
NeoCity View
Navigate Your Reality
A New Approach
to the City View
GeoGroup

NeoCity View

Navigate Your Reality

The Geo Group Team

NeoCity View is a data processing service and software created by Russian innovative company focused on research and development in the field of three-dimensional visualization of surrounding reality.

Sergey Gevorkov
Founder

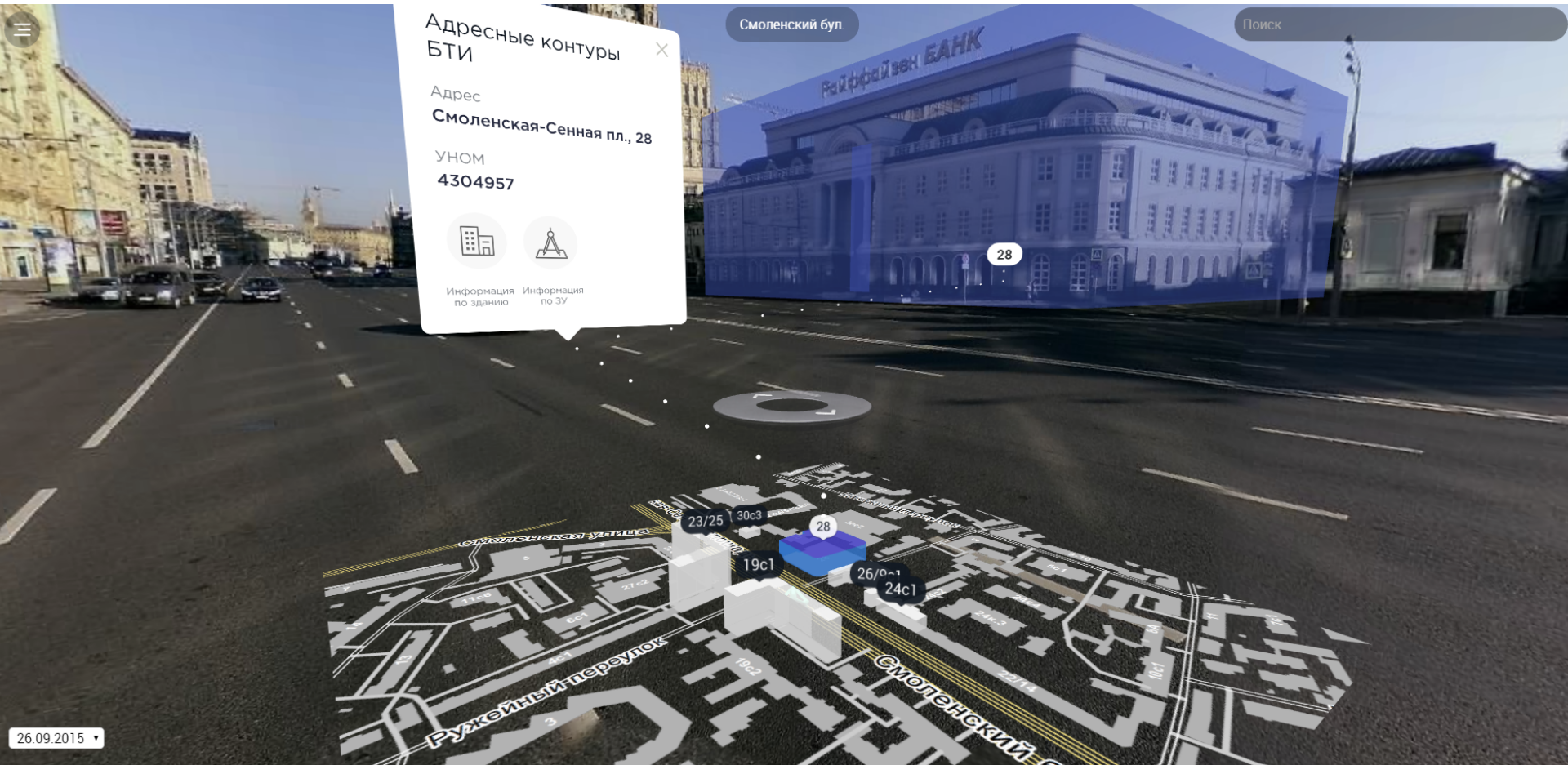
Katerina Mekhlis
CEO GeoGroup Europe

Oleg Ilichev
CEO Russia

- Experience in the development and implementation of geo-information services
  we have been working in this field for over 10 years
- Our solutions are widely used in Russian government projects
  we scanned and processed over 60 000 km of streets and roads for the last three years

