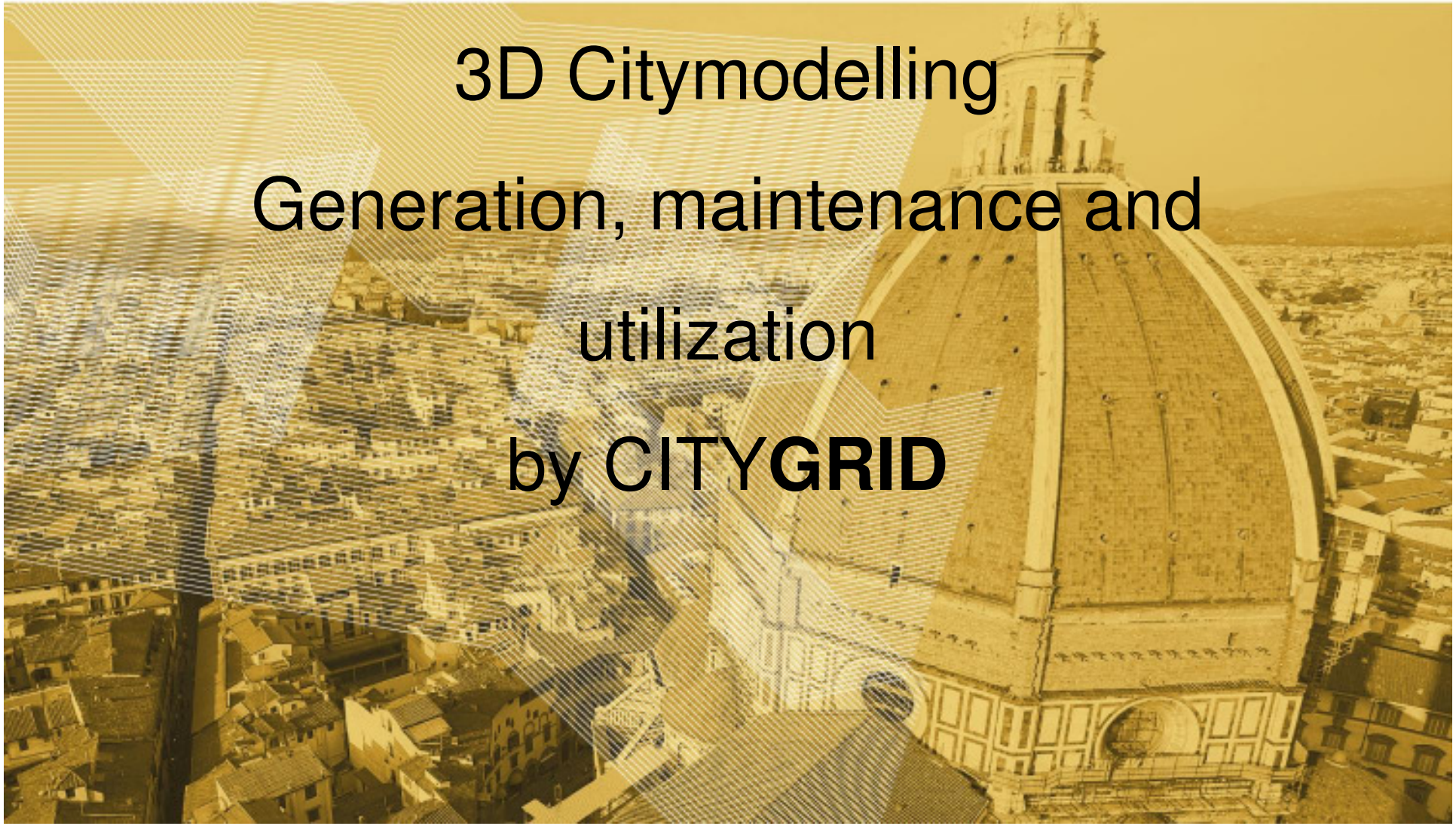
CITYGRID

The whole city in 3D



3D Citymodelling

Generation, maintenance and utilization

by CITY**GRID**

Practical Use

CITYGRID

The whole city in 3D

- Noise protection
- Urban planning
- Green space planning
- Traffic
- Pipework plan
- Public transport
- Fire brigade
- Monument protection
- Animal protection
- Tourism marketing
- Etc.

