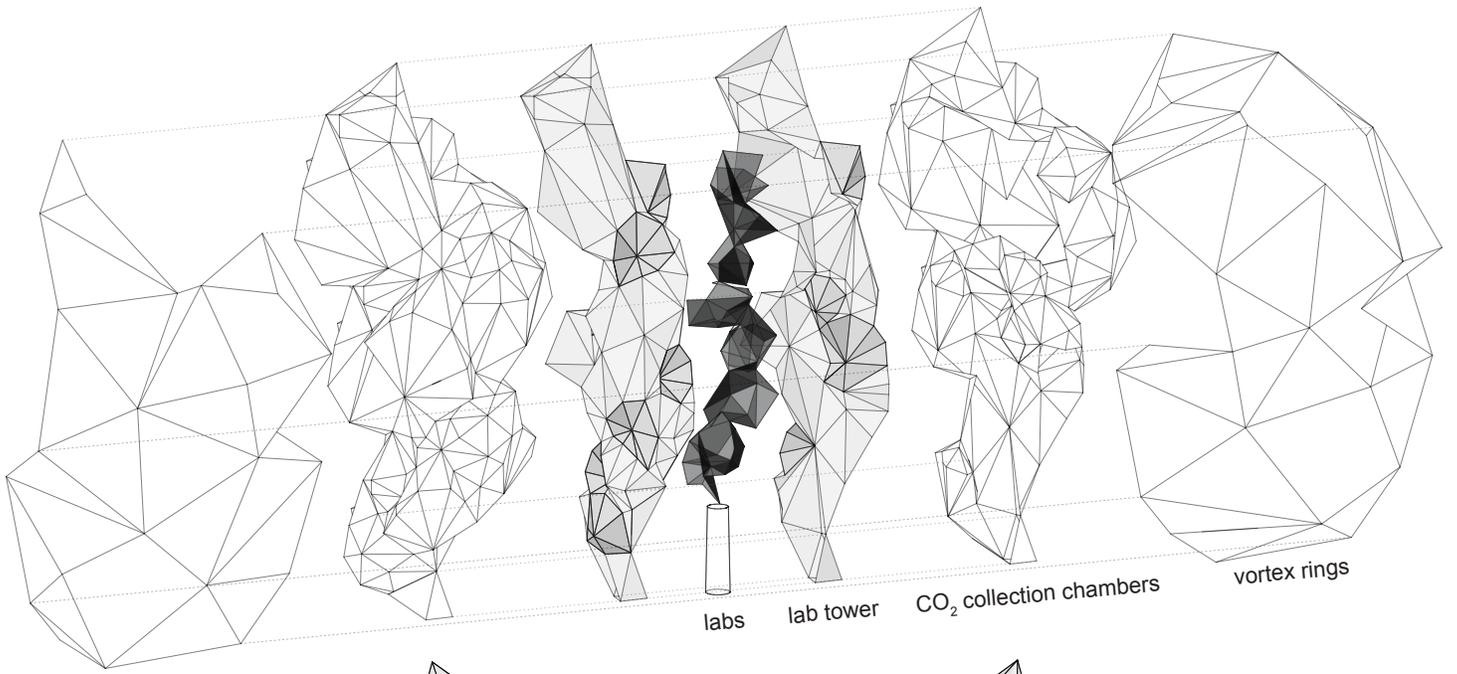
Breaking



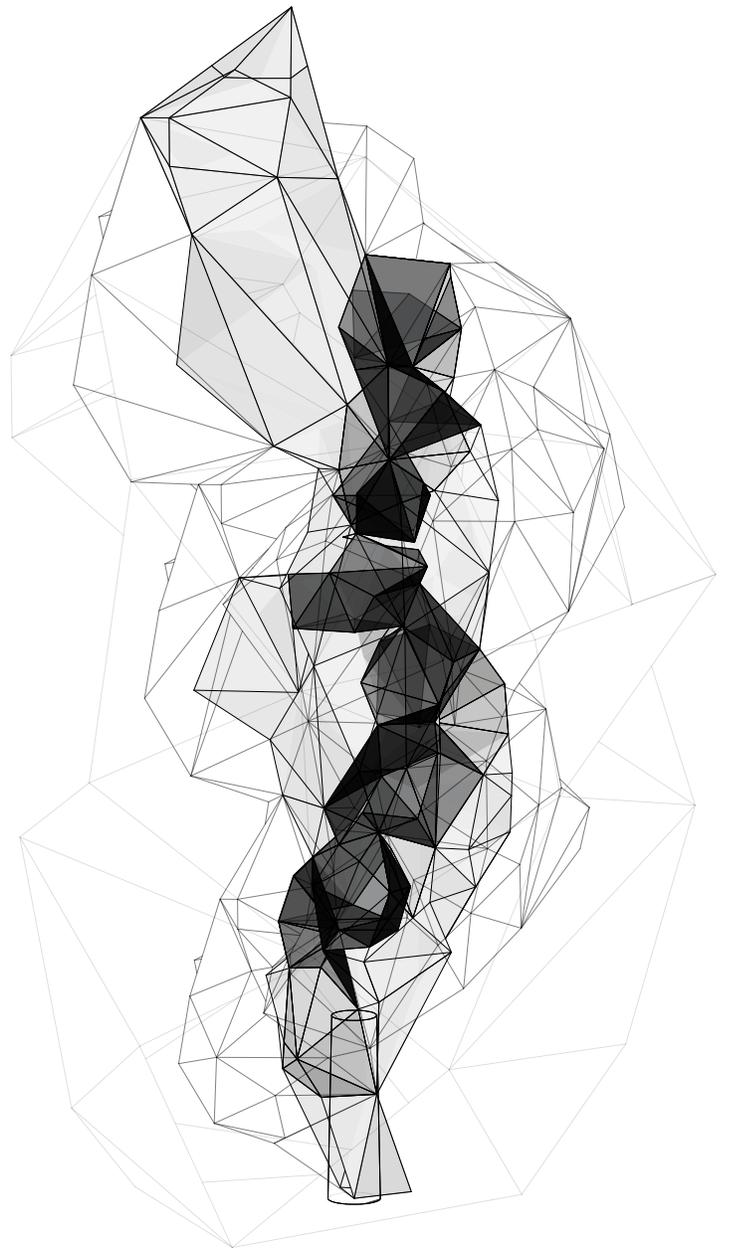