GeoGroup

3 in one = NeoCity

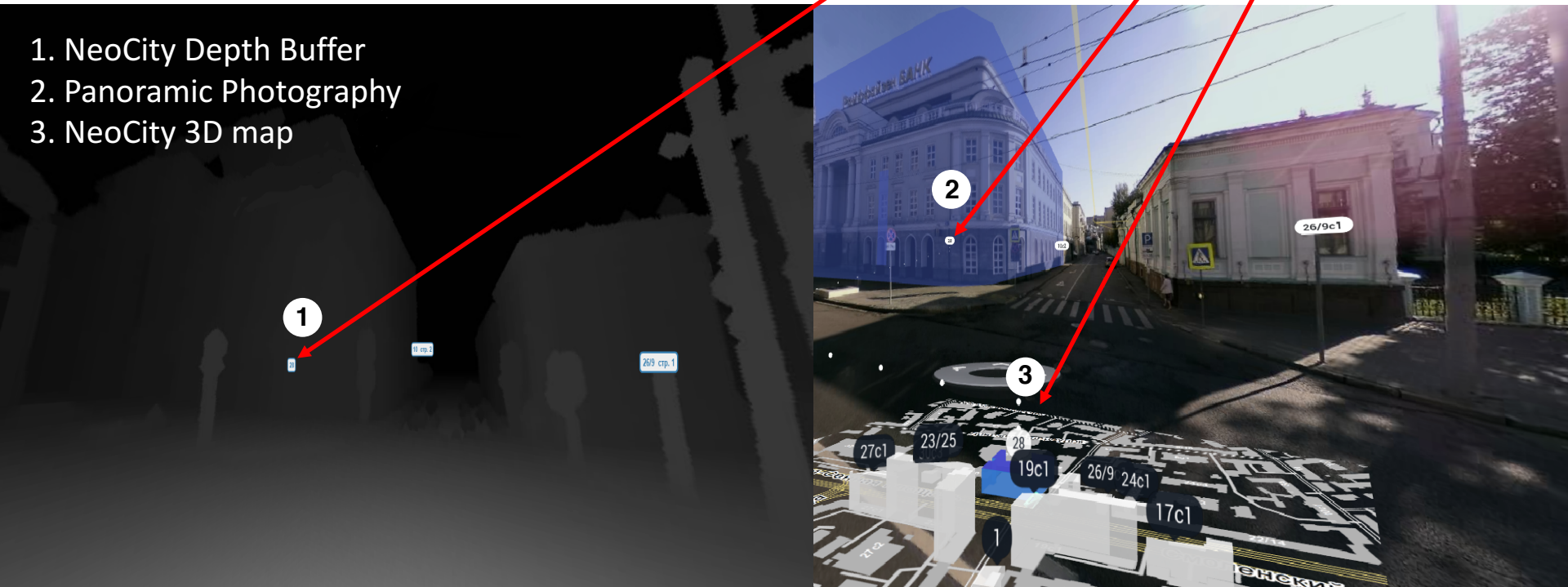


NeoCity Solution

Each NeoCity point has a geo reference &
3 visual solution

NeoCity panorama combines a panoramic photography with a so called depth buffer.
Our software processes point cloud data into a depth buffer. As a result each pixel at panorama has a geo reference.

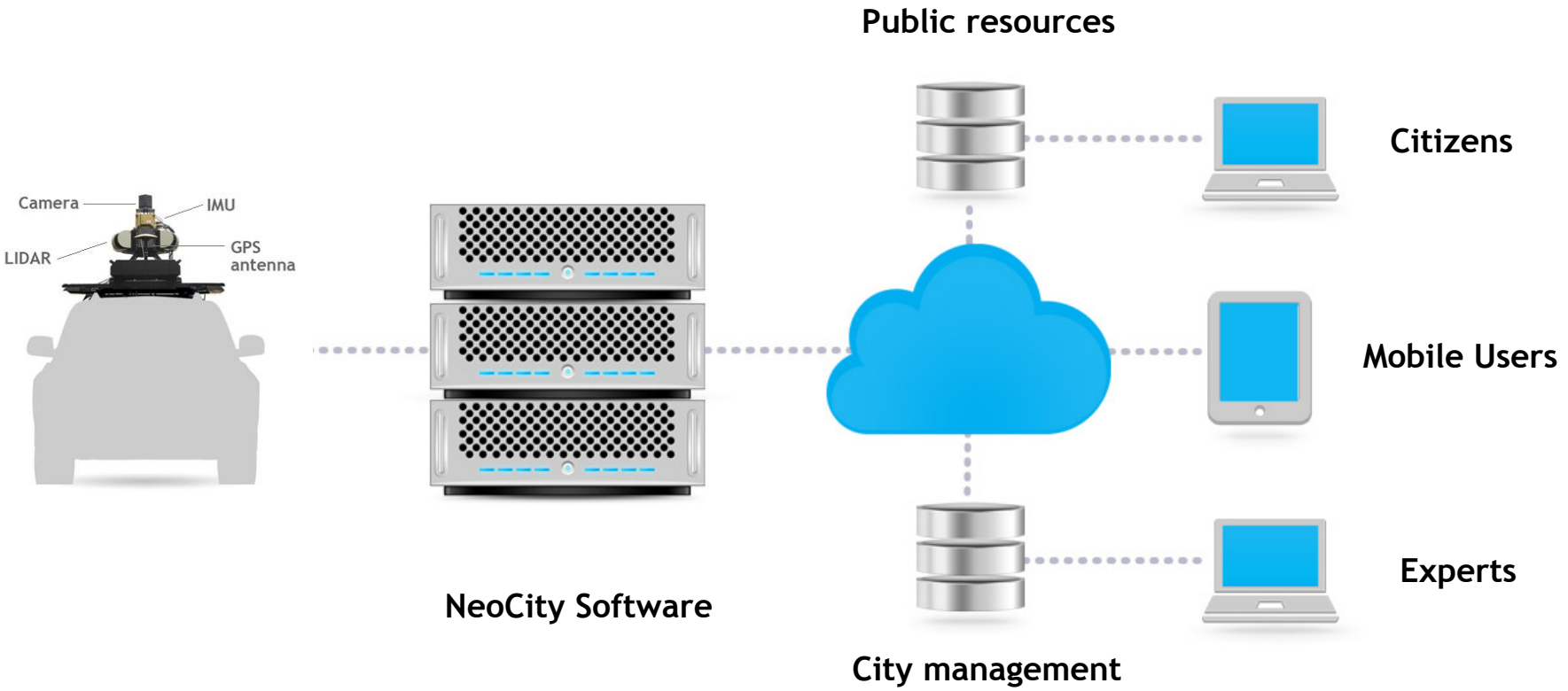
End user gets a user friendly tool – a panoramic image to work with and the georeferenced space of depth buffer behind. This makes the whole system light to be used for mobile client and Web without using full data from point cloud.