Noise Protection

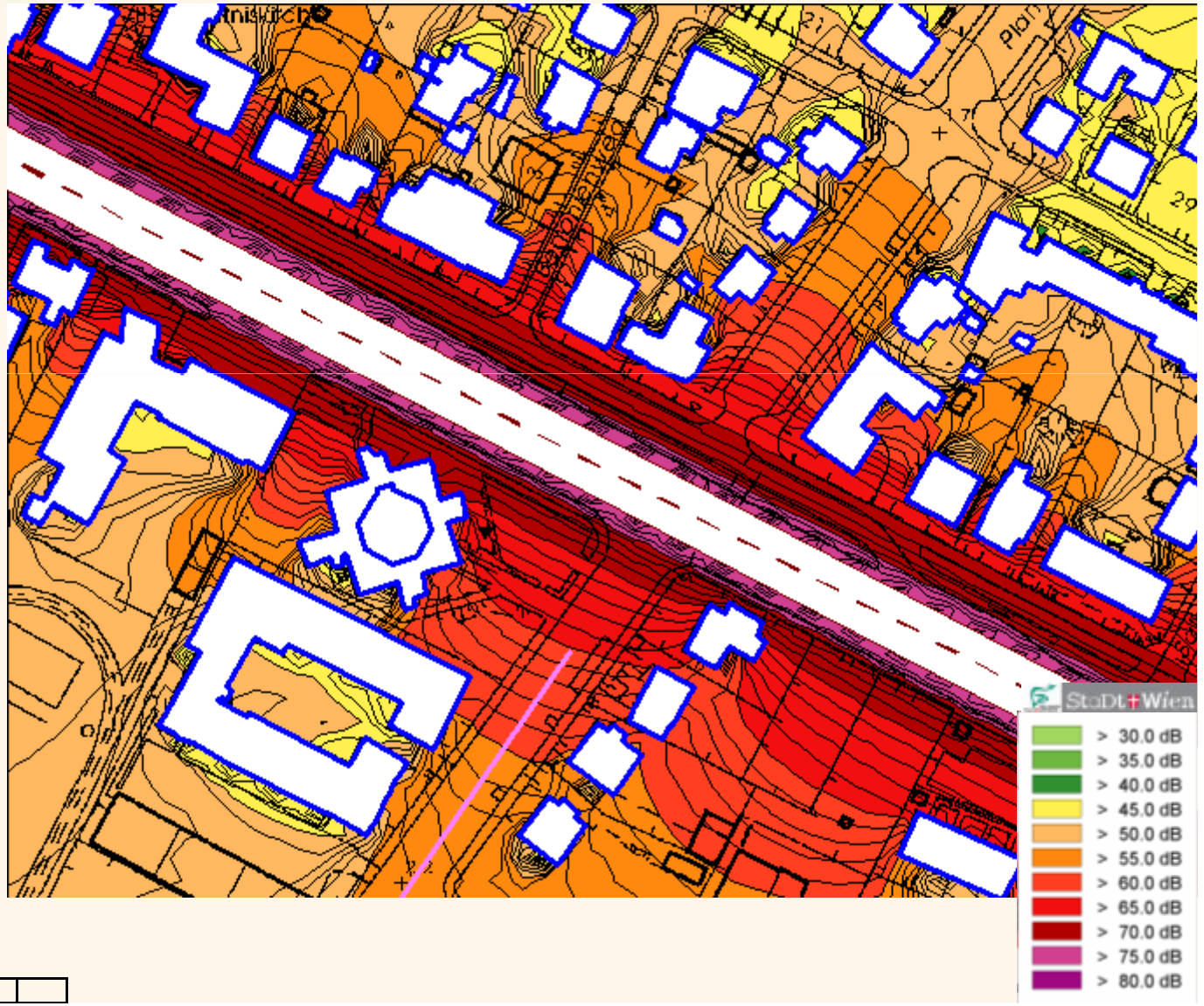
CITYGRID

The whole city in 3D

Basic model for simulation of noise propagation

Noise protection departments are responsible for documenting existing noise pollution in the form of noise maps and for simulating the effect of any building and protection measures.

Topography and buildings affect noise propagation. A 3D city model is therefore essential for calculating noise pollution in a city.



