

# Procedural Sections

An introduction to procedural modelling and sections

## >> Workshop 10

>> Design Tools and Skills 1

>> Semester 1 - August-December 2024

>> Instructor:  
Deniz Guvendi

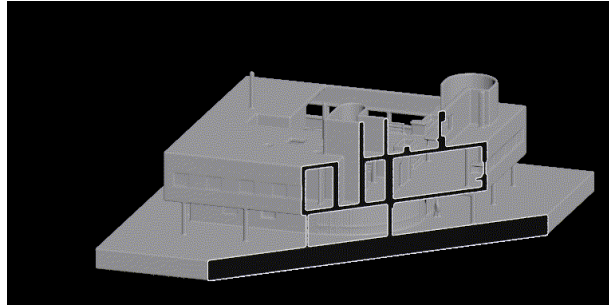
>> Coordinator:  
Tom Jenkins

>> Faculty Team:  
Bahnhof (Dream) Chittmittrapap, Deniz Guvendi, Hayden Minick, Hseng Tai Lintner, Joris Putteneers, Stefan Svedberg, Warisara (Nice) Sudswong

17:30 - 18:00 - Attendance Check (Submission on discord)

3.3. In-Class Task | (in Class)

3.4. Homework



## Task A.1: SLICER

Import models (.obj, .fbx, .glb, etc.).  
Using a `for each` loop, create a procedural clipping setup.

**In class** Deliver a screenshot of your procedure on Discord between 17:30 and 18:00 (please note that screenshots taken during the early stages of setup will incur a point deduction).

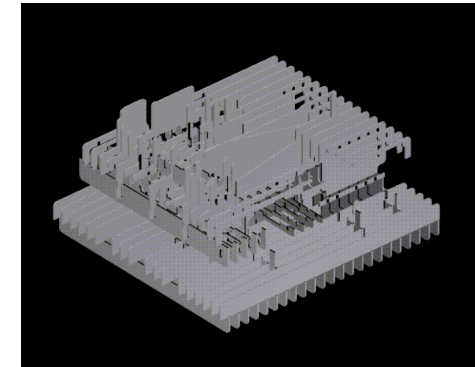
**On Tuesday, 15th**, select and submit one of the iterations (still image/series of drawings in .png, .jpeg, .gif, or .mp4 format).

**File Naming:**  
DTS Code\_WK10\_01\_A1.mp4(.gif .jpg .png)

## Task A.2: WAFFLE

Utilizing boolean operations and loops, create a waffle structure setup.  
Tuesday 15th select and submit one of the iterations with a **turntable** animation in .mp4 format.

**File Naming:**  
DTS Code\_WK10\_01\_A2.mp4

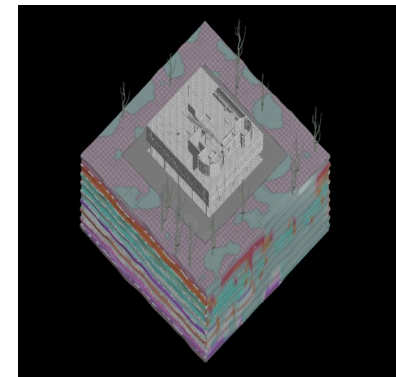


## Task B.1: SECTION

Start thinking about the scale and bring elements that can indicate the scale to your drawings. Improve the visualization by using colors and defining a hierarchy between certain things in the section drawing.

Tuesday 15th pick and deliver one of the iterations, that contains an indicator of the scale (still image/series of drawings(.png .jpeg .gif)/(.mp4)

**File Naming:**  
DTS Code\_WK10\_01\_B1.mp4(.gif .jpg .png)



## 1. Pedagogical Activities

In **Workshop 10** of **DTS1**, you will learn about modelling, cutting, sectioning, and manipulating 3D models procedurally. The goal is to gain fluency in data-driven design and procedural workflows.

## 2. Objectives

You will continue learning Houdini basics, and geometry management to have an understanding of how computational design can enhance architectural representation, design exploration and fabrication.

## 3. Procedures

3.1. Location  
Chulapat 14, Floor 16 (Presentation space)  
Chulapat 14, Floor 13 (Studio space)

3.2. Agenda  
13:00 - 13:15 - Attendance Check (Aj.Tom)  
13:15 - 13:45 - Workshop Introduction (Aj. Deniz)  
13:45 - 14:00 - Set up  
14:00 - 16:30 - Task A-1  
16:30 - 17:30 - Task A-2

## Task B.2\*: COMPOSITION

(1) Experiment with various geometry types. Select and submit one of the iterations (still image/series of drawings in .png, .jpeg, .gif, or .mp4 format).

(2) Create a composition using different drawing sets from your selected iteration. Use After Effects or Photoshop to compile videos from sequential images, crop, and organize the overall composition (resolution: 1080px x 1080px; visual format is free).

