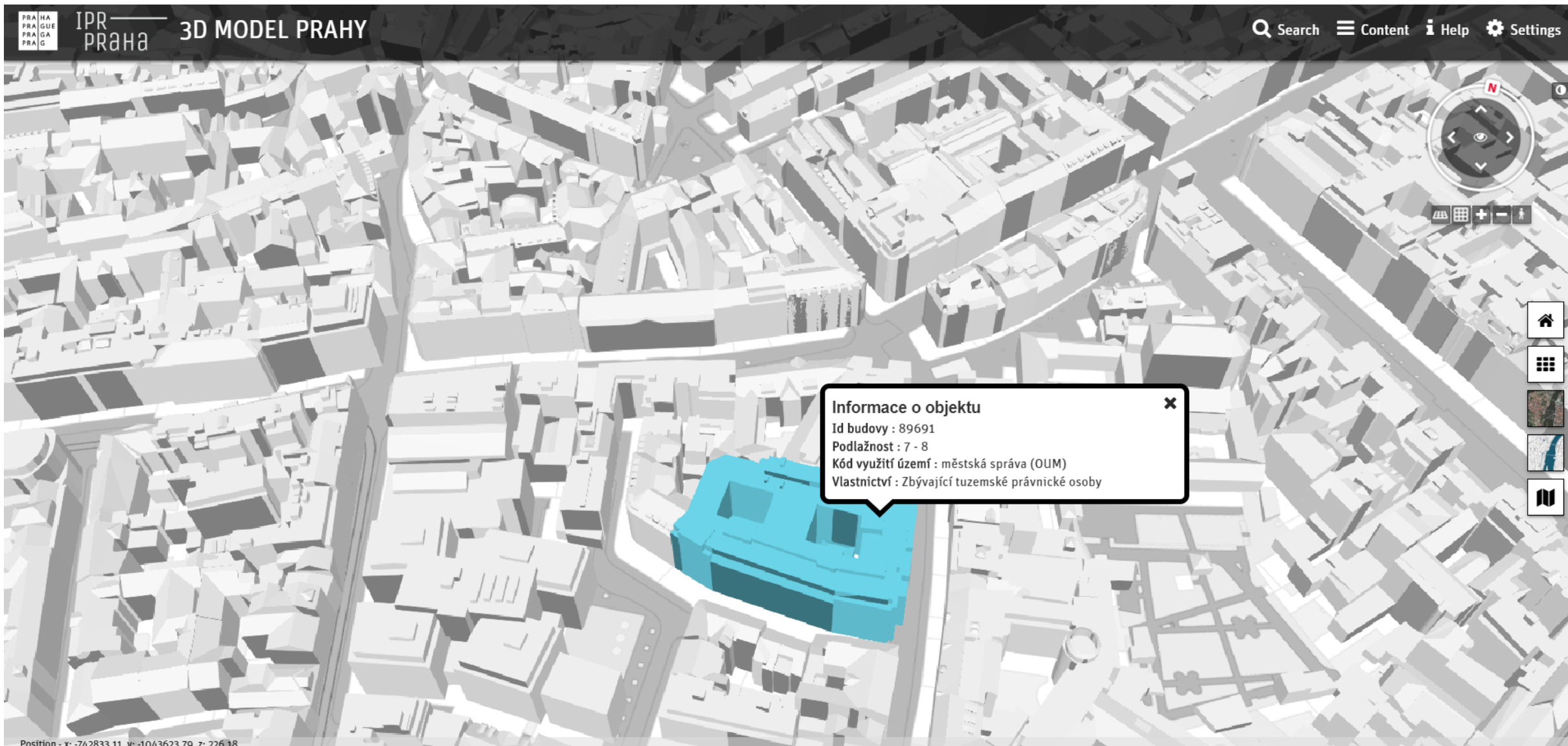


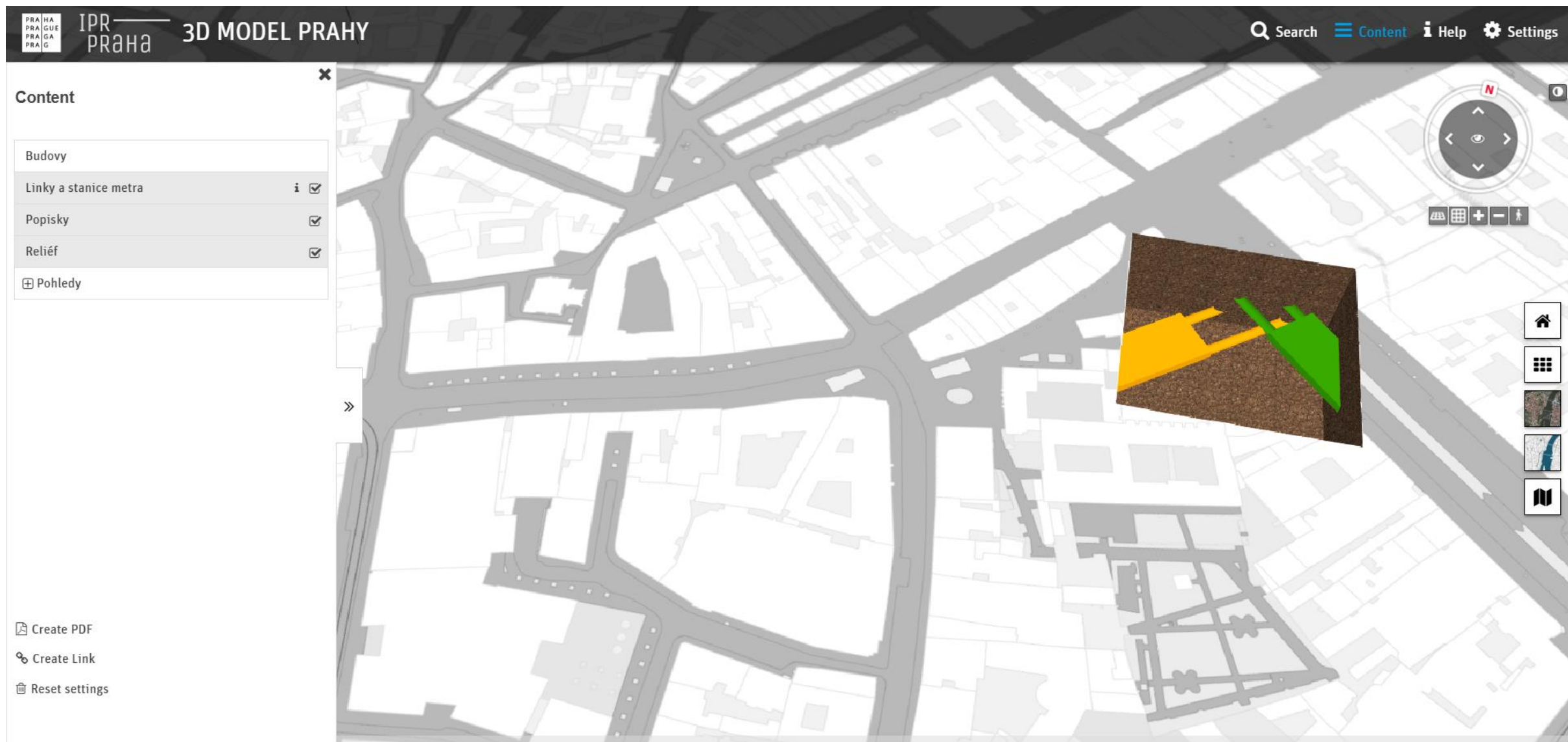