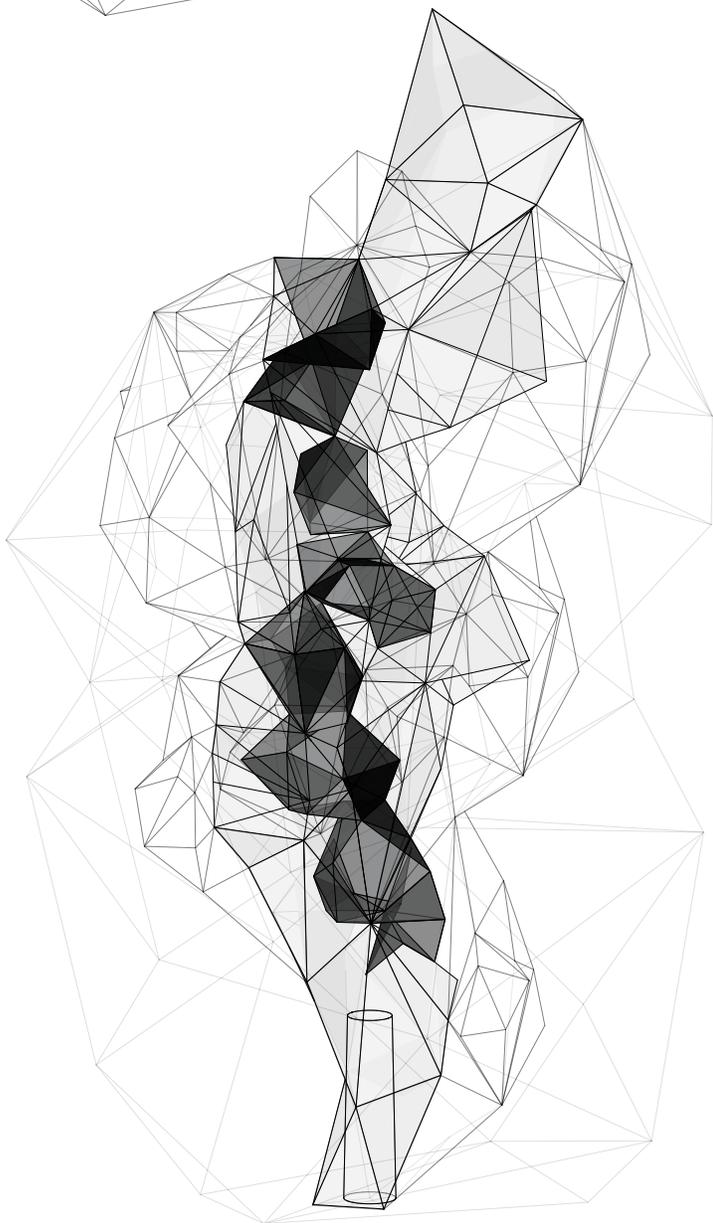
Bonding (Inner Vortex)

