



# XXVII FIG CONGRESS

11-15 SEPTEMBER 2022  
Warsaw, Poland

Volunteering  
for the future –  
Geospatial excellence  
for a better living

## 3D City Models as a 3D Cadastral Layer: The Case of the TKGM Model

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## Land Registry and Cadastre in TURKIYE

### Property Data

- Owner Information
- Ownership of real estate and related rights
- Property Boundaries

### Usage Data

- Data on registered buildings subject to condominium servitude and condominium ownership.

### Value Data

- Data on the purchase and sale values of immovables and aggregate valuation data.





## 3D Cadastre Purpose



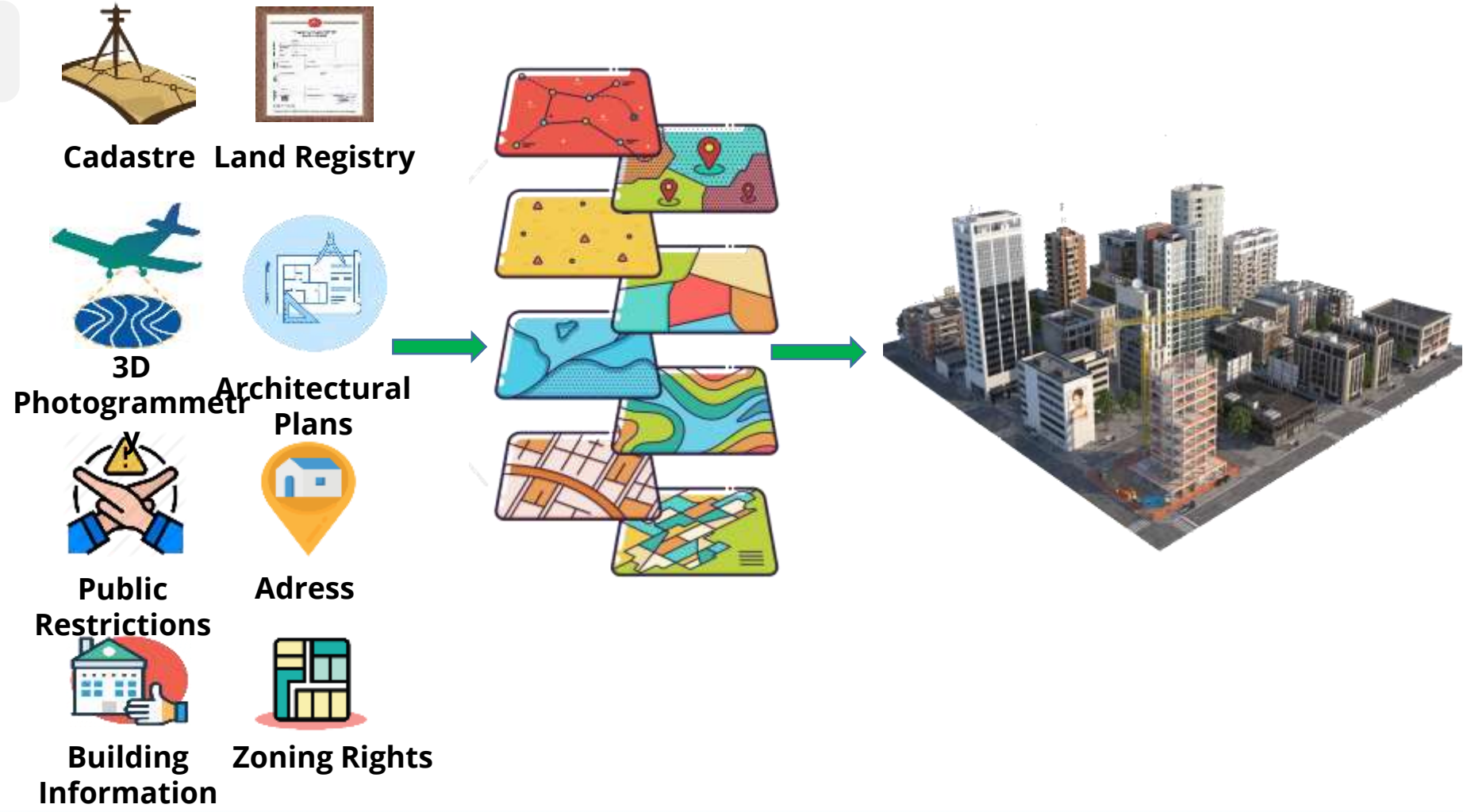
## Property – Smart City

3D cadastre provides,

- The 3D spatial data required for studies carried out in different areas other than cadastre, such as urban planning, land modeling, engineering projects, tax collection, disaster management, protection of cultural and natural assets, environmental protection, and makes the theme of smart cities very easy.

