The generic exhibition platform

Guidebook

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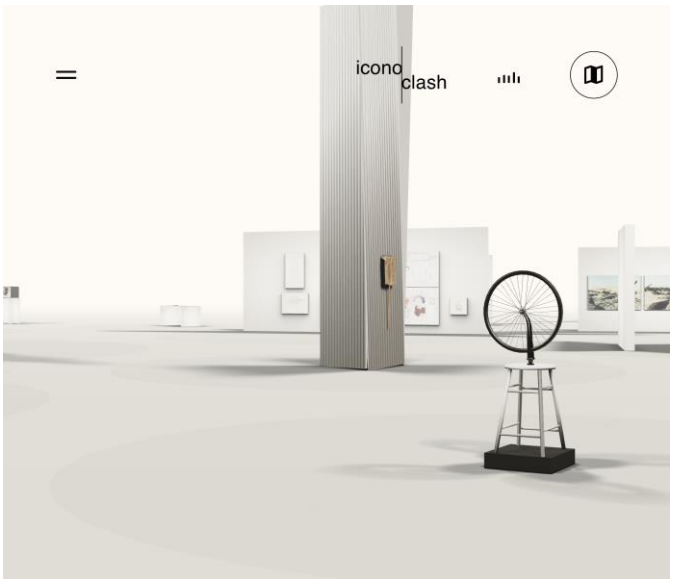
Table of contents

1. Introduction

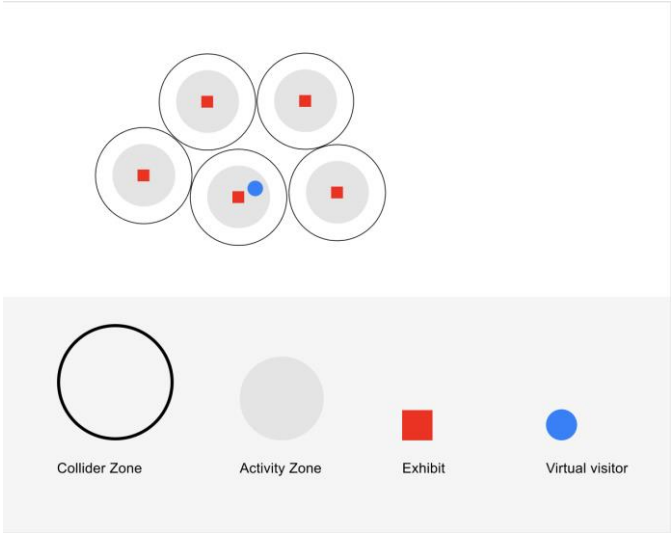
This document explains the core concept of the generic exhibition platform, which emerged in the framework of the practice-based research project Beyond Matter (2019-2023). In addition, it should provide operating instructions on how to prepare and upload (3D) assets into the scene of the **3D exhibition model**.

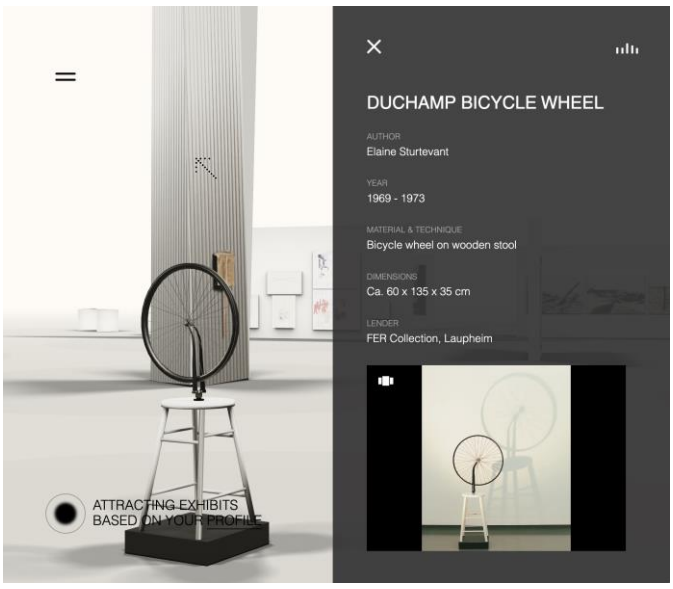
2. Interaction concept

The technical spatial concept consists of two central elements, the Collider Zone and the Activity Zone.



