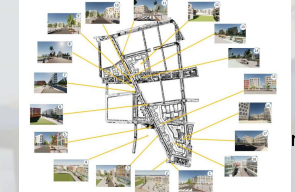
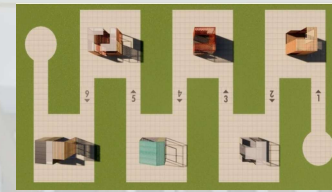
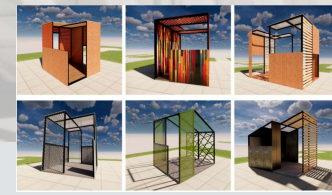


Development of the digital model of LaVallée for architectural ambiances studies

1

Context of the project

Studies on the perception of architectural ambiances using immersive virtual reality (IVR) tools. Extending the protocol of a previous study that immersed users in small architectural spaces, by using a more larger scaled and more photo-realistic virtual environment, the model of LaVallée district provided by Eiffage.



LaVallée
500m x
400m
for 6200
residents in
2024



2021

The Drawing and Perception of Architectural Spaces through Immersive Virtual Reality

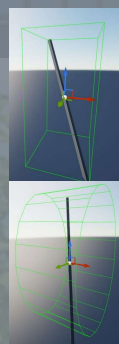
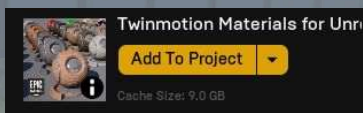
Hugo C. Gómez-Tone ^{1,*}, John Bustamante Escapa ¹, Paola Bustamante Escapa ¹ and Jorge Martín-Gutiérrez ²

3

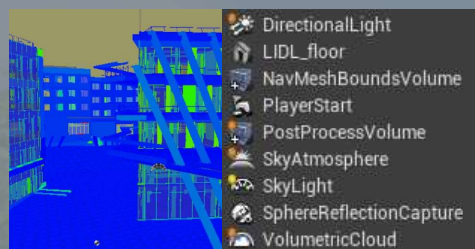
Works

For the research study : development of Unreal projects with more photo-realistic scenes of LaVallee. improvement of :

- Materials : plugins assets, DataTables, uv mapping



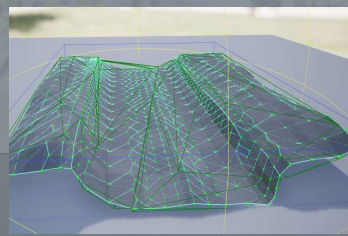
- Lighting : light objects, light map of meshes, reflections, MeshDistanceField



- Trees : plugin assets, mesh equivalences, LODs



- Foliages : plugin assets, procedural spawning (including collision settings)



2

Objectives of the internship

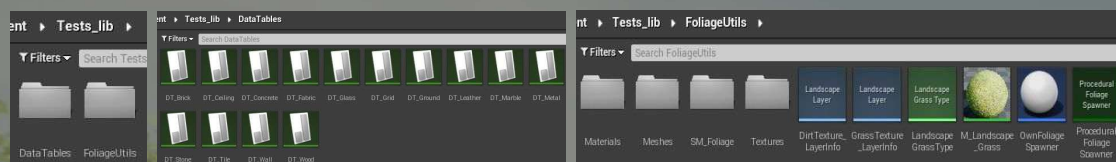
Prepare tools for the thesis of Elena Diaz at ULL starting in 2022, by developing the VR tour and increasing the photo-realism of LaVallee 3D model, and by integrating micro-mobilities (walkers, cyclists and cars).

Develop academic tools common to the collaborators universities of the project, that would improve next-generation architectural design processes based on immersion and BIM, by automating the process in Unreal Engine, using unreal python scripting, and producing tutorials of the created tools (Tutorials on the workflows, the assets and the scripts that automatize processes).



4

Assets for automation of realistic scene making-process



Assets for automation of Micromobilities network making-process



Tutorials on the workflows, the Unreal assets, and Unreal Python Scripting for our specific purposes