Data Processing

To create NeoCity we use our own software:

- to process data from Laser scanning from different types of mobile scanning system(*.LAS files) and panoramic images.
- to integrate data from other different data bases (such as a real estate register, etc.)
- to recognize objects and work with it (measure, embed, identify, etc.)

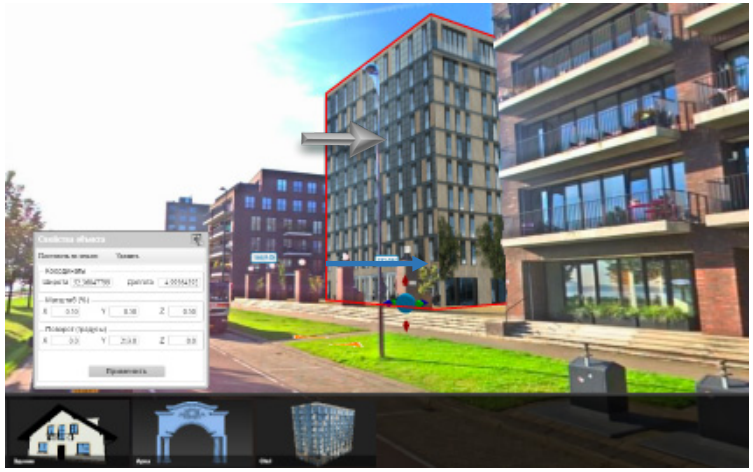