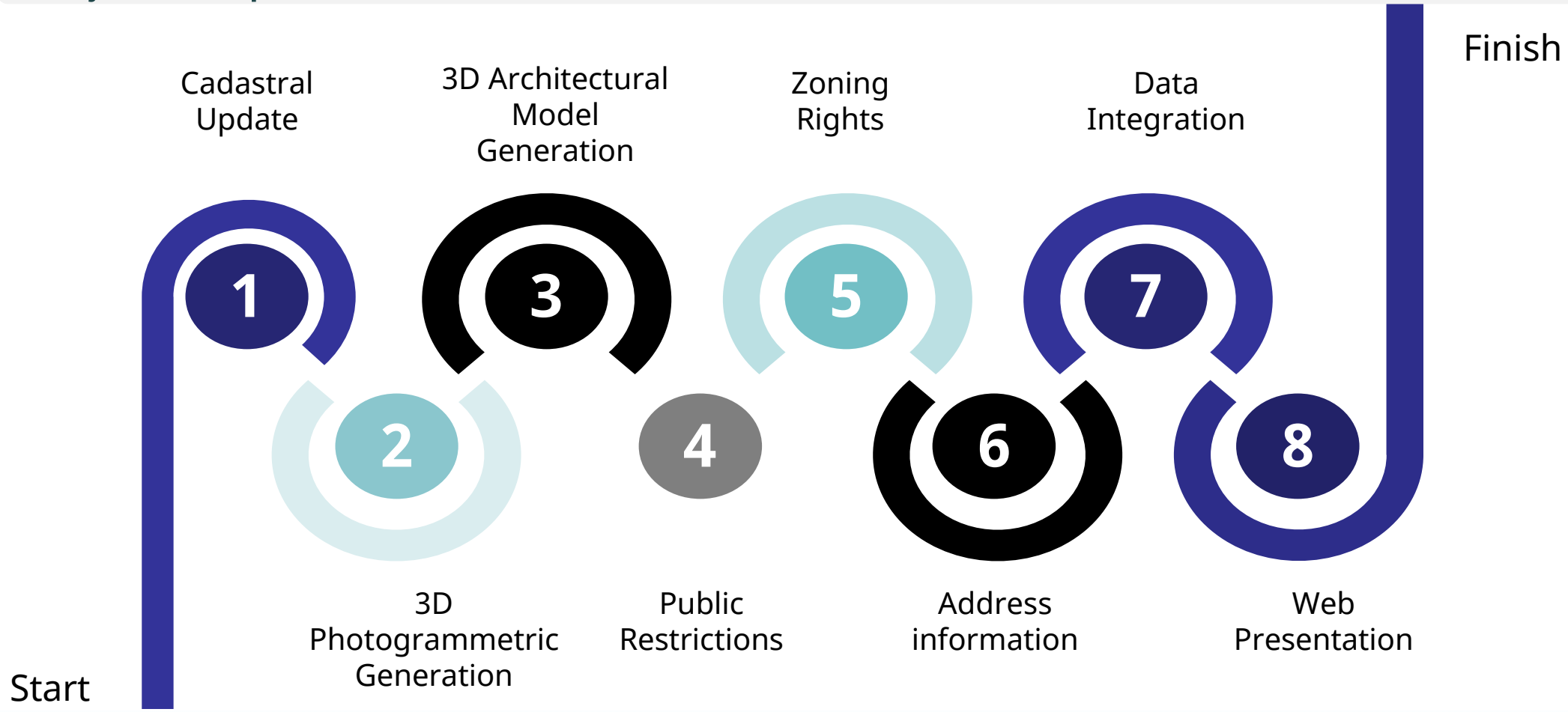


## Project Components



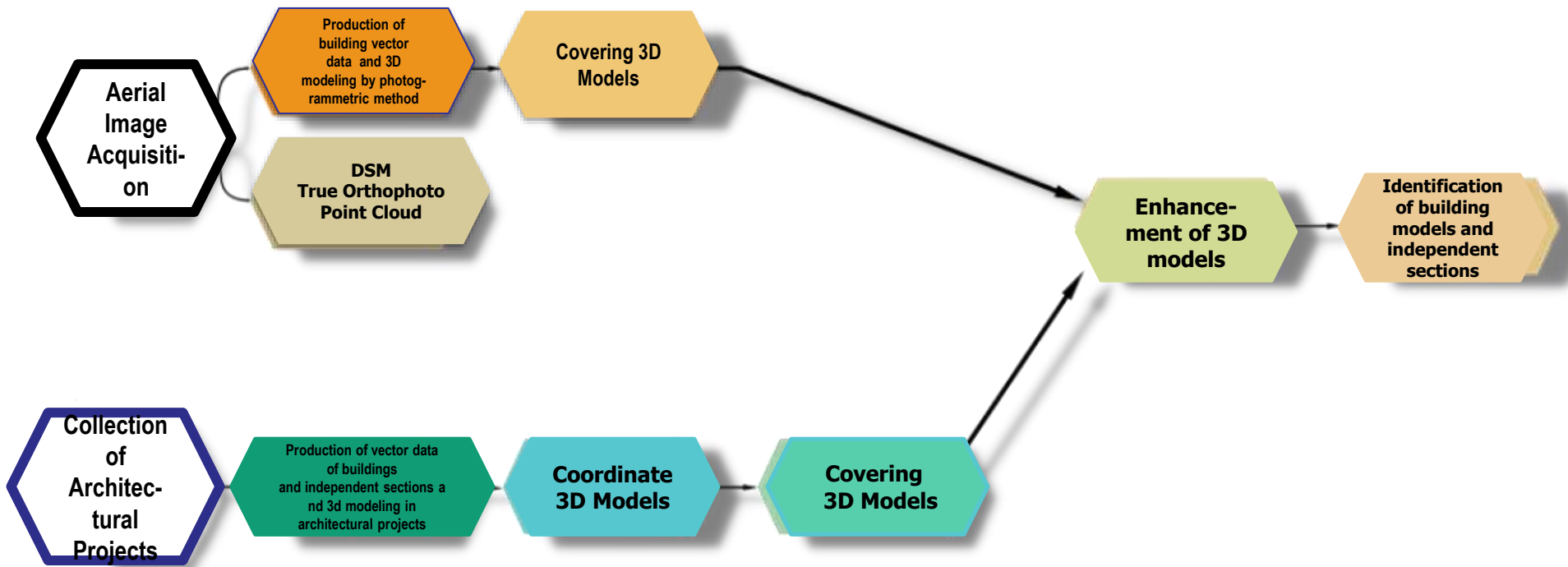


## Project Steps



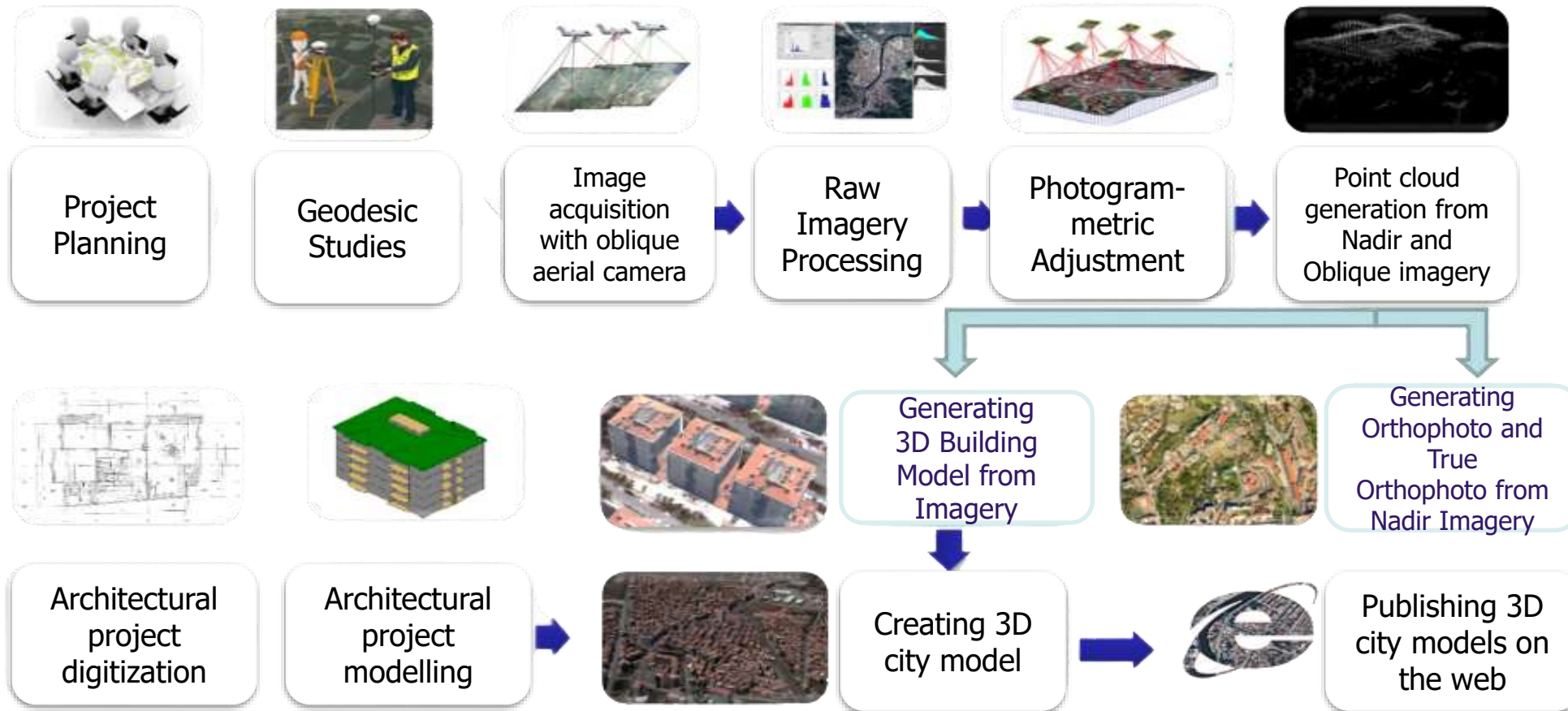
## 3D Cadastre Workflow

Production of 3D City Models via Photogrammetric approach



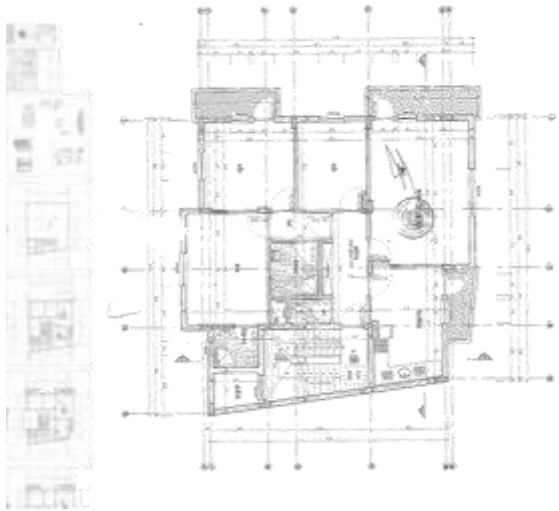
Production of 3D Building Models from Architectural Projects