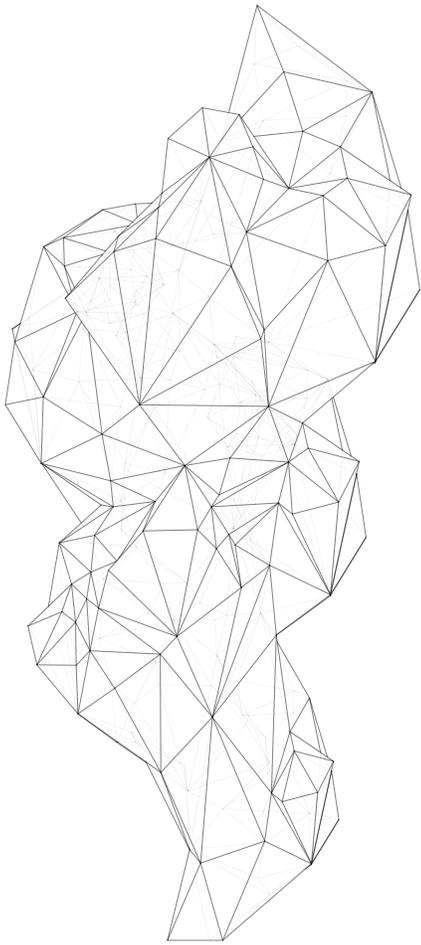


Bonding (Outer Vortex)