Main Tools to analyze a City Environment

Navigate & Measure

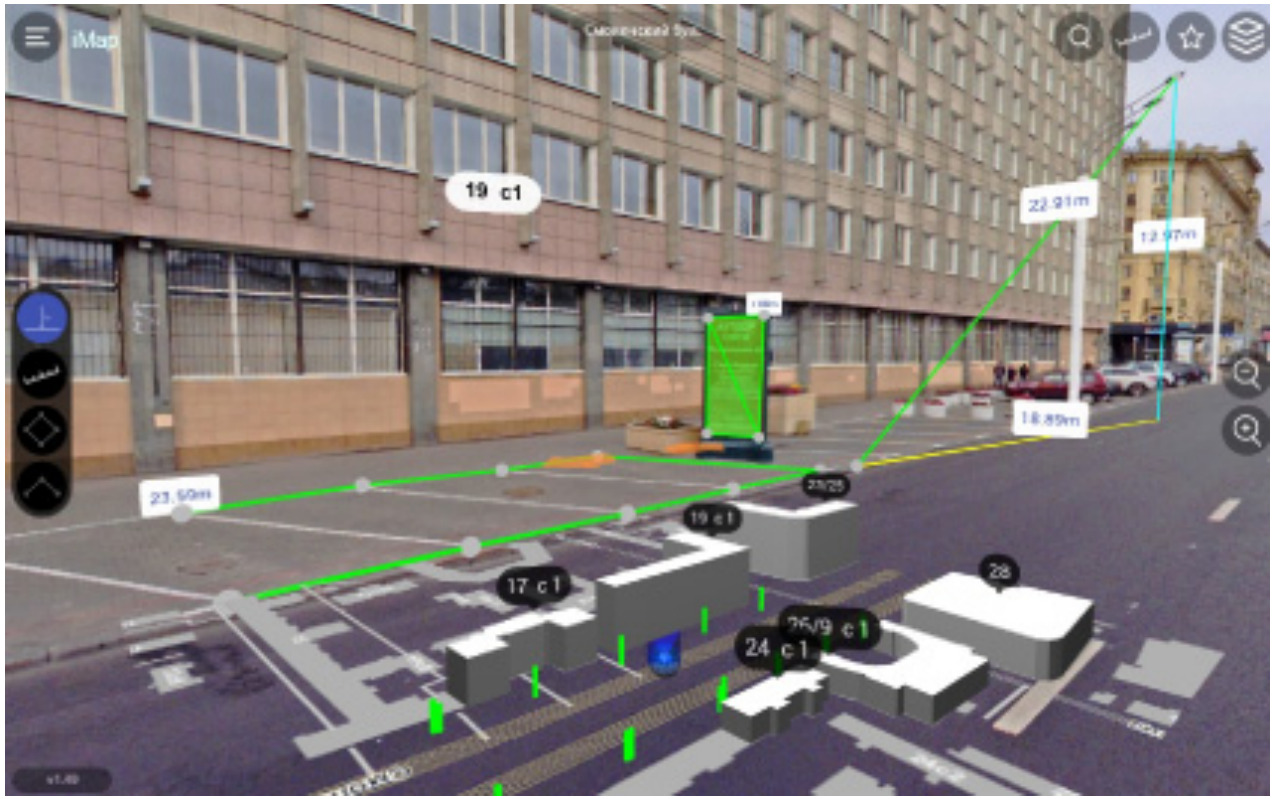
Recognize & Map Objects

Embed Objects



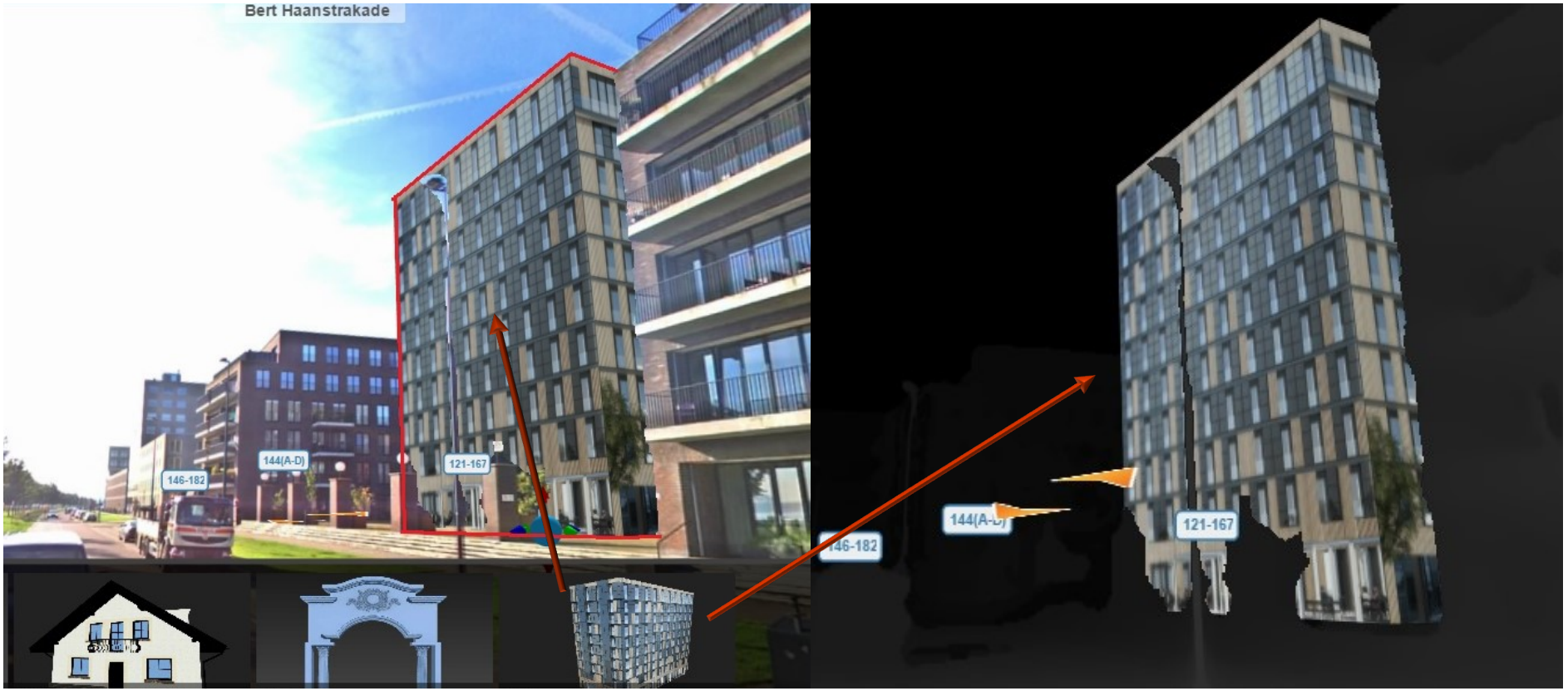
NeoCity Navigation & Measurement

- New approach to the city space visualization
- Navigate on a panoramic photo & map
- Measure on a panoramic photography (distance, areas, curved lines, etc)



