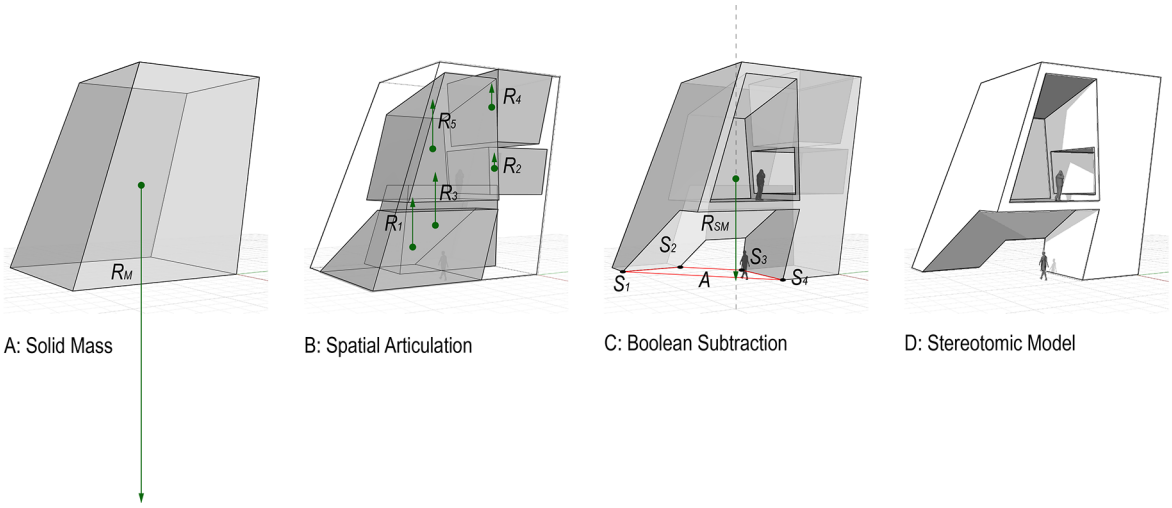
Design Exploration: Zürich Film Festival in Schlieren

Task 2: Spatial and Structural Articulation



A: Solid Mass | B: Spatial Articulation | C: Boolean Subtraction | D: Stereotomic Model

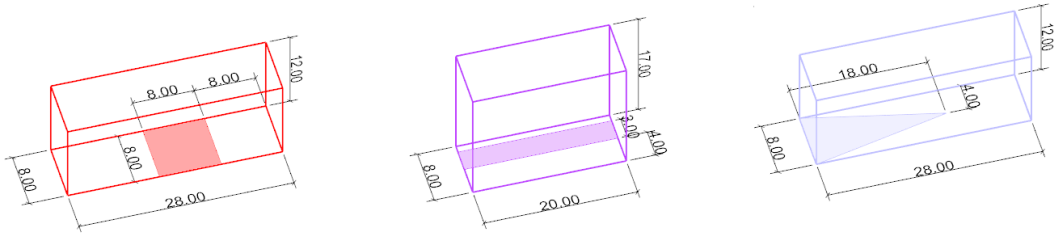
Articulation of Spatial Voids and Evaluation of Static Stability

The next step of the process is related to the articulation and adaptation of the spatial voids within the solid mass (Fig. A). This consists in the definition of a topology that enables to create relationships between the individual spatial voids, such as their mutual interaction and their connectivity through the internal circulation of the building (Fig. B). Through the Boolean subtraction of the spatial voids from the initial solid mass (Fig. C), the stereotomic model is obtained in the form of a three-dimensional poché (Fig. D).

Given a support area and assuming that the supports can just take compression forces, in order to fulfill the global static stability the line of action of the self-weight of the stereotomic model must intersect the support area (Fig. C). In fact, in case this condition is not met the stereotomic model would be subjected to static overturn. To avoid this, the spatial voids have to be re-arranged until the condition is met.

1. Based on the spatial voids defined in Task 1, use the digital tools to design three stereotomic models representing different concepts of spatial and structural articulation. Use the assigned bounding box and support area (Input 2: Bounding Box and Support Area). The solid mass should not exceed 1800 m^3 and should be contained within the given bounding box.
2. Choose one of the previously designed stereotomic models and build a physical model of it with foam (scale 1:50).
3. Represent in one to three A3 sheets your concept regarding the articulation of the spatial voids. Demonstrate that your proposal fulfills the condition for the static stability. Use in both cases axonometric diagrams. Please include some pictures of the physical model.

Input 2: Bounding Box and Support Area



Bounding Box 1 | **Bounding Box 2** | **Bounding Box 3**