Digital Twin Czechia and Prague

----- Jiří Čtyrský, Prague Institute of Planning and Development Prague



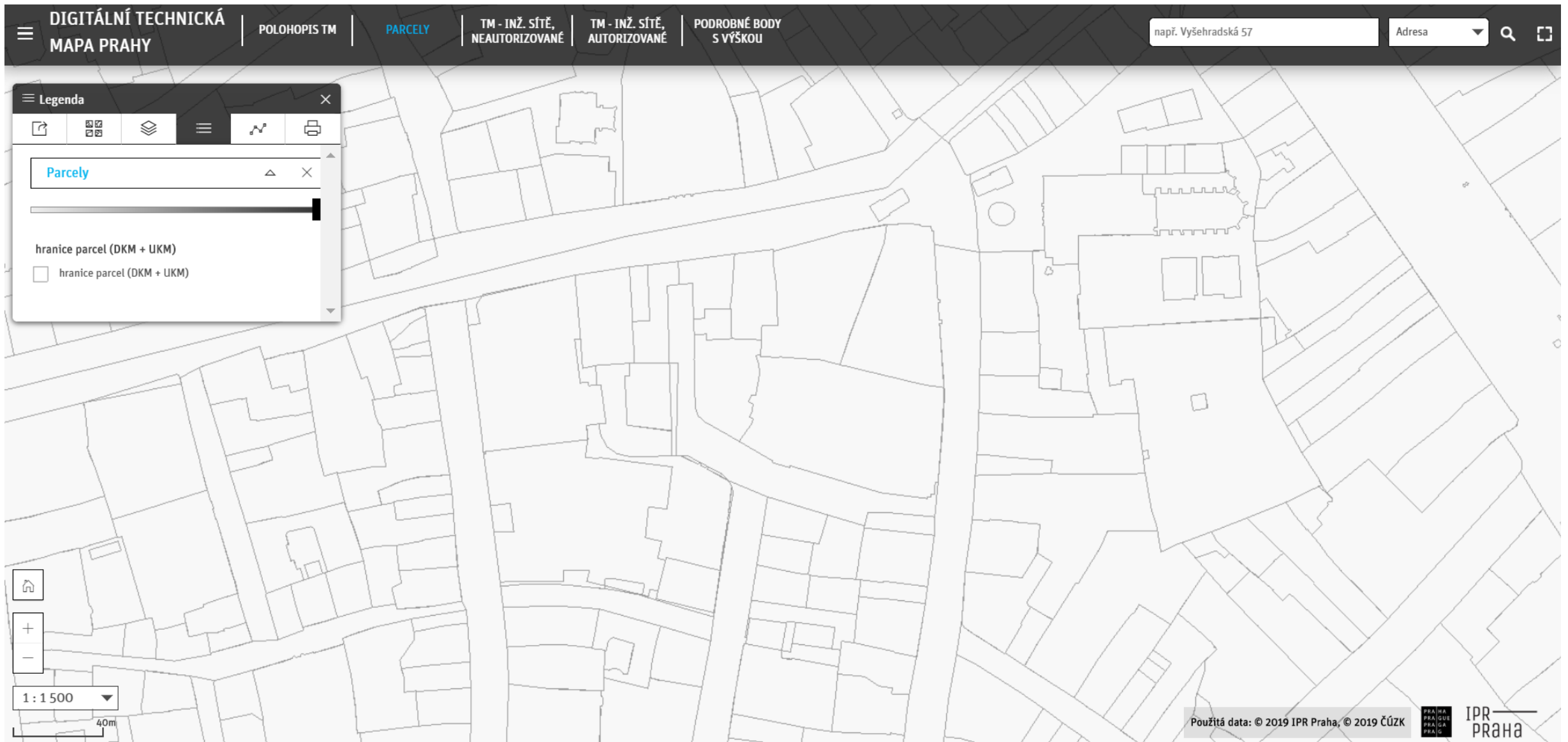
CITY 3D MODEL

BUILDINGS

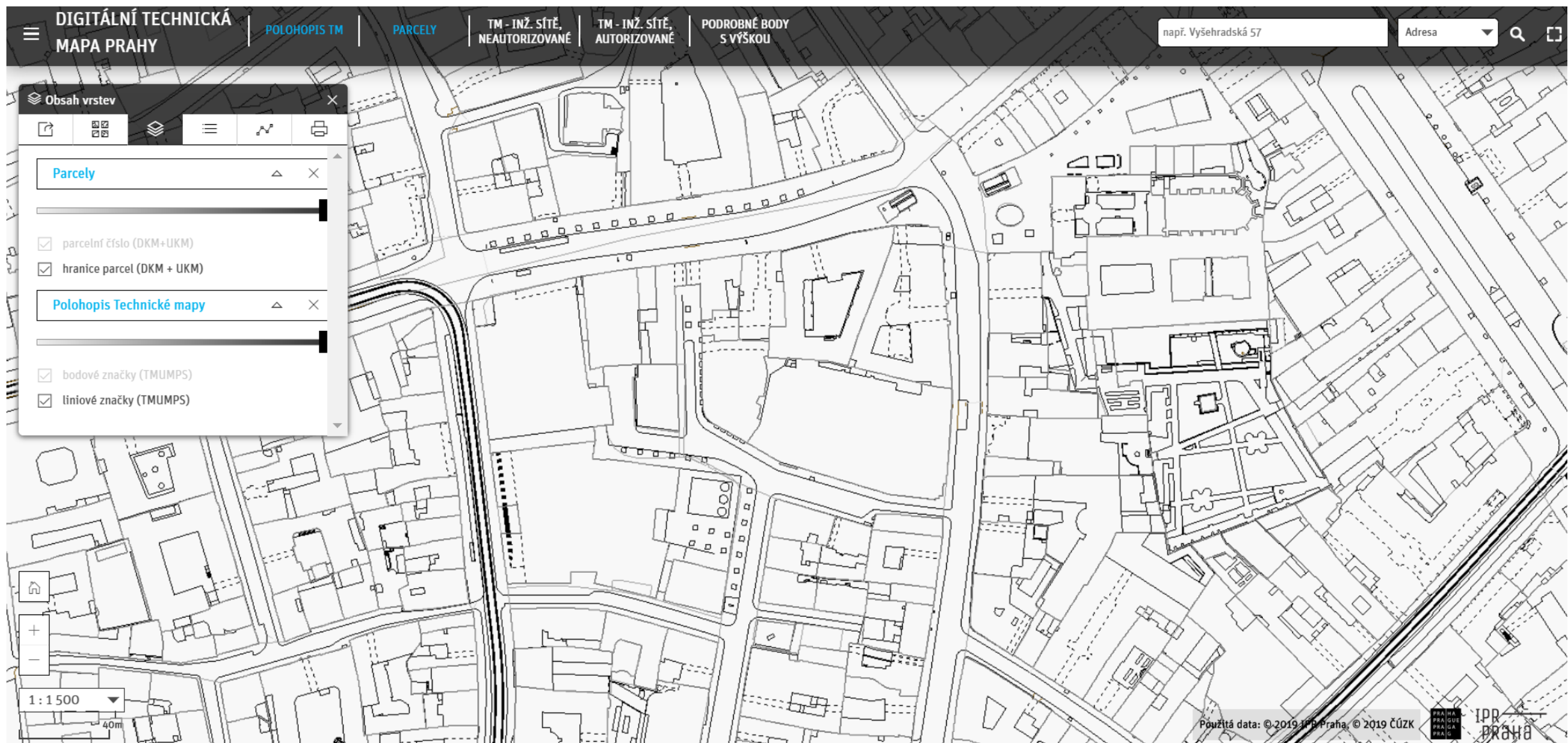