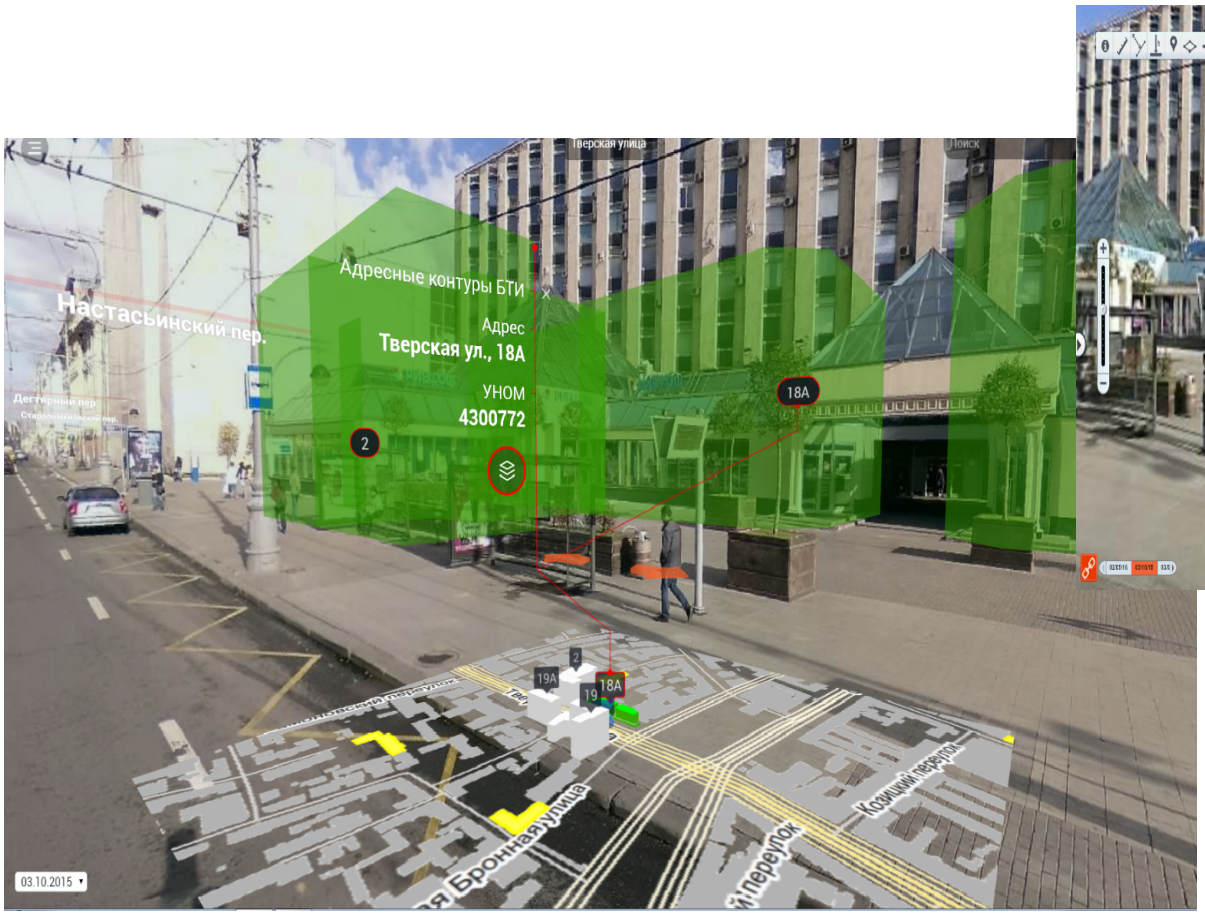
Embedding Objects into Panorama

NeoCity View helps to visualize new urban design projects
in a real city environment by embedding 3D objects into photo panorama (3ds, obj, etc.).



Urban Infrastructure Design planning visualization

NeoCity View helps to visualize and map city reconstruction plan and track history. Recognize and map objects to construct, objects to reconstruct and objects to destroy into NeoCity panorama.