## 3D Cadastre Production Stages





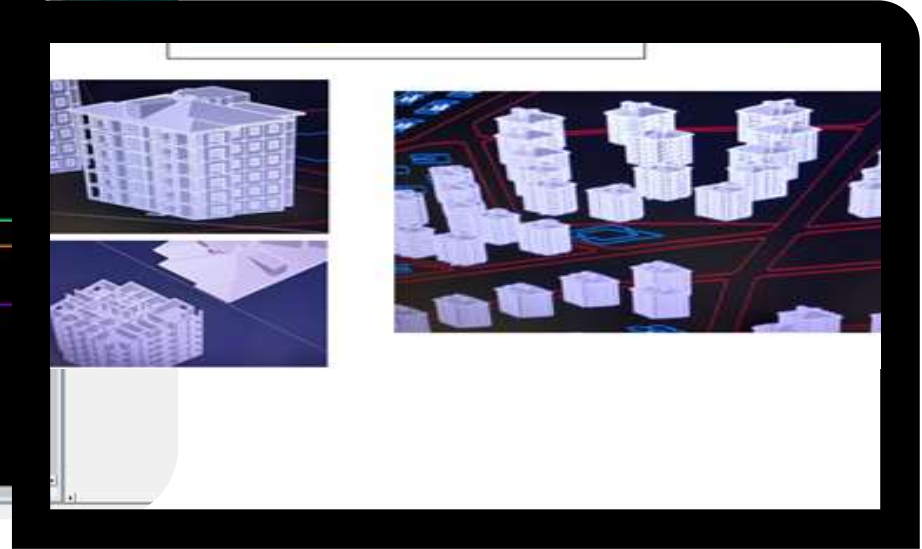
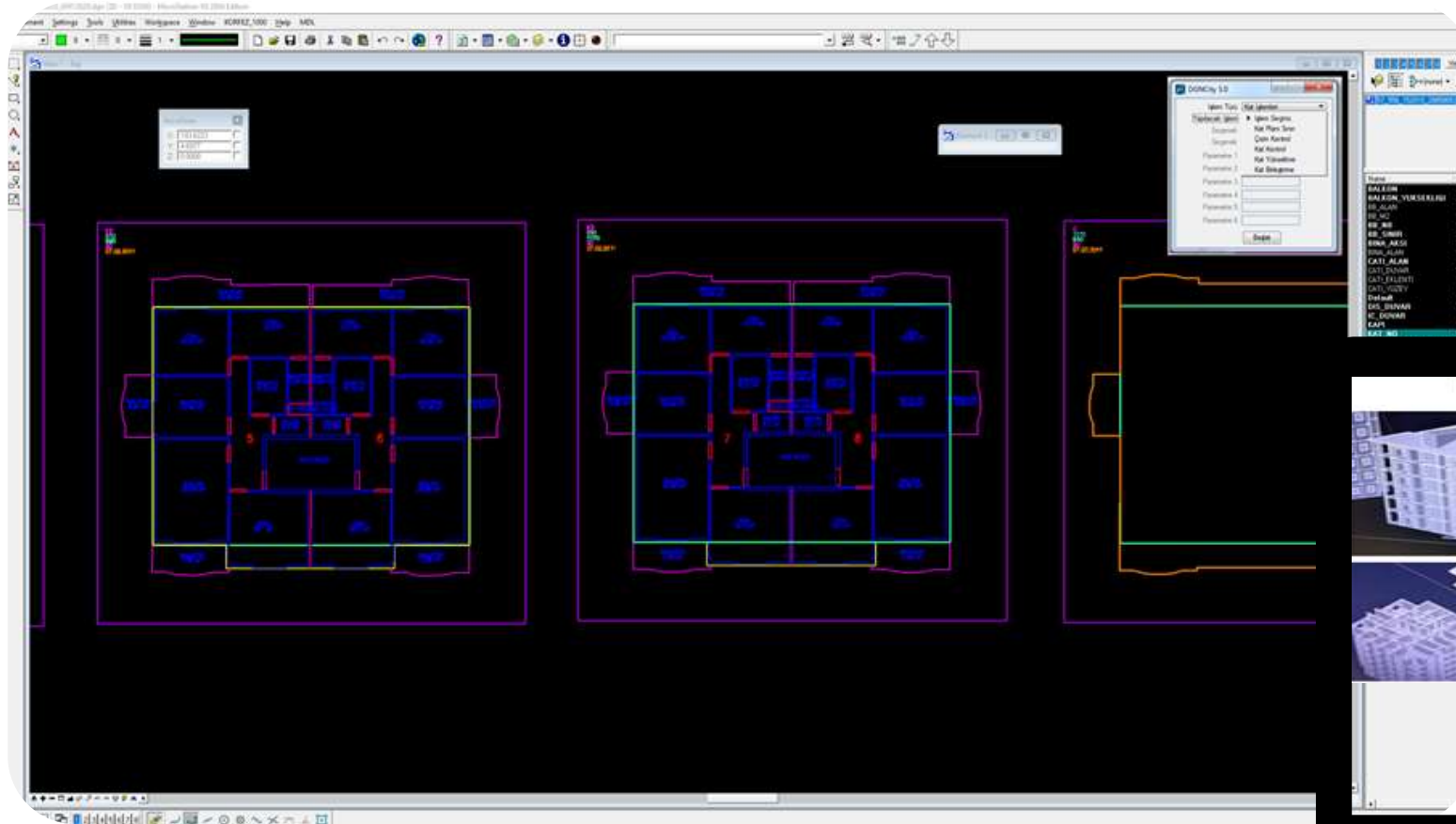
## Production of 3D Building Models