CITY 3D MODEL

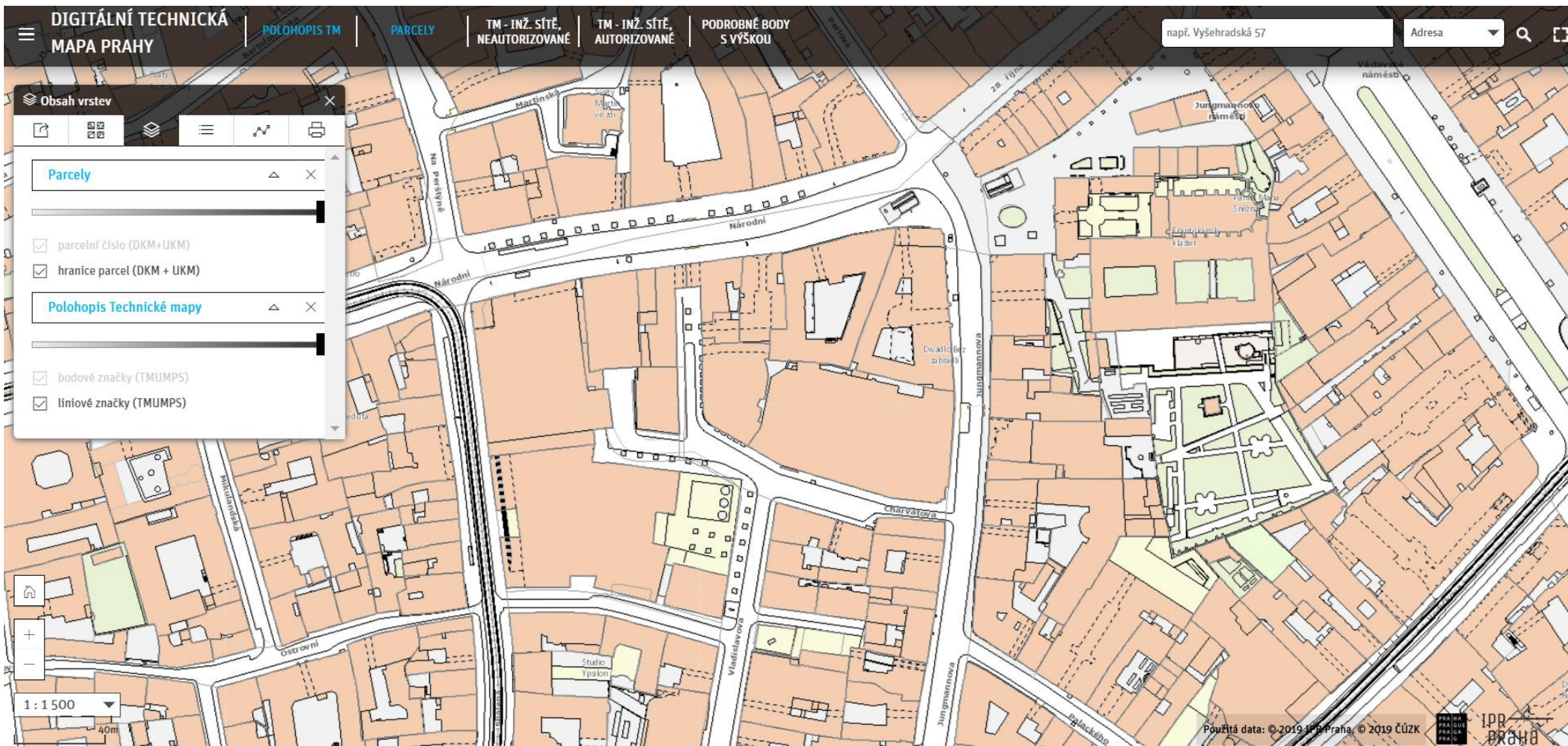
UNDERGROUND PILOT (METRO)