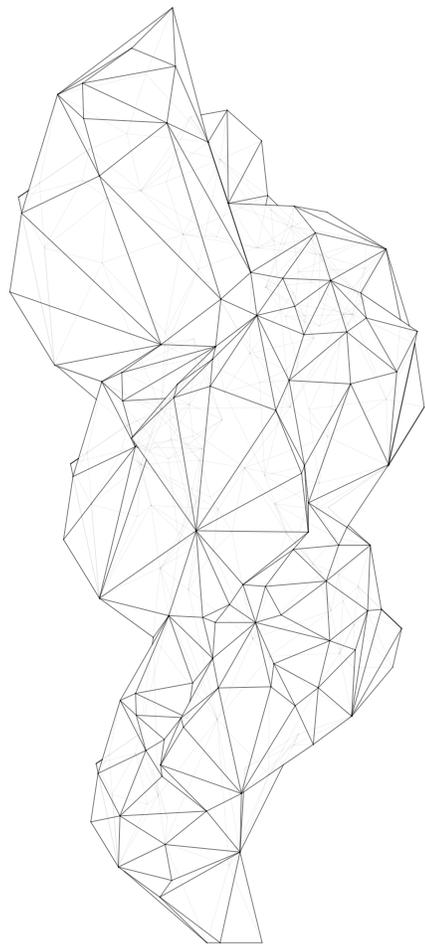


labs lab tower CO<sub>2</sub> collection chambers vortex rings

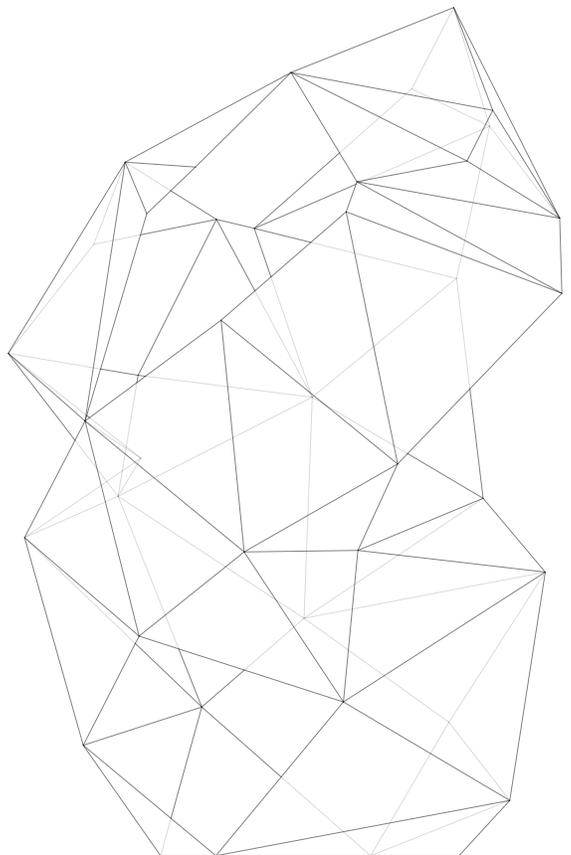
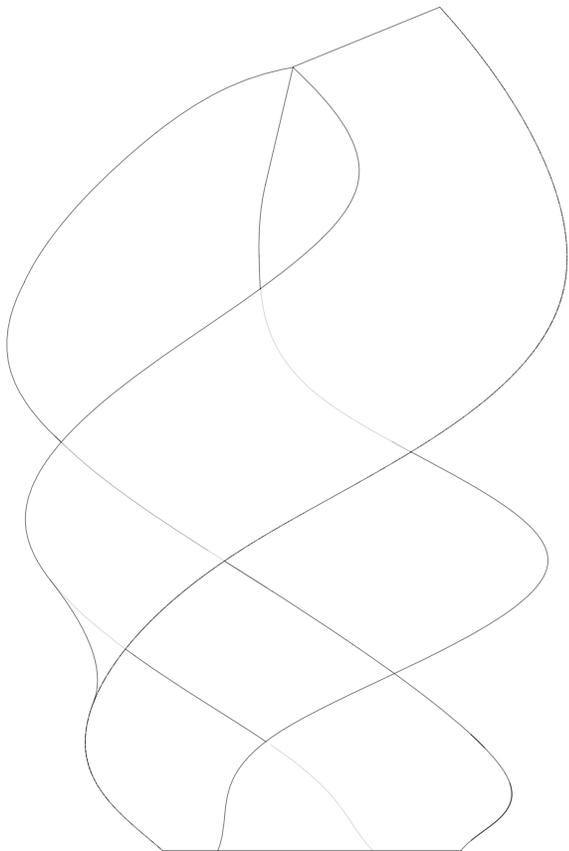