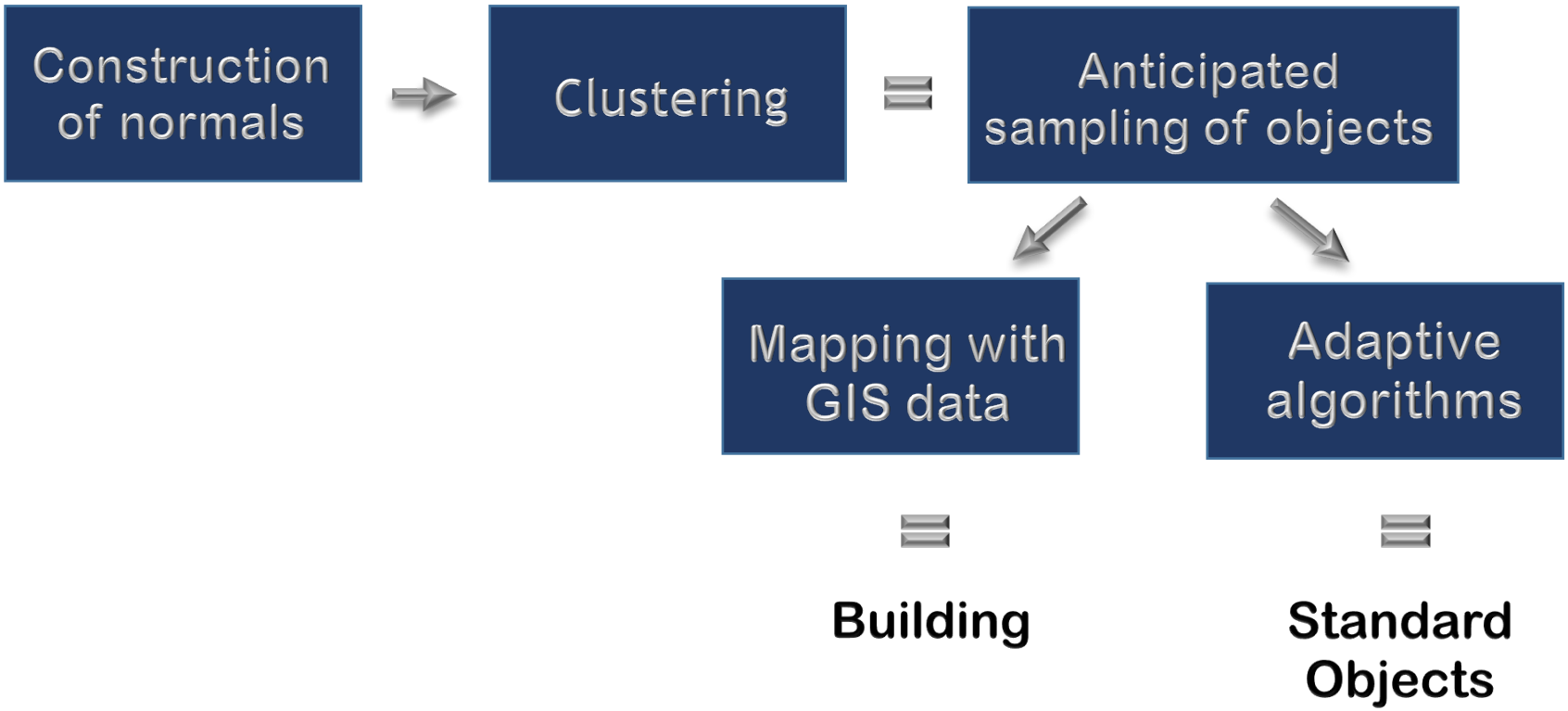


NeoCity Object Recognition

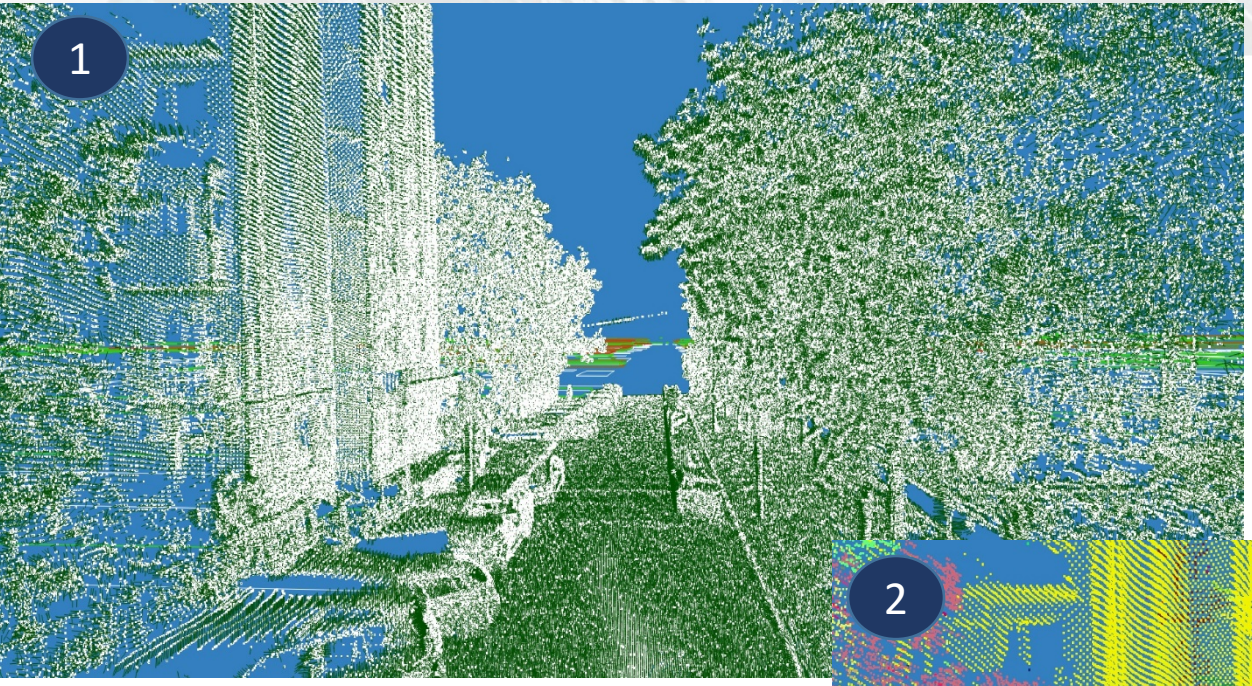
- Recognize infrastructure objects

  (such as road sings, lamp posts, streetlights, billboards, etc.)