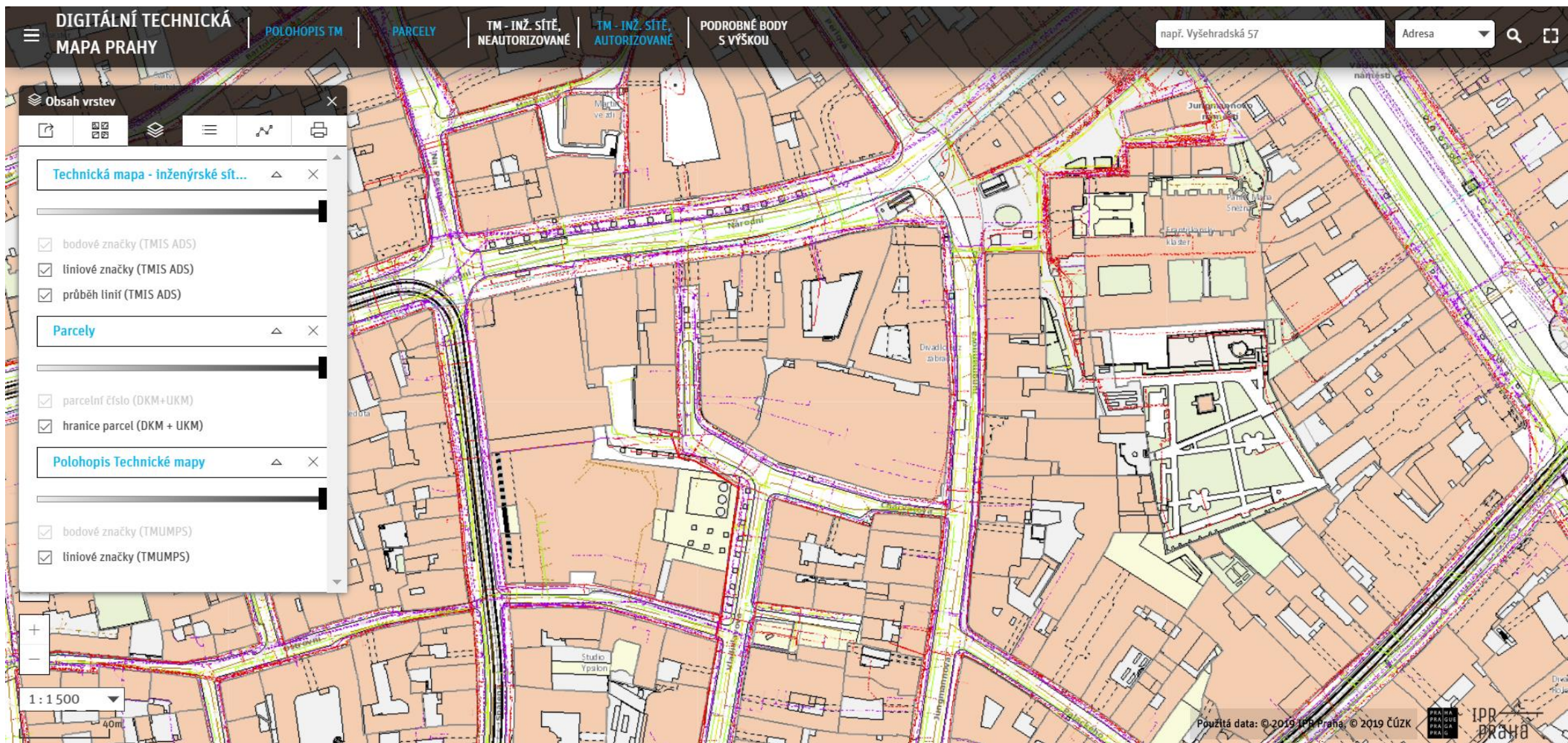
CADASTRAL MAP



DIGITAL TECHNICAL MAP



DIGITAL TECHNICAL MAP



DIGITAL TECHNICAL MAP

What?

How?

Why?