scanned architectural projects



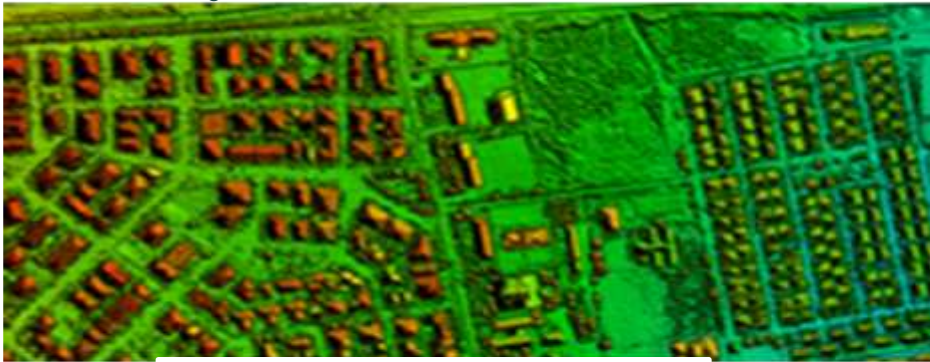
## Photogrammetric Building Productions



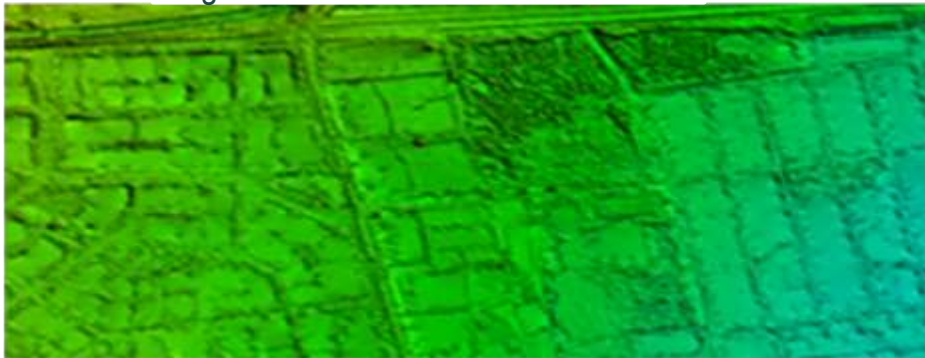


## Project Products

Digital Surface Model



Digital Terrain Model



Point Cloud



Orthophoto



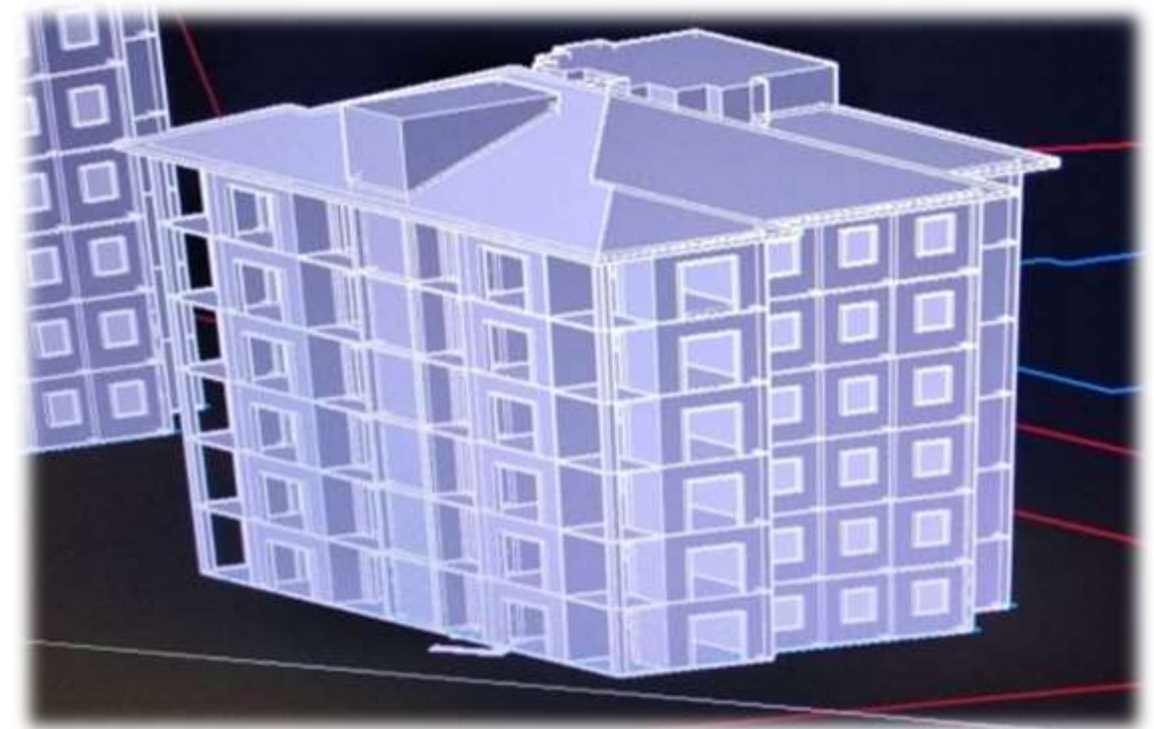


## Project Products

*Photogrammetric Model*



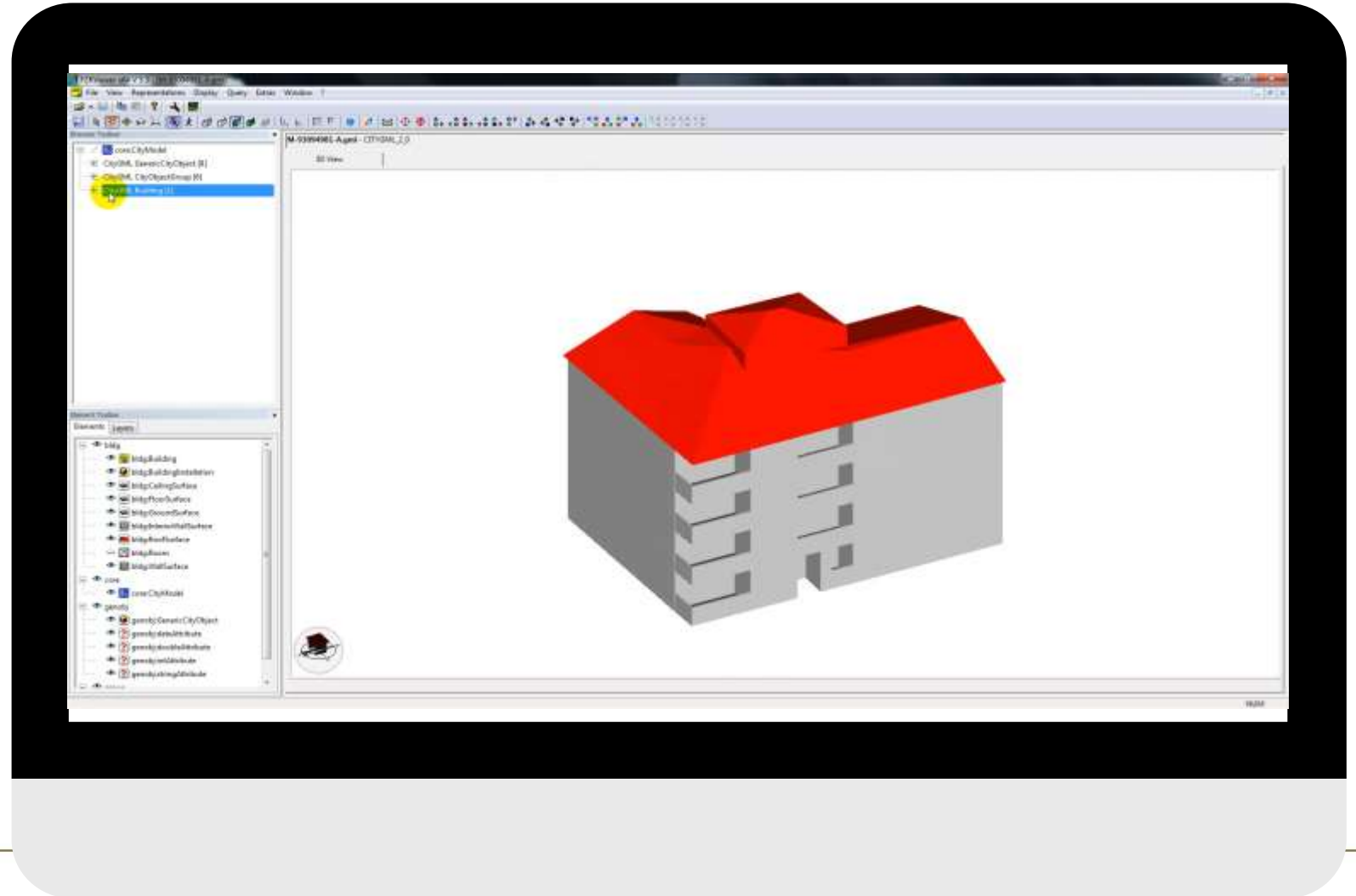
*Architectural Model*



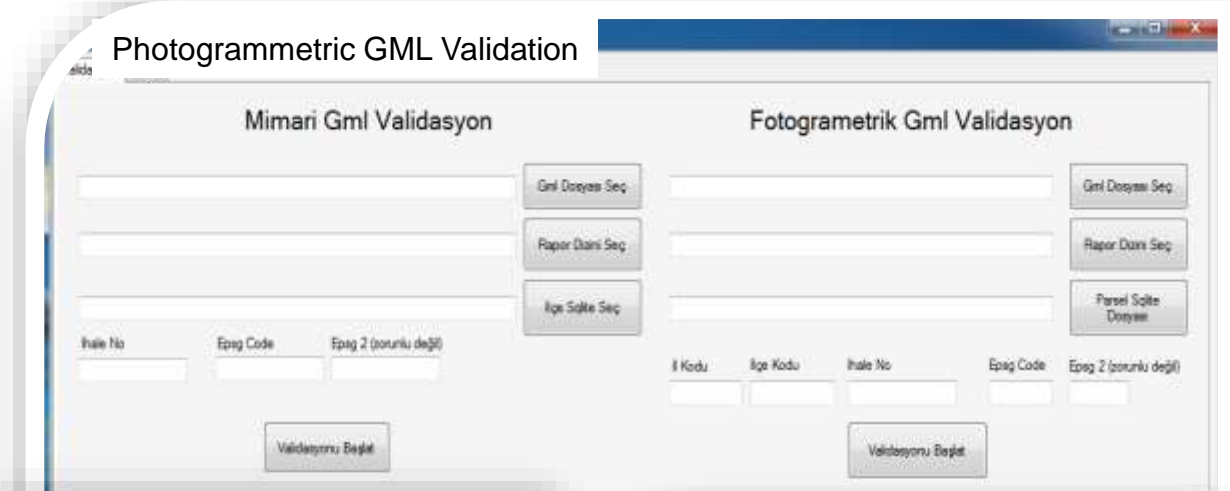
