Guglielmo Pristeri, Salvatore Pappalardo, Daniele Codato, Federico Gianoli, Massimo De Marchi
University of Padova, Department of Civil, Environmental and Architectural Engineering

An Open Multi-User Platform in Support of Urban Development:
The DATA webGIS

RealCORP - 23rd International Conference on Urban Planning and Regional Development in the Information Society
Expanding cities – Diminishing space

4-6 April, 2018       TU Wien, Austria
Developing Abandoned Transurban Areas

- Regional Operative Programme 'Veneto' / European Social Fund 2014-2020
- Dept.s of Civil, Architectural and Environmental Engineering + Industrial Engineering
- 6 research fellows / scientific investigators + 12 operative partner companies
- Goal: designing transformation pilot scenarios for abandoned transurban areas

Luigi Stendardo | Massimo De Marchi | Andrea Giordano | Maria Cristina Lavagnolo | Michelangelo Savino
Guglielmo Pristi | Davide Barbato | Stefanos Antoniadis | Enrico Redetti | Rachele Malesani | Giulia Pettoello
DATA project: 6 topics

- 1. WebGIS and data mining
- 2. Building and land information modeling
- 3. Pilot scenarios design
- 4. Urban planning and feasibility studies
- 5. Urban mining
- 6. Data management and ICT
DATA project: 6 topics

- 1. WebGIS and data mining
- 2. Building and land information modeling
- 3. Pilot scenarios design
- 4. Urban planning and feasibility studies
- 5. Urban mining
- 6. Data management and ICT
It is possible to contain it through *reuse and reactivation* of underused or decommissioned buildings and abandoned or unplanned areas.
An Open Multi-User Platform in Support of Urban Development: The DATA webGIS

Research area: West Padova

STRATEGIES
- multidisciplinary actions
- Use of advanced technologies
- Production of open source knowledge
- Looks towards different possible futures
- Interaction with citizens and stakeholders
- Support to territorial governance
Research area: West Padova
Design scenarios

**ACTIONS**

- Opening enclave spaces to the city
- Creating connections and urban flows
- Bringing green systems to the foreground
Topic #1: WebGIS and data mining

1. Collection/check of **multiscale base data** useful for the project:
   - Aerial photos and historical maps
   - Cadastre and other building maps
   - Social data
   - Environmental data
   - Land use/land cover
   - Transport networks
   - Urban planning maps

2. **Processing and map production** in support of design scenarios

3. Publication and spreading on an **open source webGIS platform**

4. Arrangement of **update and maintenance plans** for the platform

- **Research group**
- **Urban actors**
City-scale map production

Land use/land cover
- Urban fabric
- Industrial areas
- Commercial areas
- Public services
- Infrastructures and plants
- Cult places
- Streets and parkings
- Railways
- Airport
- Landfills, caves, building sites
- Urban green areas
- Agricultural areas
- Woods and semi-natural areas
- Water

Urban development plan
- Restrictions
- Buffer zones
- Railway corridor
- Urban parks
- Services
- Housing
- Transport infrastructures
- Social housing
- Agricultural areas
- Business, commerce, industry
- Historic centre

Built volumes/CI
- Exceeding
- Equivalent
- Lower

Rural areas subject to transformation
- Urbanization
- Conversion to parks and gardens
An Open Multi-User Platform in Support of Urban Development: The DATA webGIS

On field GIS mapping

Detailed field survey through mobile GIS application Qfield

DATA COLLECTED
- Number of dwelling units
- Number of stages
- Maintenance state
- Business activities
- Number of private car places
- Presence of gardens

Collected data were combined to elaborate an attractiveness index.
WebGIS platform: web architecture and functions

GEONODE ARCHITECTURE

WHAT IT IS POSSIBLE TO DO

- Publish vector and raster layers
- Edit graphic styles
- Create maps
- Set up and manage metadata
- Upload documents
- Consult features
- Edit and download data
- Comment and give feedbacks on content quality
WebGIS platform: use and interaction

GEONODE: USER INTERFACE

EXTERNAL USERS ACCESSIBILITY LEVELS

A. Data viewing, interrogation and download
B. Data viewing and interrogation
C. No access to data

USERS’ CATEGORIES

Research group
Public and private stakeholders
Aassociations and active citizenship

Exchange, update and testing
Governance and business intelligence
Consultation and participation

An Open Multi-User Platform in Support of Urban Development: The DATA webGIS
WebGIS platform: map creation and consulting

GeoNode allows to create maps by overlaying two or more layers.

One can insert:
- layers from local database;
- external layers, through wms services.

For all layers and maps it is possible to:
- consult feature attributes
- measure distances
- write queries
- view metadata.

Maps on DATA platform include:
- land cover
- Intervention Plan
- mobility and transportation
- environment and related risks
WebGIS platform: future development

- Integration with further data and analysis
- Public release of the platform and spreading campaign
  - Platform update and maintenance
  - Presentation of the project's final results
- Integration into a connected management system
- Future maintenance plans (beyond DATA)
Thank you for listening

Guglielmo Pristeri
guglielmo.pristeri@unipd.it