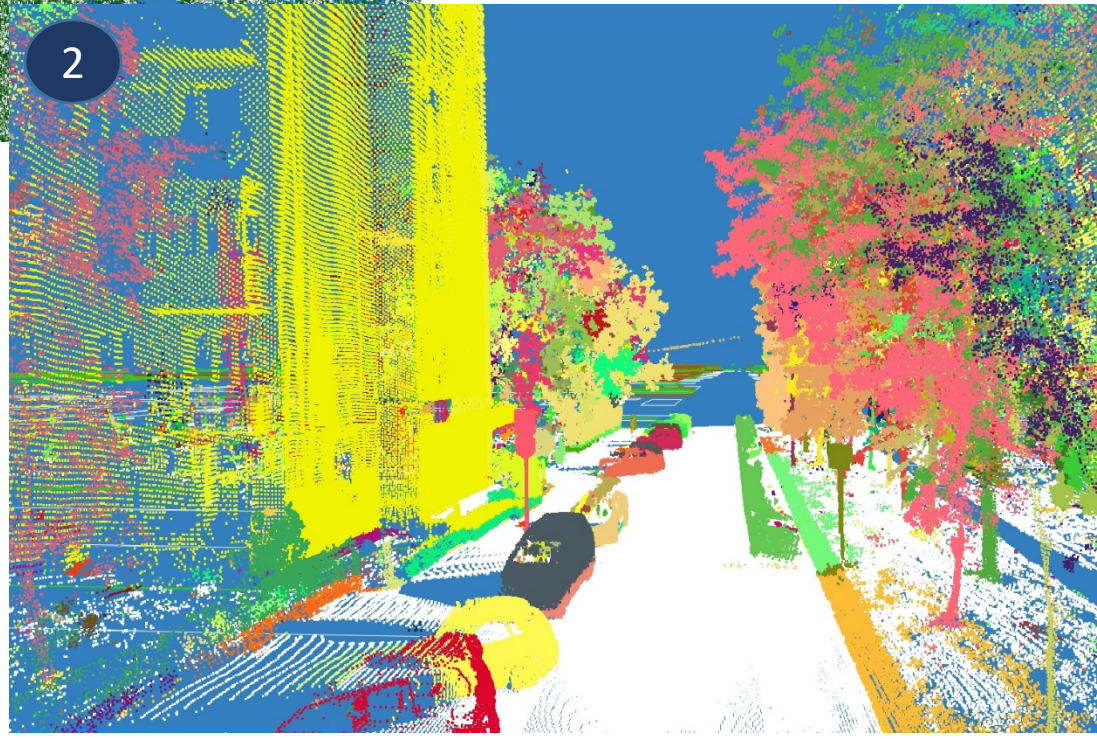
- Recognize building facades



NeoCity Object Recognition



1. We construct normals to each point of point cloud.



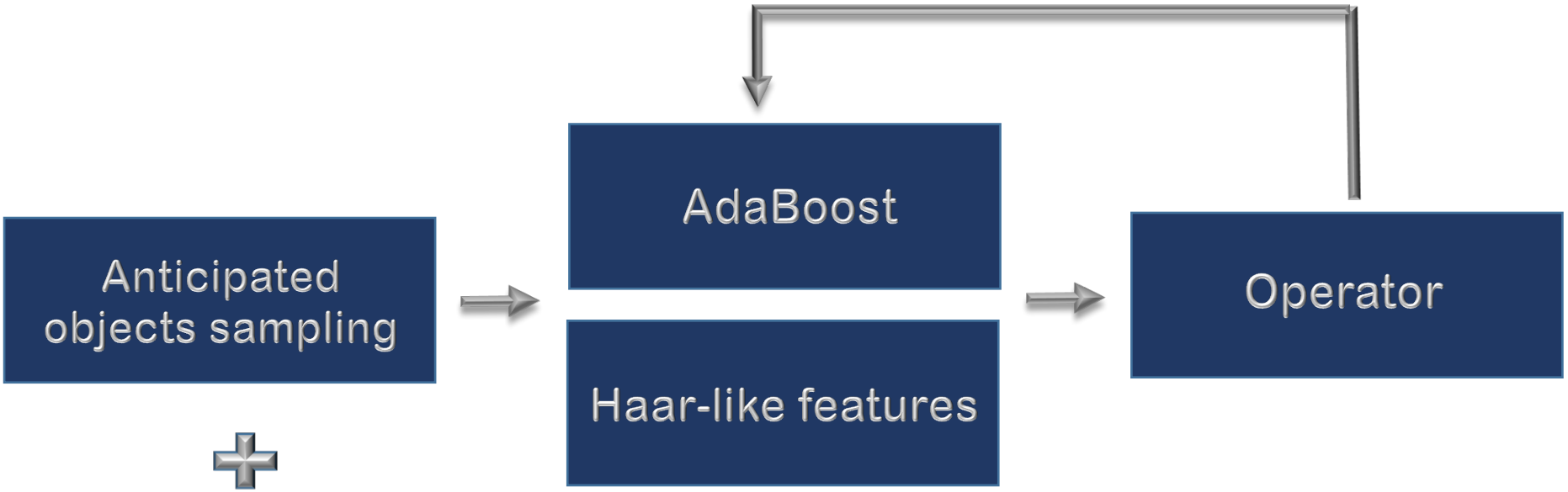
2. Clustering of connected group of points in the point cloud.

3. This way we get **anticipated sampling of objects** – most likely to be the objects we want to recognize.

NeoCity Object Recognition algorithms

To ensure accuracy we use both point cloud adaptive algorithms and image based analysis.

This combination gives us a lot more feature to analyze for our object recognition algorithms.



Features from our library

NeoCity Infrastructure Object Recognition

NeoCity Object Recognition adaptive algorithms help to recognize standard infrastructure objects

with a high level of accuracy (up to **95%**)

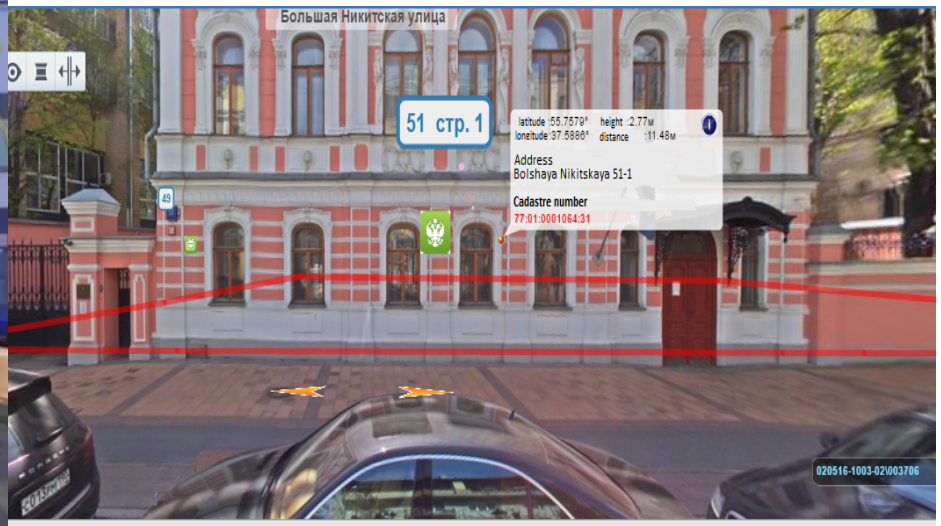
We can provide automated urban asset inventory for a short period of time