## GML Building Data



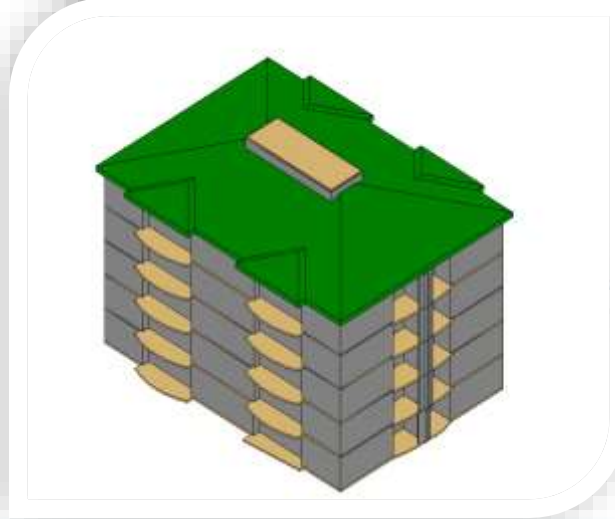
- COMMERCIAL SOFTWARE
- INDEPENDENT
- EASY TO SHARE
- DATABASE CONNECTION



## Validation



Developed Software  
Above 200 rules





## 3D Cadastre Production Areas



2019
5,500 sq2
19 City
7 District Centers

2020
6,400 sq2
21 City
7 District Centers

2021
6,000 sq2
8 City
48 District Centers

Target
48.000 sq2
81 City
922 District Centers

## SUSTAINABILITY

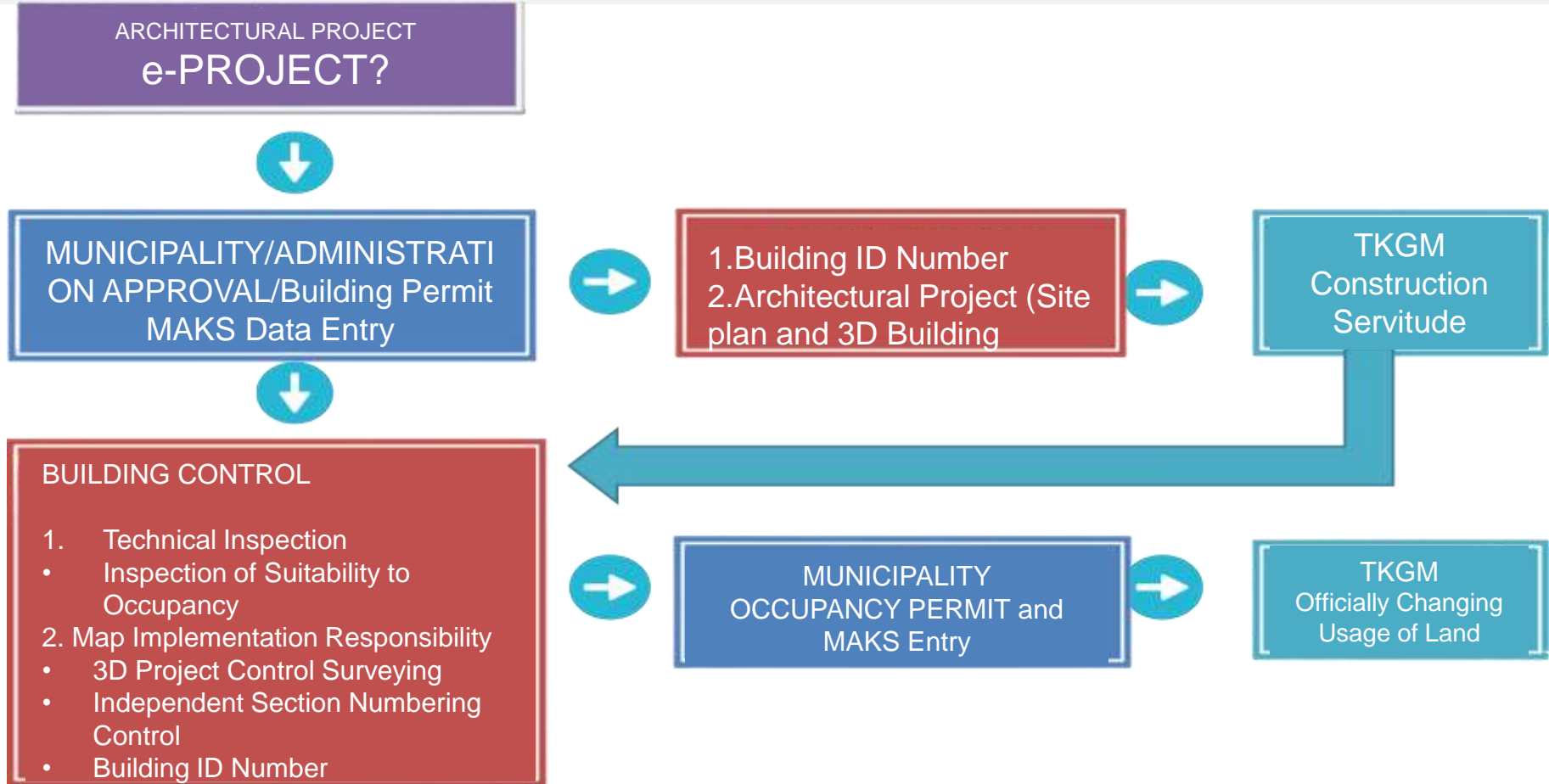


*Land Registry*

*Adress*