### File Naming:

DTS Code\_WK10\_01\_B2.mp4(.gif .jpg .png)  
DTS Code\_WK10\_05\_B2\_Composition.mp4 (if any)  
DTS Code\_WK10\_05\_B2\_Composition2.mp4 (if any)

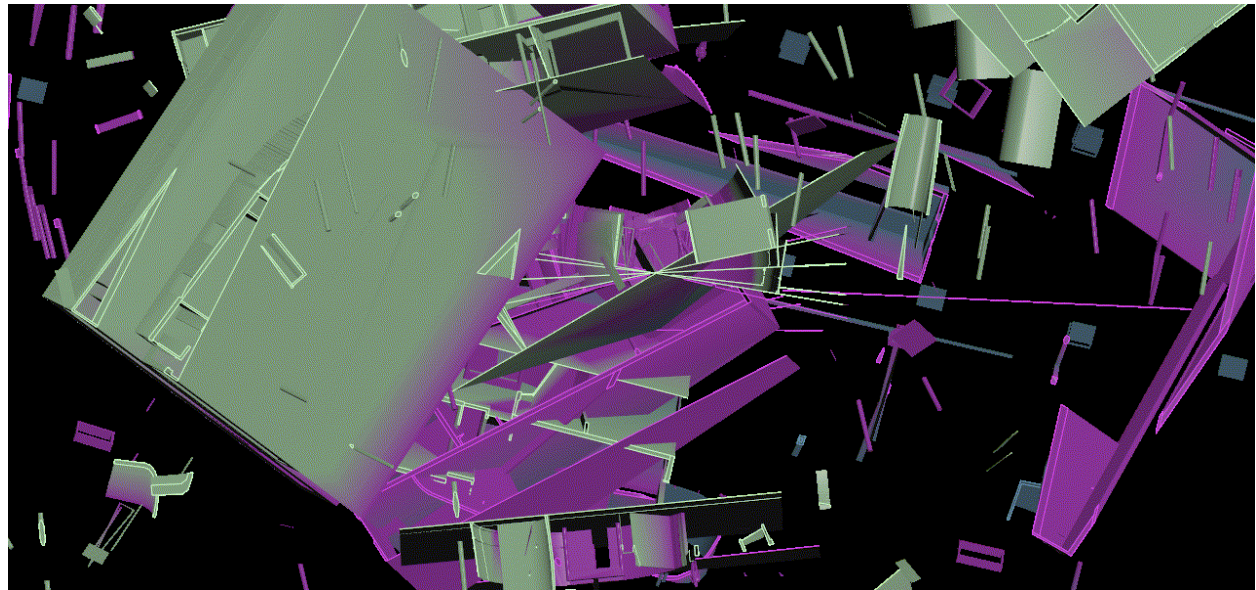
## Required Materials

### Hardware

Laptop  
Laptop charger  
Computer mouse with middle wheel <- very important!  
Headphones  
Extension cord (optional but highly recommended)

### Software

SideFX Houdini (Apprentice) version: 20.5  
SideFX Labs and Packages (Production Build 20.5)  
Rhino 7 or 8  
Adobe After Effects / Photoshop (optional)



## 4. Submissions

Material to be submitted should be complete and in accordance with the guidelines presented in class.

### Task A.1

(@class) Deliver a screenshot of your procedure on Discord between 17.30-18.00 (If the screenshot is from the early stages of the setup there will a point deduction)

(1)(@home) Tuesday 15th pick and deliver one of the iterations (still image/series of drawings(.png .jpeg .gif)/(.mp4)

Tuesday 15th, 8pm. (see submission link and form)

### Task A.2

Tuesday 15th, 8pm. (see submission link and form)  
(2) Pick and deliver one of the iterations with a turn table animation. (.mp4)

Render requirements: 200 frames [flipbook or OpenGL]  
Video requirements: [720x720 pixels] [2 frames per second]

## Task B.1

Tuesday 15th, 8pm. (see submission link and form)

(3) Tuesday 15th pick and deliver one of the iterations, that contains an indicator of the scale (still image/series of drawings(.png .jpeg .gif)/(.mp4)

## Task B.2

Tuesday 15th, 8pm. (see submission link and form)

(4) Experiment with different geometry types, pick and deliver one of the iterations (still image/series of drawings(.png .jpeg .gif)/(.mp4)

(5) Bring different drawing sets from the selected iteration to a composition. Use After Effects or Photoshop to make videos from sequential images, to crop, and to organize the overall composition.

1080px-1080px

(Except for the resolution the format is free)

**File Naming:**

DTS Code\_WK10\_01\_A1.mp4 (.gif .jpg .png)  
 DTS Code\_WK10\_02\_A2.mp4  
 DTS Code\_WK10\_03\_B1.mp4 (.gif .jpg .png)  
 DTS Code\_WK10\_04\_B2.mp4 (.gif .jpg .png)  
 DTS Code\_WK10\_05\_B2\_Composition.mp4 (if any)  
 DTS Code\_WK10\_05\_B2\_Composition2.mp4 (if any)

**Submission Form Link:**

**>>CLICK HERE<<**

Submit the digital copy of your work via this  
**google form** by Tuesday 15th, 8pm.

**4. Grading Criteria**

All submissions are present and performed according  
 to the instructions defined by the brief procedure.

**Completion**

Timely submission in good condition .....  
 40%

**Quality**

Conceptual clarity and craftsmanship .....  
 60%

The evaluation of craft and effort will focus on the  
 effective use of Houdini's procedural tools, with an  
 emphasis on personal artistic expression and  
 experimentation. While a basic understanding of  
 technical skills is essential, the goal is to push  
 the boundaries of architectural representation  
 through individual interpretations. Deliverables  
 should demonstrate creativity in both static and  
 animated outputs.

**Keywords**

This is a list of words that will be used in  
 class and you should familiarise with:

*procedural, computational, node, attribute,  
 network, data, data-driven, animating,  
 speculating, clipping, scale, boolean,  
 overlay, composition, hierarchy*

**Supporting Material**

Some platforms you can download 3d models:

[Sketchup Warehouse](#) [Sketchfab](#) [Free3d](#)