Complex structures
Built environment: Objects
Object segments

Definition/Classification

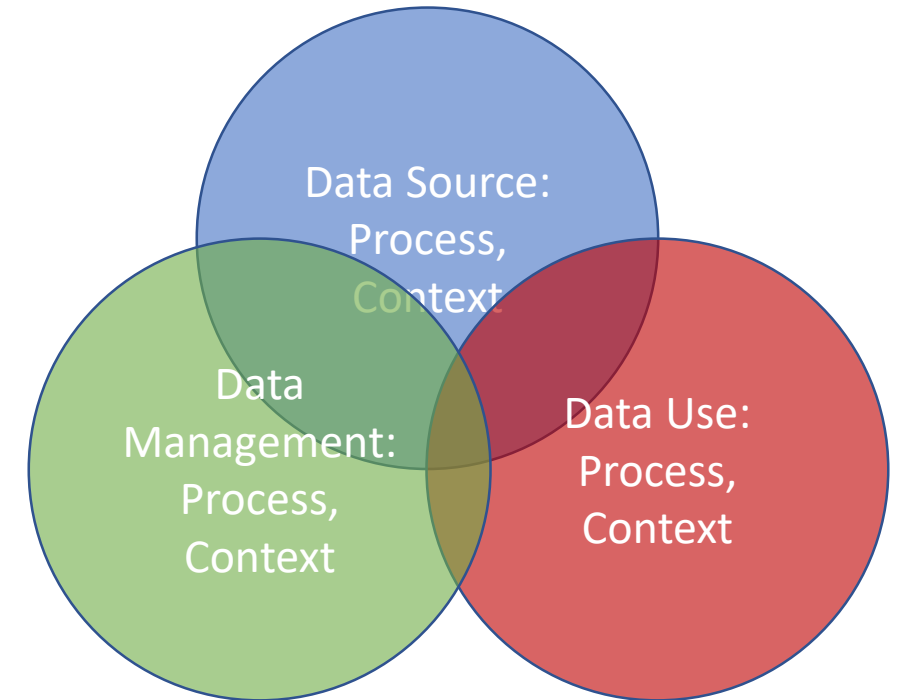
Identification

Description - parameters

Alphanumeric

Geometric

Time



Why? Business Motivations

- **Unblock building permit procedure**

- Support Decision Making/Local Government

- Support Planning Process

- Support Project Preparation/Developers, Investors, Engineers, Builders

- Support Facility Management

- Support Property Owners

- Support Public Participation

How? Business Requirements

- Fully Digital Building Permit Procedure
- Fully Digital Planning Process
- Unified Information and Process Model of Building and Planning Agendas
- Unified Information Model of Built up Environment: Buildings and Other Constructions
- Standard Based: ISO/CEN/ČSN...OGC...

- (Legally Binding) Reference Data

What? Model Requirements

- Unified Identification, Classification and Definition of Built Environment Objects
- Various Model Representations for Key Users: 2D/3D/4D, LODs, parameter descriptions
- Integrated Data Management: Interlinked Data Management Processes

Activities

National level

- Digital Building Permit Procedures/Recodification of Building Law
- Czech Digital Technical Map
- BIM 2022
- RÚIAN (Registry of Land Identification, Adresses and Real Estates)

Local level (Prague)

- Prague Digital Technical Map
 - Prague 3D city model
 - BIM implementation in Prague City Administration
-

DIGITALIZACE STAVEBNÍHO ŘÍZENÍ

KONCEPT



Czech Digital Building Permit Procedures: Components

- Registry of Built Structures (Systém evidence staveb)
- Registry of Building Procurements (IS Evidence stavebních řízení)
- IS Built Structures Project Documentation (IS Dokumentace staveb)
- IS National Geoportal of Land Use Planning (IS Národní geoportál ÚP)
- Czech Digital Technical Map (Digitální technická mapa ČR)
- Builder's Web Portal (Portál stavebníka)
- Integration Service Bus (Integrační platforma)

Czech Digital Building Procurement: Organisation

- Responsible body: Ministry of Regional Development
- Cooperation: Ministry of Industry and Trade, Czech Office for Surveying, Mapping and Cadastre, Region Councils, Ministry of Transport, Ministry of Environment, Ministry of Interior, Chamber of Commerce, ICT Union, ...
- Strong political support
- Package of legislation changes (Acts, Resolutions, Notices): Winter 2019/2020
- EU funding (Structural Funds, Operation Programmes)
- Implementation deadline: 2023

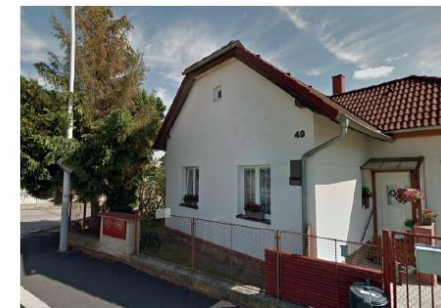
Prague Built Environment Data Management: Projects

- Digital Technical Map (since 1996), systematic update pending
- City 3D Model: LOD2 since 2010, LOD 3 (CityGML 3) in progress (pilot sites)
- Digital Land Use Plan (Metropolitan Plan): in progress
- Planning Permit Registry (since 1996)
- BIM for Facility Management: Guidelines ready, implementation pending/launched
- BIM integration to 3D model and Technical Map: pending