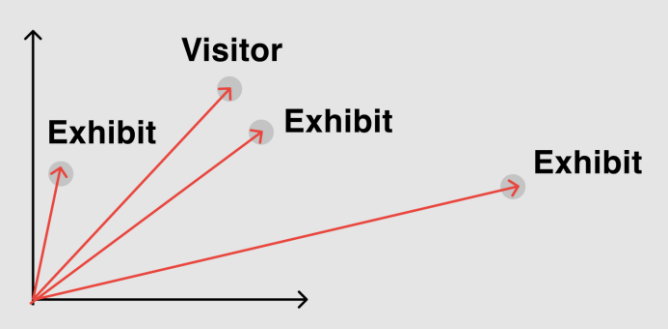
The **Collider Zone** defines the distance between the elements and the neutral space where no interaction takes place (profiling, reshuffling, availability of exhibit information).





The **Activity Zone** functions as trigger for the interactions (profiling, reshuffling, availability of exhibit information)

3. Recommender system and gravity-based reshuffling system

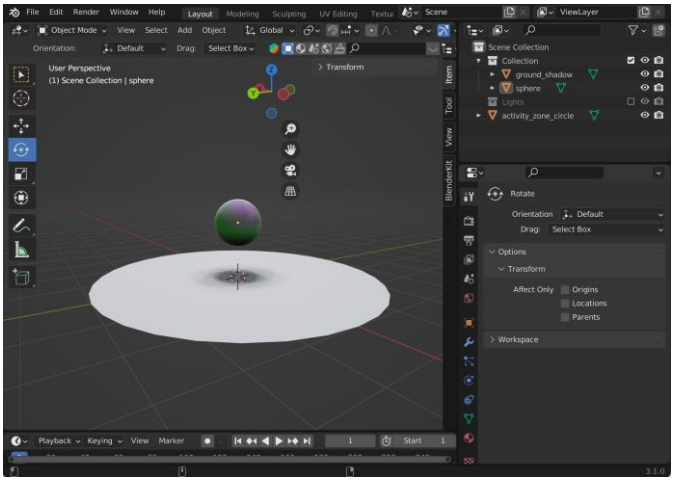
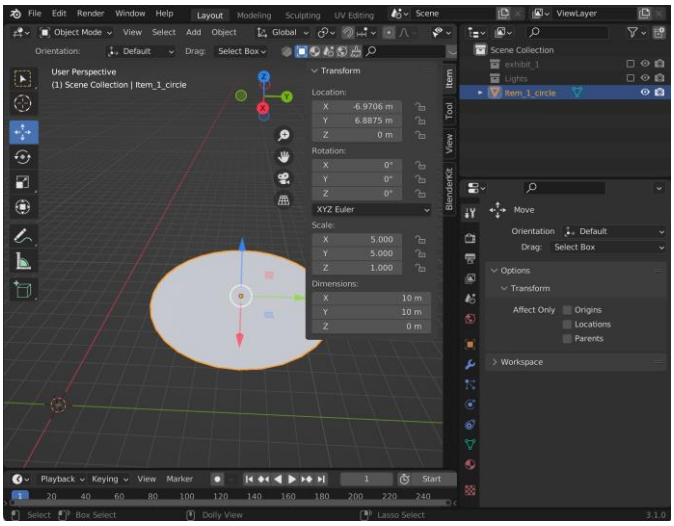
	The profile of an **exhibit** is described by values of predefined tags.
	The profile of the **visitor** of the 3D exhibition is defined by the visitor observing certain exhibits over a certain period of time. The more time a visitor spends in the activity zone of an exhibit, the more their profile is influenced by that of the exhibit.
	The similarity between all exhibits and the visitor is calculated constantly. The output is a hierarchical listing of similar exhibits, with the **most recommended exhibit** at the top. On the basis of this, the profile of the visitor attracts similar exhibits.
	This leads to the so-called **gravity-based reshuffling system**. The exhibition continuously reshuffles in such a way that similar objects are in proximity to the visitor due to a higher force of attraction.

#ID (exhibit)	sweet	bitter	sour	salty	hot
#1	0	8	0	6	3
#2	1	0	0	5	0
#...	...	...	...	...	...

