GIS & BIM
Enzyme APD
We are enzyme.

We are a BIM Architecture Design Office & Research Lab
we use BIM for Design & Support companies in the creation and implementation of smarter workflows.
Digital Tools for Architecture & Master Planning

- BIM
- Computational Tools
- Scripting, Programming
- CGI, VR, AR
- Digital Fabrication & Construction
- 3D Printing, Laser Cut
- Point Cloud Scan
- GIS
How do we connect BIM + GIS?
Why connect BIM + GIS?

1. Line of Sight
2. Exposure to Noise
3. Development Planning
4. Crowd Simulation
5. Solar Exposure
6. City Engine
7. Pedestrian Behavior
8. Shadow Analysis
9. Parking Availability
10. Tangible Landscape
11. Geodesign
12. Propagation of Noise in Urban Environments
Source of GIS - Where to start?
Comparison

HONG KONG
Comparison

MADRID
Comparison

NEW YORK
GIS Data Source - Considerations

How Reliable is the Data Source?
How Precise It is?
Compare & Evaluate
Open Data - Public Access?
Pay for the Data - More Reliable?
GIS Data Source - Considerations

What Can We Do with GIS Data?
Convert GIS Data into BIM Environment?
OpenStreetMap (OSM) is a collaborative project to create a free editable map of the world. Rather than the map itself, the data generated by the project is considered its primary output.

Capability: this is an open source which is users can interact and contribute the data.
OSM & USGS > Grasshopper
OSM & USGS > Grasshopper

1. Load the osm file

2. Load the tiff file

3. Connect to location tool

4. Connect to topographic generator
OSM & USGS > Grasshopper
OSM & USGS > Grasshopper
OSM & USGS > Grasshopper > 2D
OSM & USGS > Grasshopper > 2D & 3D

- MAKING THE TEXT: NUMBER OF LEVELS ON 2D PLAN
- EXPORT 2D BUILDING PLAN ON THE GROUND
- EXPORT 3D BUILDING & COLOR ON 3D VIEWPORT

INPUT DATA FROM ELK:
- OSM Point Data
- Building Levels
- Building Plan
- Building 3D
- Building Color

enzyme.
The Information System
MOVE SLIDE TO CHOOSE THE TYPES OF BUILDING, THEN IT AUTOMATICALLY GENERATE A RELATIVE LEGEND
OSM & USGS - Grasshopper - BIM

AUTOMATED 3D URBAN FABRIC INTO BIM PLATFORM
BIM Enhancing Project Site Analysis

FILTER DATA INSIDE ARCHICAD
BIM Enhancing Project Site Analysis
Project Site Analysis

BETTER UNDERSTANDING OF SITE GEOMETRY
Conclusions…

1. GIS Data accessible - Reliability and Accuracy?
2. Automate Urban Environments & Landscape Context
3. Analysis of Urban Fabric for different Purposes
4. Site Studies for Project Development
5. BIM & GIS Feeding the Development of Digital Twins
Conclusions…

GIS Can Boost AEC Industry
Urban Design
Smart Cities
Architecture
Natural Environment
Thank you.

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