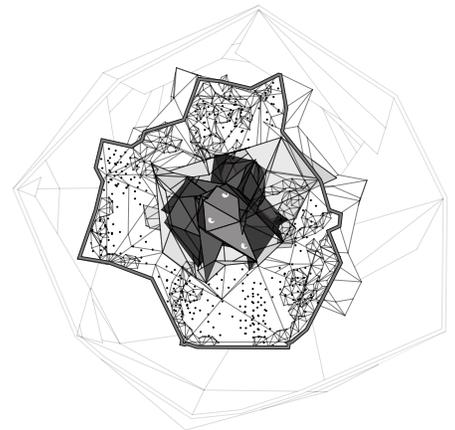
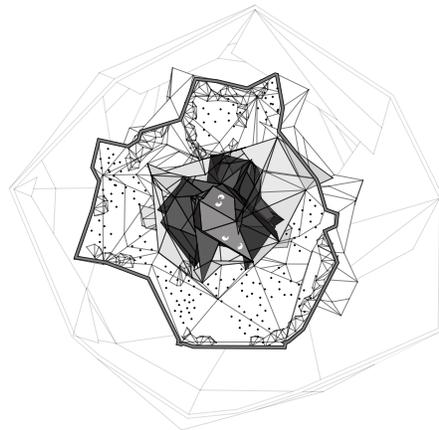
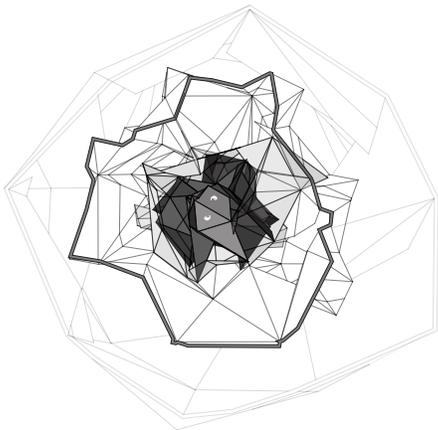
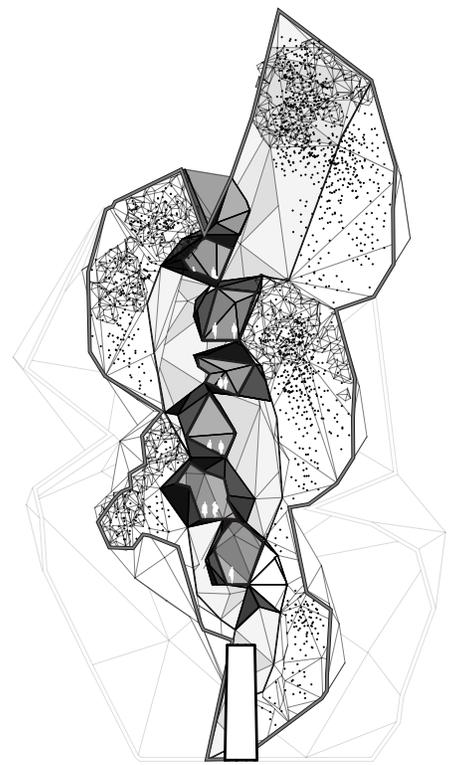
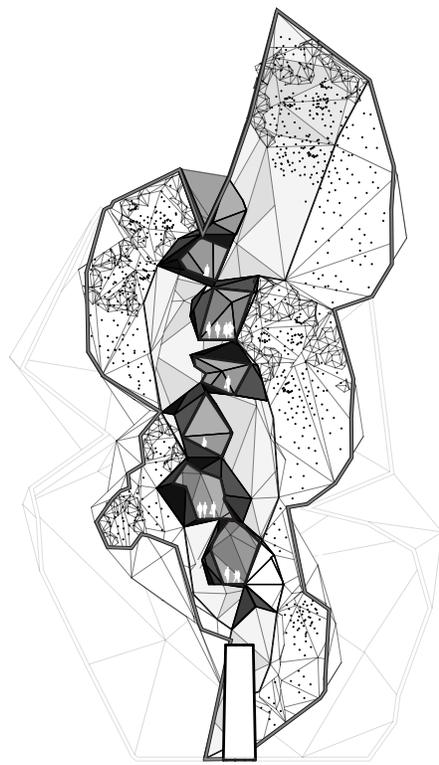
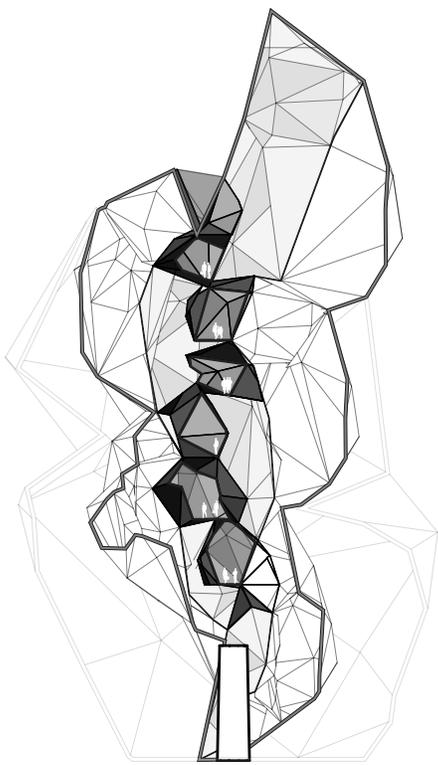
Front



Back



Vortex Rings



Time →

CO<sub>2</sub> Accumulation Over Time

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