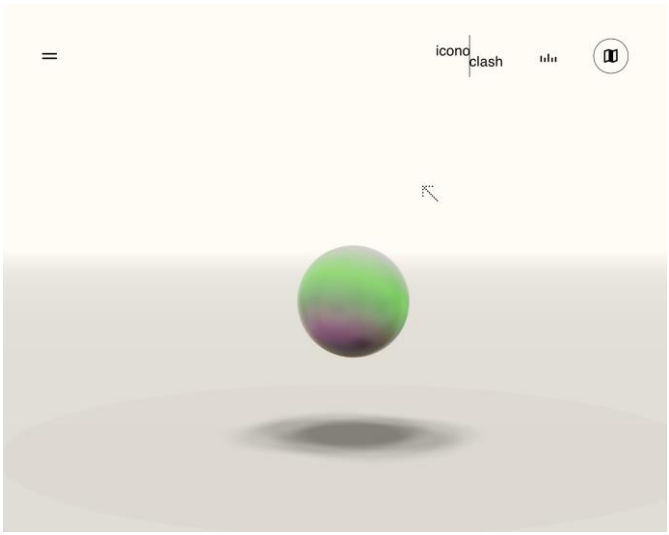
#ID (visitor)	sweet	bitter	sour	salty	hot
#1	0	2.4	0	4	0

4. Preparing 3D Assets for upload into the generic exhibition platform

4.1. Positioning

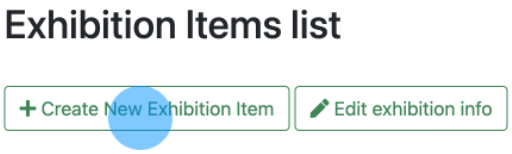
	**How to set up an assembly of exhibits** ● Place a circle in the world origin, the pivot point should be in the center as well. ● The circle should be named **“activity_zone_circle”** to be detected as an interaction trigger. ● Place the exhibits relative to the circle. ● Export the arrangement as GLB file (without lights)
	**How to position the assembly in the 3D Scene** ● Place another circle in the position where the arrangement should be located in the exhibition. ● Call it **“item_x_circle”** to define it as Collider Zone. In this example it is “item_1_circle”. ● Give the circle your wanted rotation.

4.2. Light and complexity of 3D models

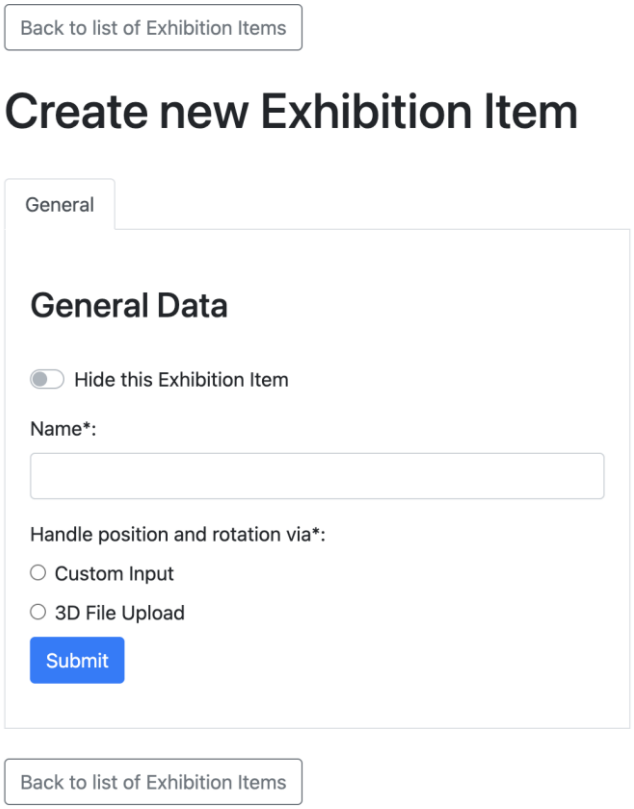


- There is no directional light in the scene for performance reasons. We recommend using baked textures for good results.
- As there is no directional light there is also no floor shadow. We recommend using baked floor shadows for good results.
- For performance reasons the amount of polygons and the size of the textures should be adequate.