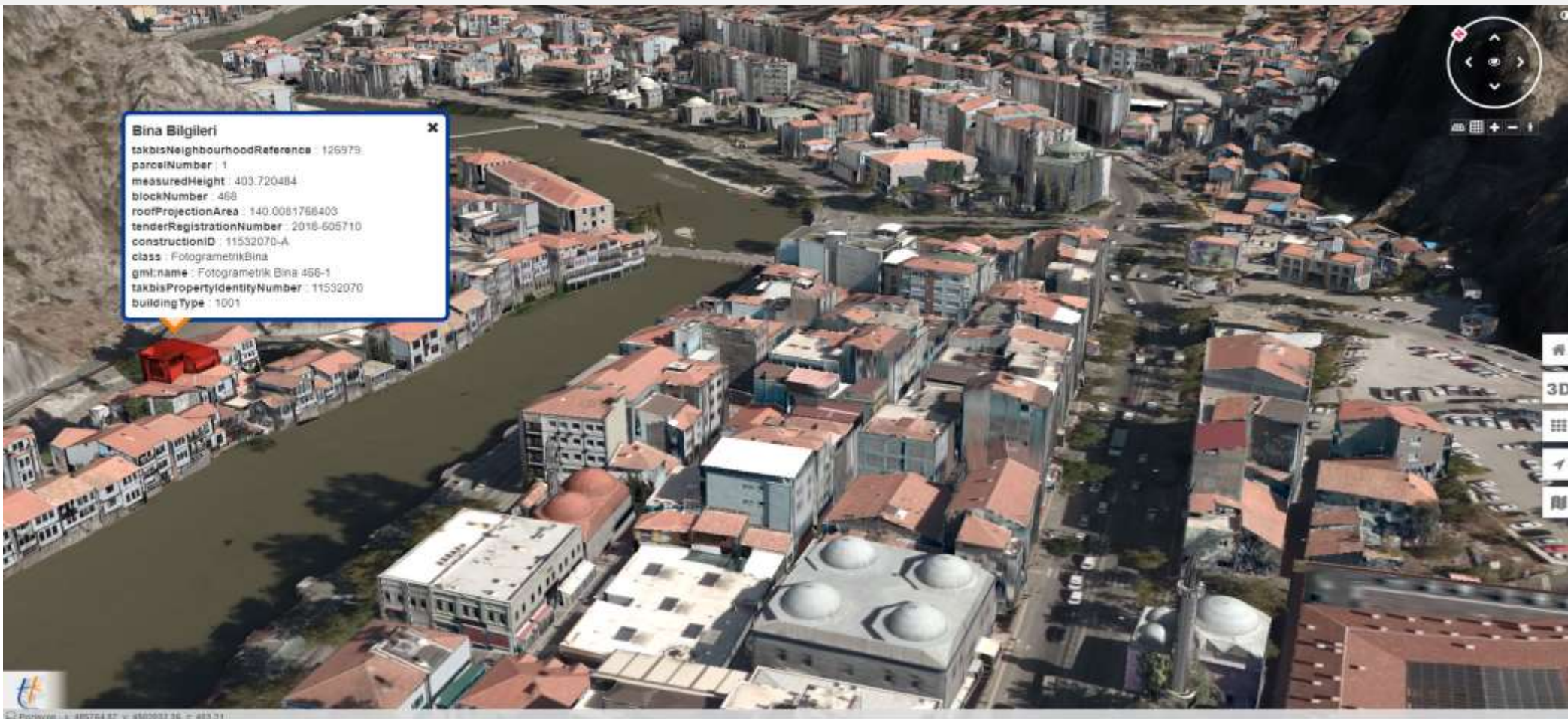


## SUSTAINABILITY





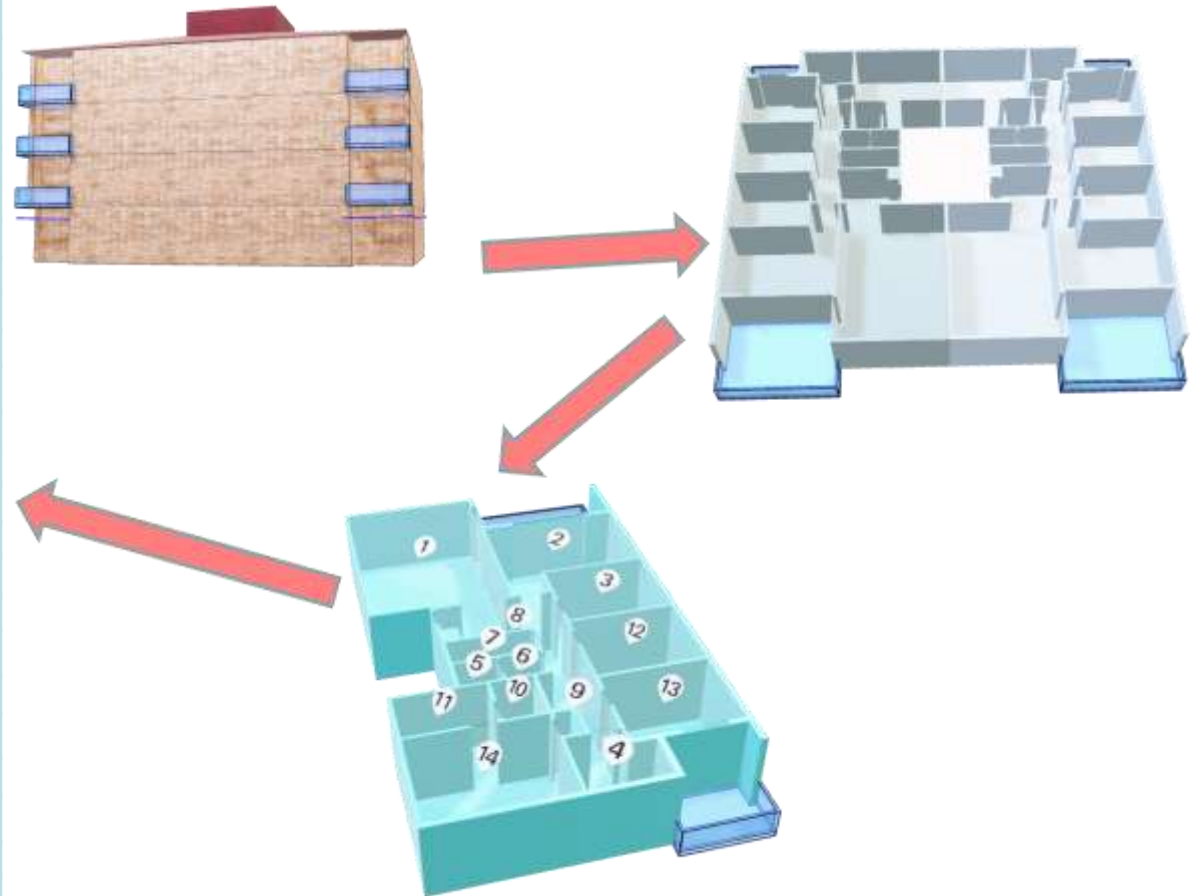
## 3D Web Presentation





## 3D Web Presentation

Parcel Attribute	
Property ID	69339954
City	Amasya
District	Merkez
Neighborhood	Şeyhçui
Block Number	101
Parcel Number	83
Area	650 m <sup>2</sup>
Quality Type	Kargir Sekiz Katlı Apartman ve Arsası
Ground Type	Kat Mülkiyeti
Independent Partition Information	
Block	-
Floor	2
Independent Partition	5
Facade	South - East
Gross Area	142 m <sup>2</sup>
Clear Area	132 m <sup>2</sup>
Public Restrictions Information	
It is located in the natural protected area.	
Property Value	
Independent Partition Value	346.000.00 ₺ (October/2021)
Address Data	
Building ID	172123
Independent Partition ID	2
Neighborhood	İsmet Paşa
Street	Galip Erdem
Building No	18
Apartment ID	5









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ANKARA

***Thank you for your listening...***

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