STAVEBNÍ OBJEKT BUDOVA

Jednotný identifikátor
Technické a statistické atributy

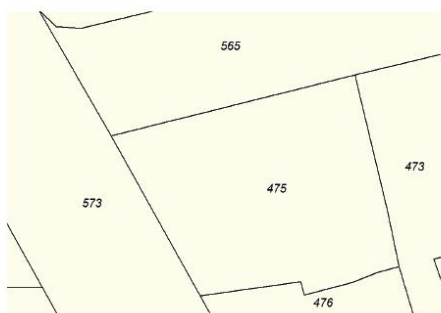


**KATASTR
NEMOVITOSTÍ
RÚIAN**

**TECHNICKÁ
MAPA**

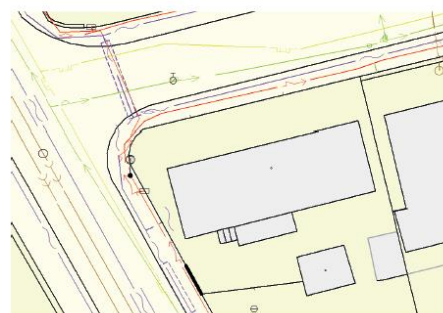
**3D MODEL
MĚSTA**

BIM



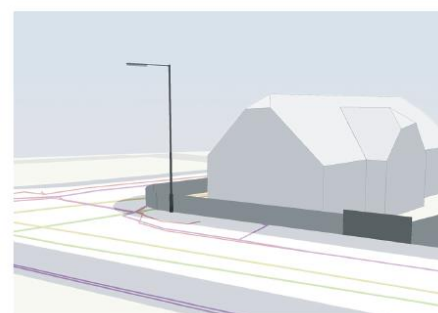
VF ISKN / VFR (národní standard)

Právní stav
ČÚZK
eGovernment



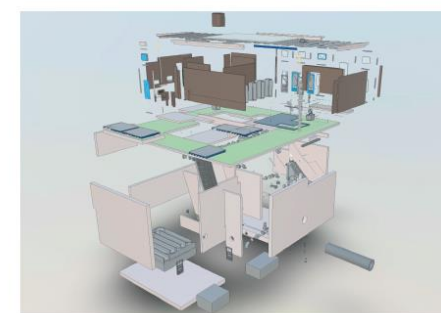
JVF DTM (národní standard)

Skutečný stav
DTM ČR (kraje)
Přímá geodetická měření
Povrchová situace
Technická a dopravní infrastruktura
eGovernment



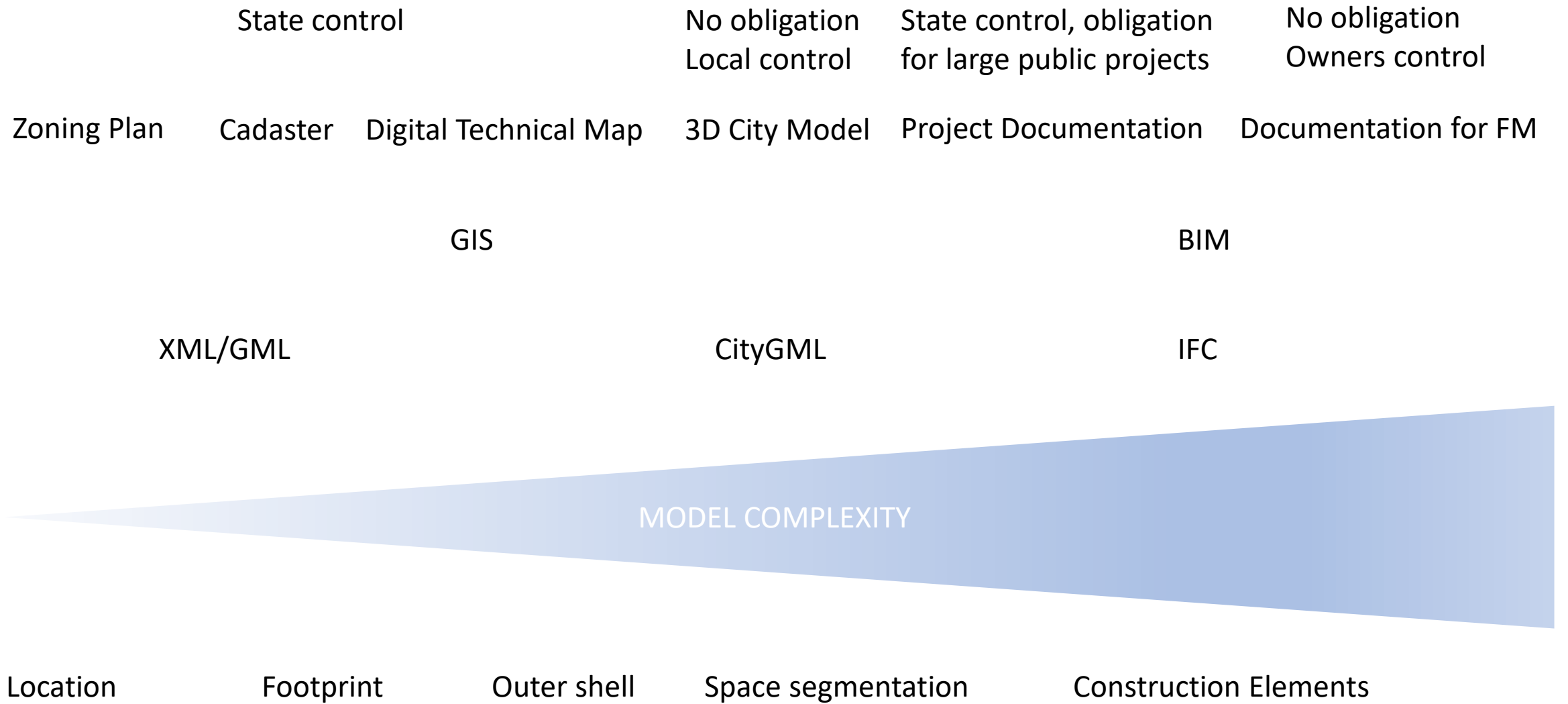
CityGML 3.0 (globální standard)