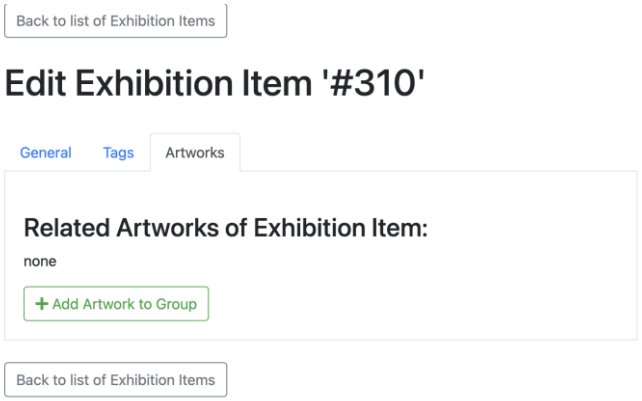
5. Uploading 3D assets via CMS



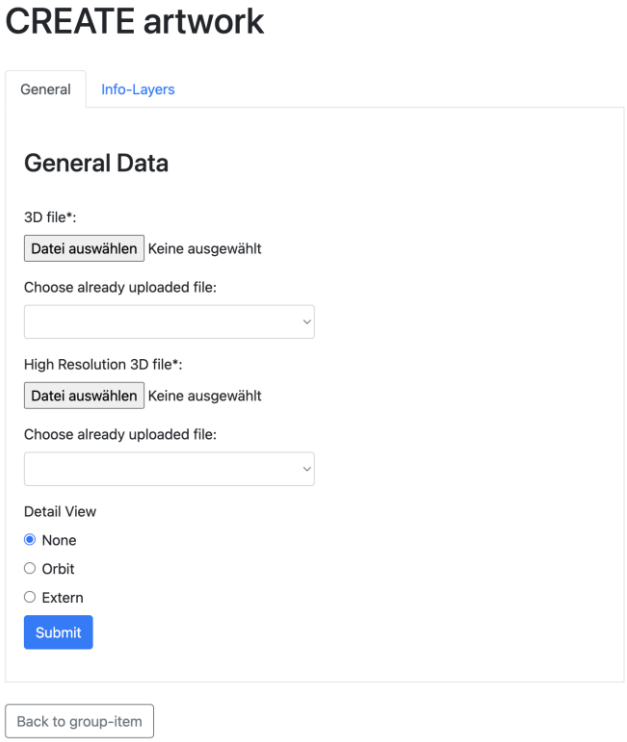
Select “Create New Exhibition Item” in the CMS to create a new assembly of exhibits.



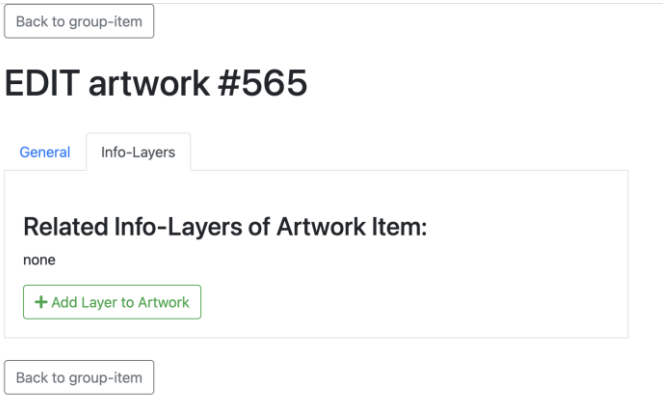
- Name the exhibition item
- Select “3D File Upload” to define the position. Use the file “item_x_circle” explained in 4.1..
- By selecting “Hide this Exhibition Item” the item will not be visible in the scene. It will be visible under the parameter ” …/?preview=1”.
- Select “Submit” to create the item



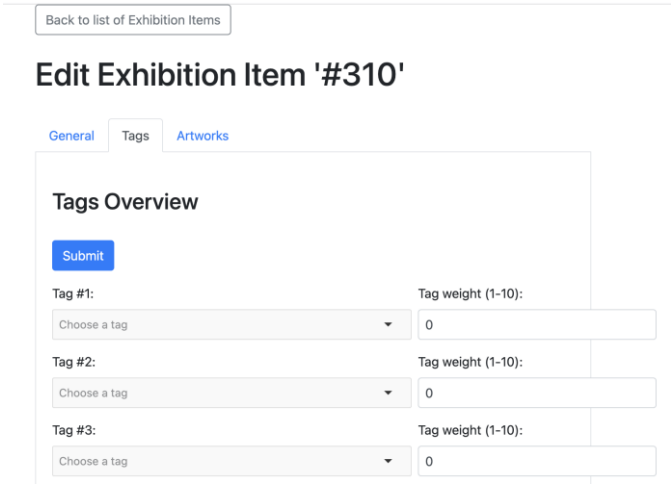
- Select “Add Artwork to Group” to add a group of exhibits.



- Select “Choose file” at “3D file” to upload an assembly in the GLB format. 4.1 it describes how to prepare it.
- There is the possibility to add the same assembly in high resolution. By selecting“Choose file” at “High Resolution 3D file” and activate “Orbit” under “Detail View”, the action “artwork single view” will be indicated in the frontend. By choosing this action the high resolution file with orbit controls can be viewed.

