Voronoi 1

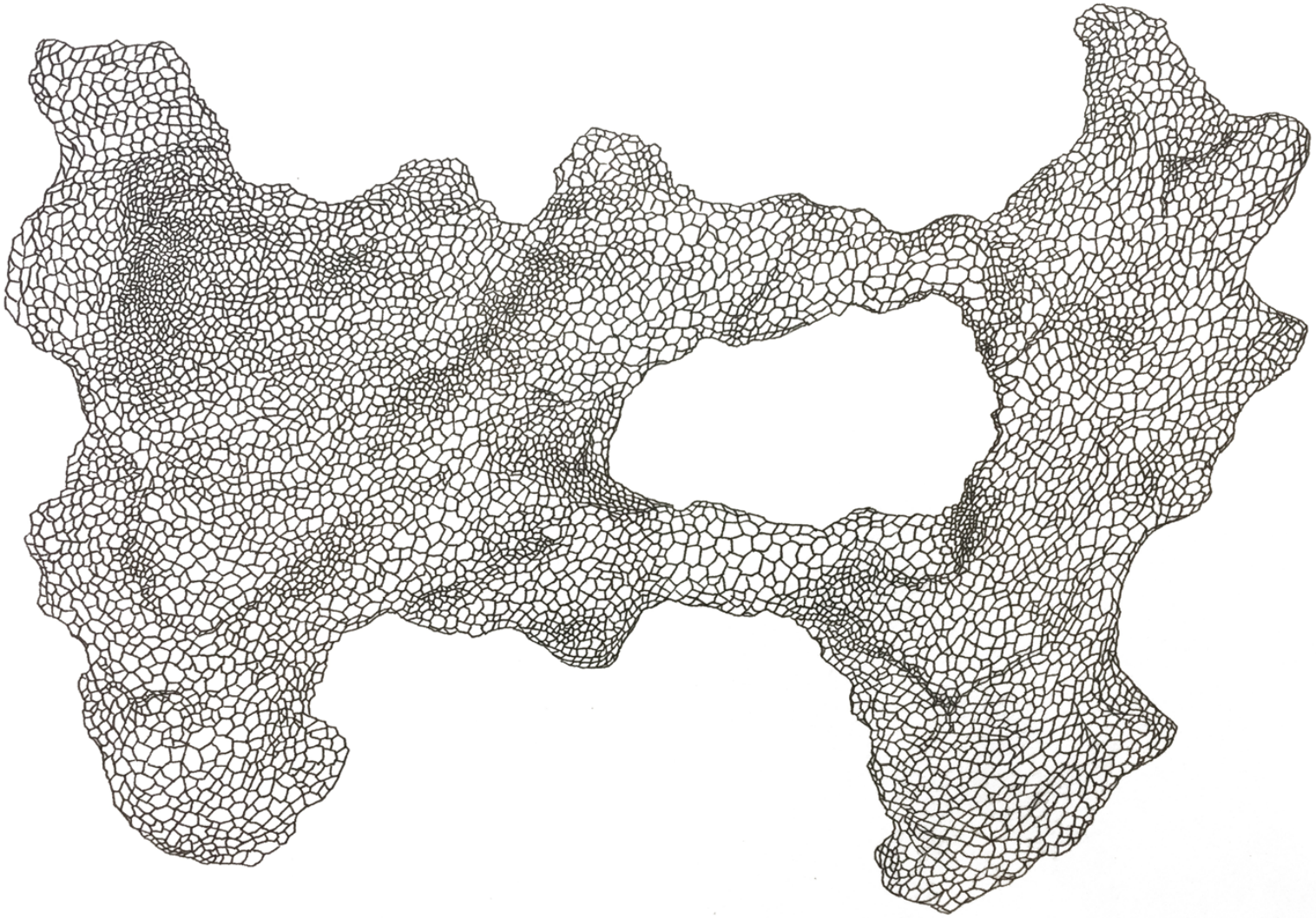

Figure 1.1. Hand drawing (pen and paper)

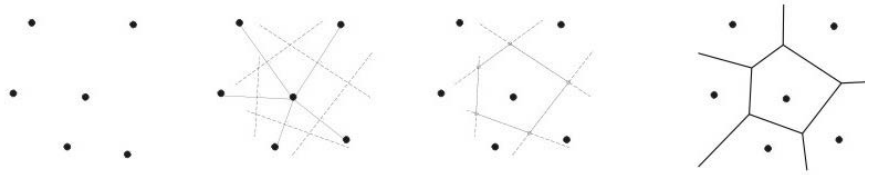

Figure 1.2. Procedure for constructing a Voronoi dia-

The first part of this portfolio consists of a sample of my own hand drawings. This hand drawing is based on a computational geometric construction called a Voronoi diagram. A Voronoi diagram is a partitioning of the plane into regions such that each region contains exactly one generating point and any point in a region is closer to its generating point than to any other. Each enclosed region is called a Voronoi cell. The procedure for Voronoi diagrams are commonly employed in architectual design and space planning. Perhaps the most iconic example in architecture is the Water Cube (the Bejieng National Acquatics Center). The Water Cube is based on the well known Weaire-Phelan structure, which is made up of two types of Voronoi cells of equal volume. Structures obtained from Voronoi cells will be further investigated in Chapter 2 of the portfolio.