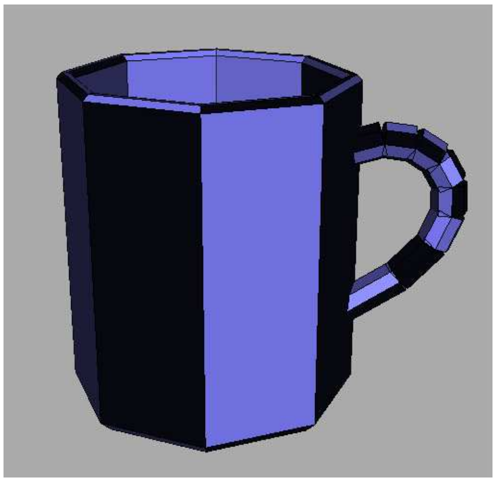
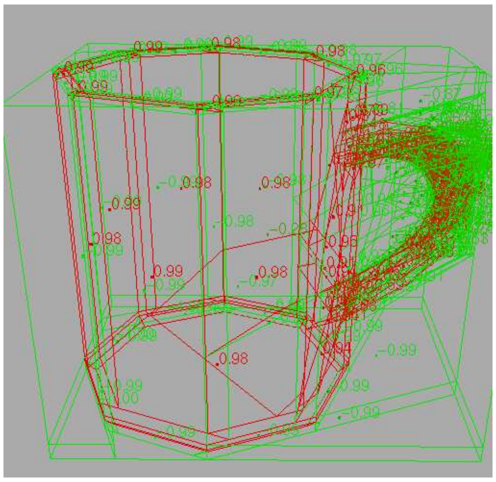
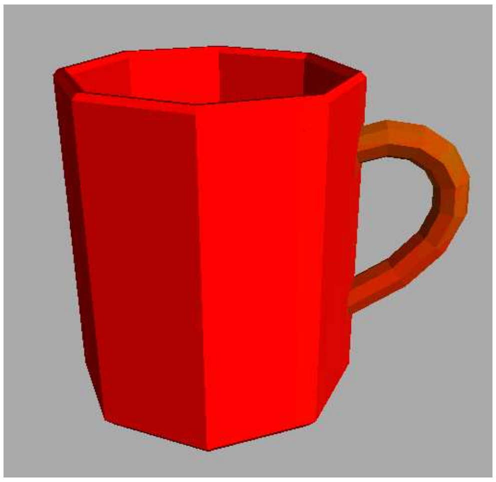


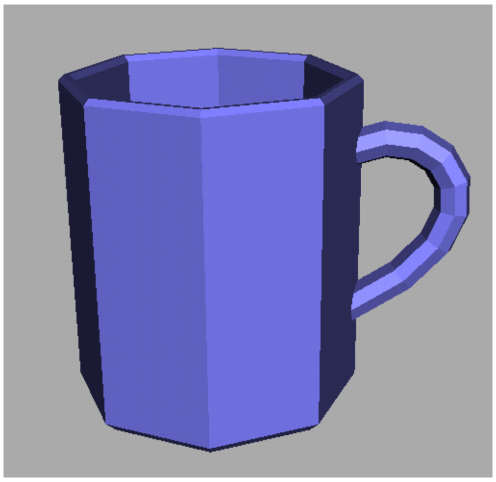
(a) Input model with inconsistencies



(b) Subdivision cells labelled and outlined with colours based on their solidities

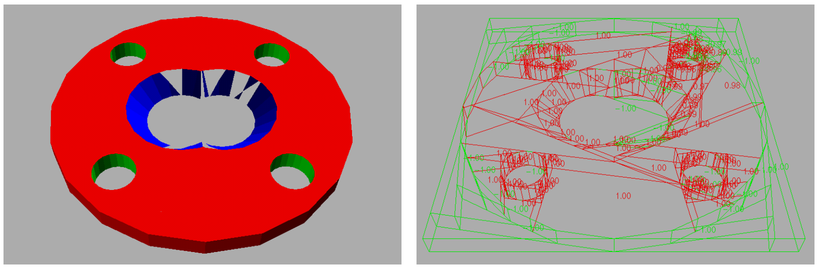


(c) Solid cells: the boundaries of all solid cells are drawn with triangles oriented towards the model's exterior



(d) Output model is a manifold surface.

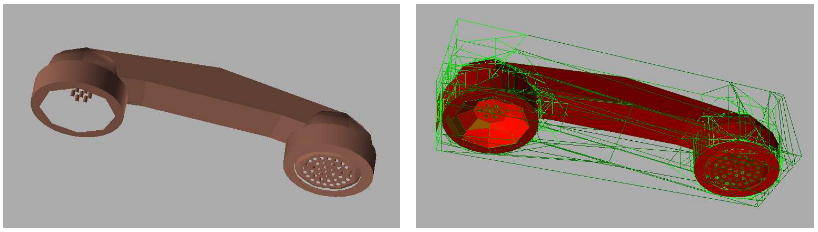
Figure 2.4: Reconstructing the solid model of a cup.



(a) Input model

(b) Cell solidities indicated by numerical values

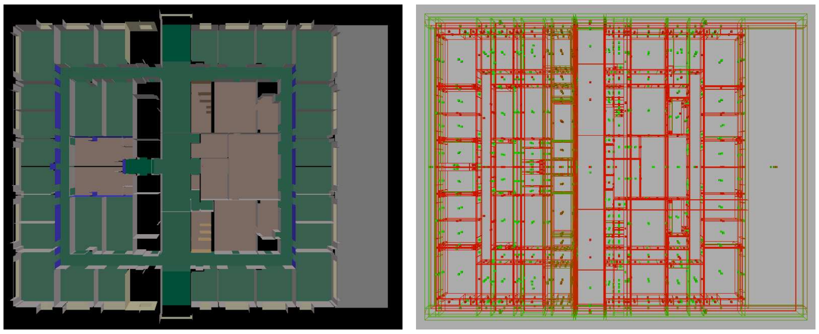
Figure 2.5: CAD/CAM: Automobile clutch with wrongly-oriented triangles (in the middle) and missing triangles (in the upper-right circular hole).



(a) Input model

(b) Opaque links drawn between solid and free cells.

Figure 2.6: Visualization: Telephone headset containing wrongly-oriented triangles (in the mouth and ear pieces) and intersecting triangles (along the handle).



(a) Input model

(b) Cell solidities indicated by coloured dots

Figure 2.7: Architectural CAD: One floor of Soda Hall with numerous topological inconsistencies and other modelling errors.