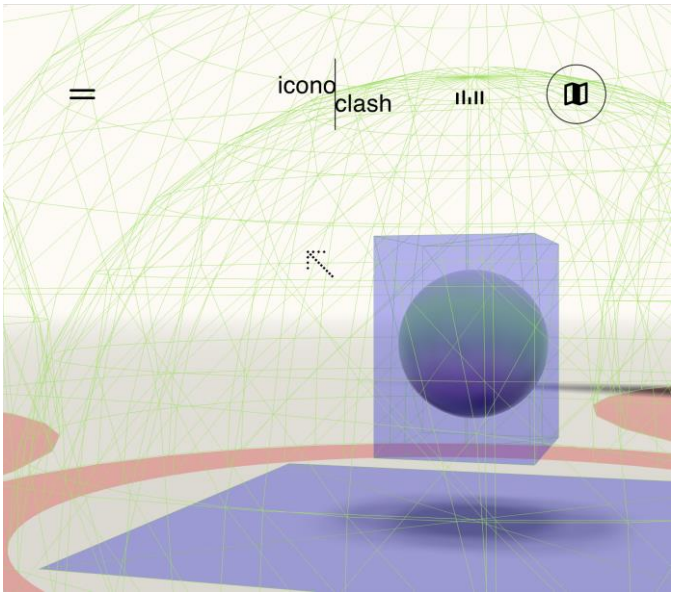


- Select “Add Layer to Artwork” to create an Info Layer for the artwork. Text, images and Vimeo links can be added here.



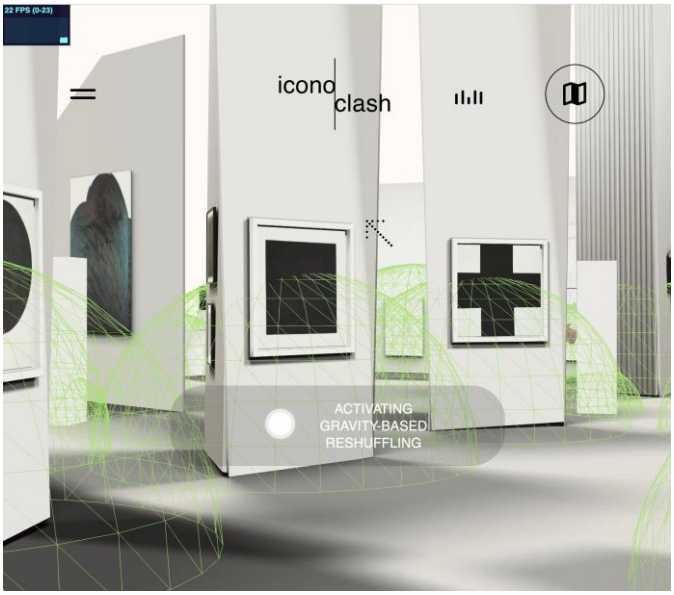
- Under “Tags”, the profile of the exhibition item can be defined by awarding a value between 0-10 to the tags (they are hardcoded in the backend).

6. Existing URL parameters



- With the parameter “.../?physic=1” you can visualize the physics, like for example collider boxes and trigger.

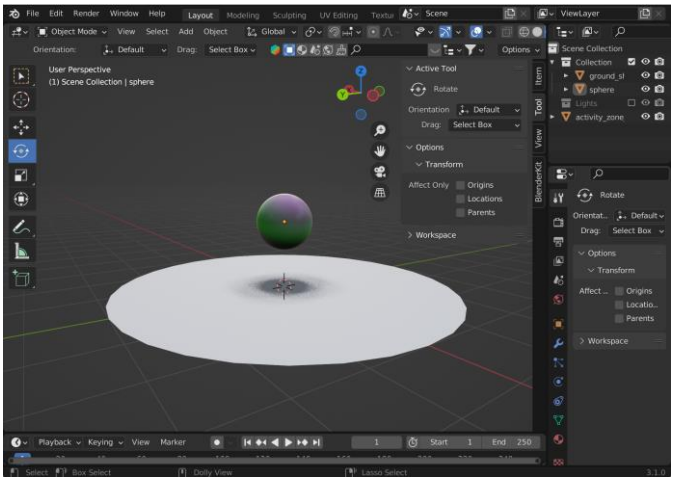
- With the parameter “.../?gui=1” you can play around with the colours and the gravity-based reshuffling settings for example.



- With the parameter ".../?stats=1" you can check the performance of the scene. 60 fps would be ideal.

- With the parameter ".../?preview=1" you can view items that are set to"Hide this exhibition item" in the CMS.

7. Special naming convention



By giving the 3D assets certain names, you can reach certain effects in the exhibition scene. Objects with the following name, will show the following behaviour:

- "_collider": The object will be interpreted as invisible collider box. No collider will be generated automatically. Please note: If there is no object with the name "collider", collider boxes will be generated automatically.
- "still_1", "still_2", "still_3": This object will be shown in a loop.
- "_appear": These objects will only be visible when the reshuffling starts.