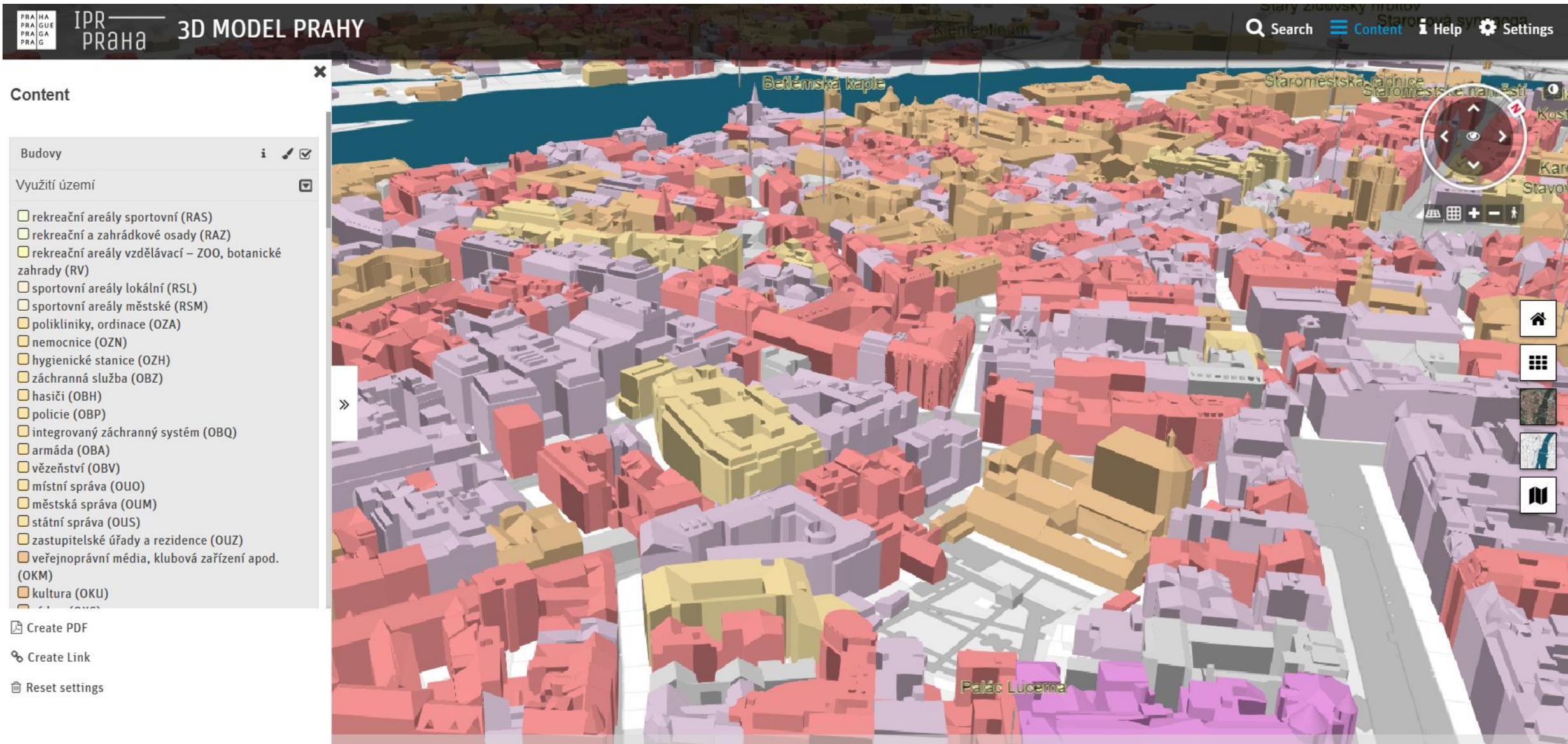
Sémantický objektový model
IPR Praha
„3D technická mapa“
Analýzy
Simulace



IFC (globální standard)

IS pro jednotlivé budovy
Investor
Koncepce BIM 2022 (MPO)
Elektronizace stavebního řízení
Stavebnictví 4.0
eGovernment





CITY 3D MODEL

BUILDING USE

Thank for your attention

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www.geoportalpraha.cz