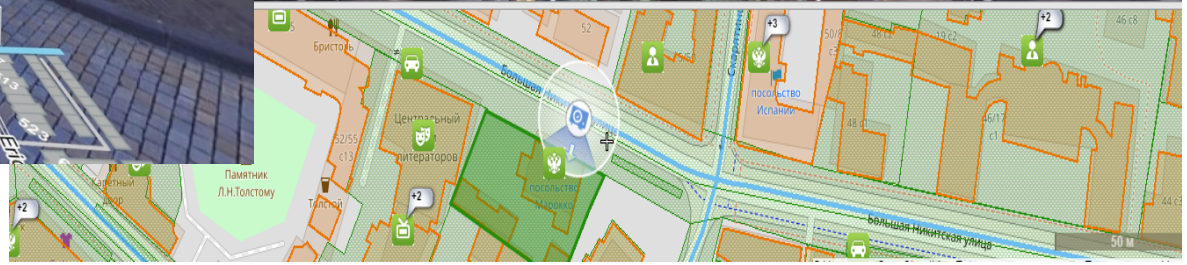
(a big European city for about one month).

NeoCity Object Recognition

We map objects from anticipated sampling and verifying it with GIS data. If building exists in the map and in the sampling – this is a building.

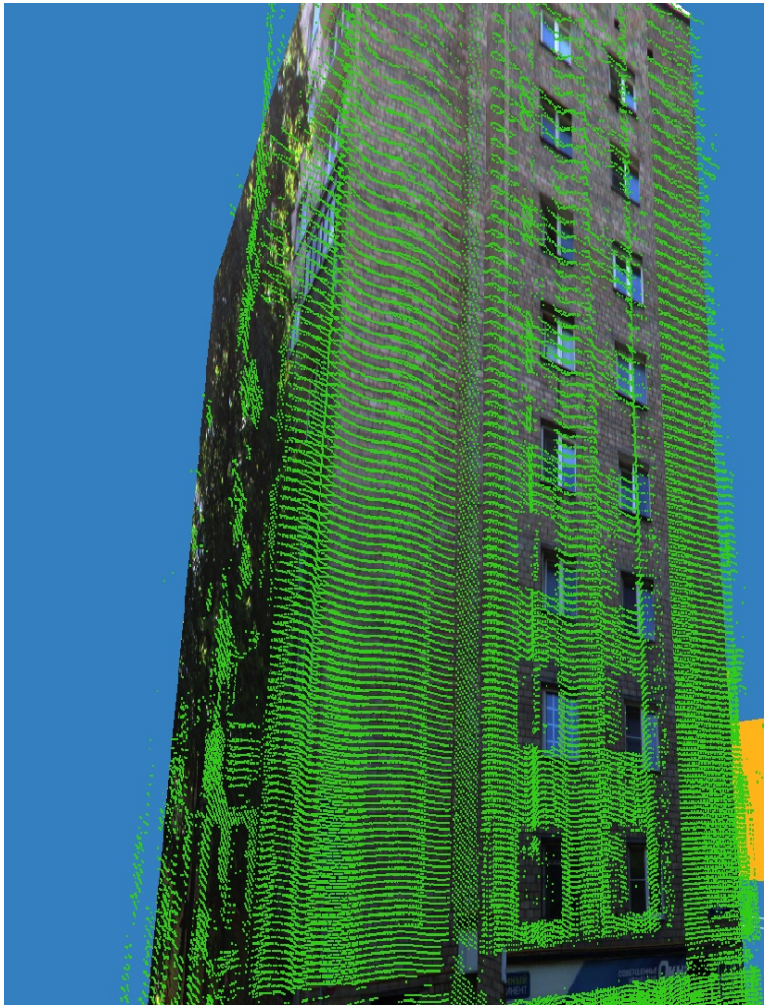
Later on we can mapped our building with other GIS databases (for example from City authorities) and provide any detailed information on the object.





Recovering Facade Texture

To recover façade textures from already recognized buildings we use our algorithms based on **Delaunay triangulation** principle to analyze point cloud.
Then we match the results with images.



NeoCity in Practice

Due to the specific tools NeoCity can help city athorities to provide important functions such as:

- Urban Asset Inventory in automated mode (for a shot period of time)
  we have provided inventory for over 200 000 units using NeoCity
- Reconstruction planning & Control
- Property tax control
  monitoring based on our panoramas integrated into the city GIS data (asset registers, etc.)
- Urban environment status history tracking (comparison of different time periods)
  we scan data twice a year, over 60000 km of roads for the past 3 years
- Urban design decision making
  embedding new 3D objects into a real environment on photo panorama
- Virtual city tours
- Education projects (games in the real city environment, city history, etc.)

Best qualities of NeoCity

Compatible

- we can process data from laser scanning from all open sources
- export from GIS services (WMS, WFS) and import into open GIS resources

User Friendly

- PC/Internet (WebGL)/ iOS, Android, Windows
- high-speed operability
- API for your applications
- useful tools for measurements and navigation

Easy to Get

- any big European city just for one month
- we can process data on your servers or provide ready-to-use solutions

NeoCity Innovation

NeoCity View  is the best solution for city authorities to control and monitor a city, provide quick asset inventories

NeoCity Game  a game in a real city environment, educational purposes

NeoCity Tour  a virtual tour in a real city with historical data

NeoCity Vision  a special navigation system for visually impaired people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