Noise Protection

CITYGRID

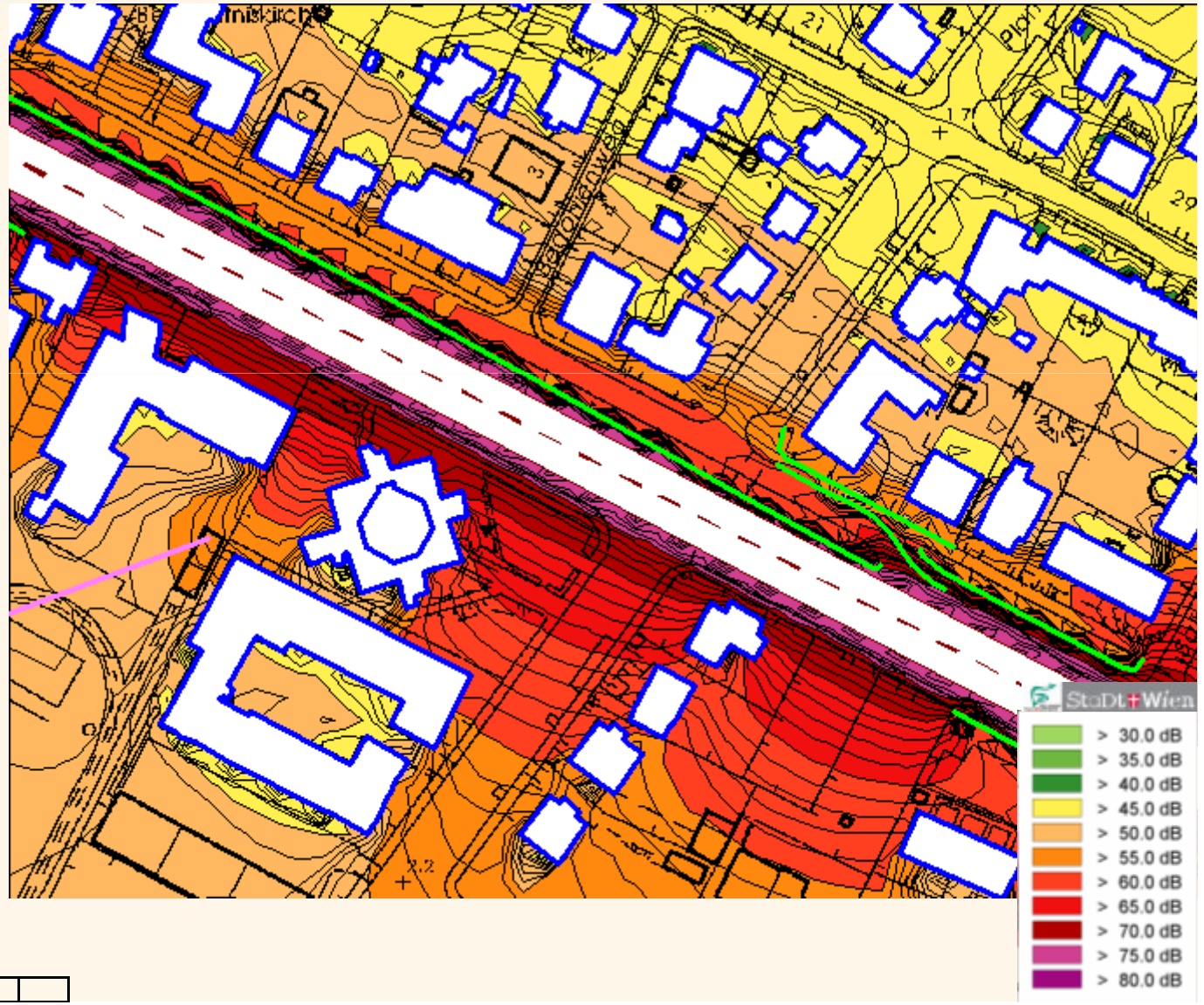
The whole city in 3D

Planning of noise protection measures based upon noise map

For an average noise protection department project, an existing 3D city model saves more than one week's worth of work, which would otherwise be invested in an improvised 3D model.

Expert systems such as Immi and Soundplan are used to calculate noise. These systems can access the city model via the City**GRID** GIS interface.

City**GRID** Modules:
Manager + GIS Interface



Noise Protection

CITYGRID

The whole city in 3D

Window positioning for detailed simulation of noise pollution

For detailed simulation of noise pollution of residents, their living areas have to be regarded. For that reason, selected window positions are required as reference points for simulating noise pollution.

The advantage of the city model is that these window positions can be calculated efficiently based on the façade texture. This simplifies work considerably, especially in multi-storey buildings.

City**GRID** Modules:
Manager, Planner

Traffic

Simulation of road & railway construction projects

CITYGRID

The whole city in 3D

Large road or railway construction projects in populated areas generally trigger heated discussions with affected residents. The aim of project management is to find an acceptable consensus with the residents using the approval procedure required by law.

Visualisations that can be easily understood by the lay person are essential for this purpose. Residents consider realistic interactive visualisations particularly believable, as they can examine individual standpoints and lines of sites flexibly.

Traffic

CITYGRID

The whole city in 3D

Simulation of road & railway construction projects

CityGRID enables an affordable and fast visualisation, because the building models can also be used to simulate future noise pollution.

City**GRID** Modules:
Planner, Explorer

Traffic

Simulation of road & railway construction projects

CITYGRID

The whole city in 3D

Videos derived from 3d Simulation by City**GRID** Explorer make general peresntation more attractive, easier understandable

City**GRID** Modules:
Planner, Explorer

Traffic

Simulation of road & railway construction projects

CITYGRID

The whole city in 3D

CityGRID Explorer installations using large screen enable optimum discussion with people, only there they can understand what the planners are talking about

City**GRID** Modules:
Planner, Explorer

Urban planning

Height optimization of projected highrises

CITYGRID

The whole city in 3D

The higher highrises are, the more interesting they are to investors.

When determining the height of projected buildings, city planners try to avoid detracting from sensitive parts of the city.

The aim is to find the optimum height for the project site at which the highrise will not be visible from critical points in the city.

This optimisation is practically impossible using conventional methods like photo montages, but the 3D city model can solve this task in just a few hours…

Urban planning

Height optimization of projected highrises

CITYGRID

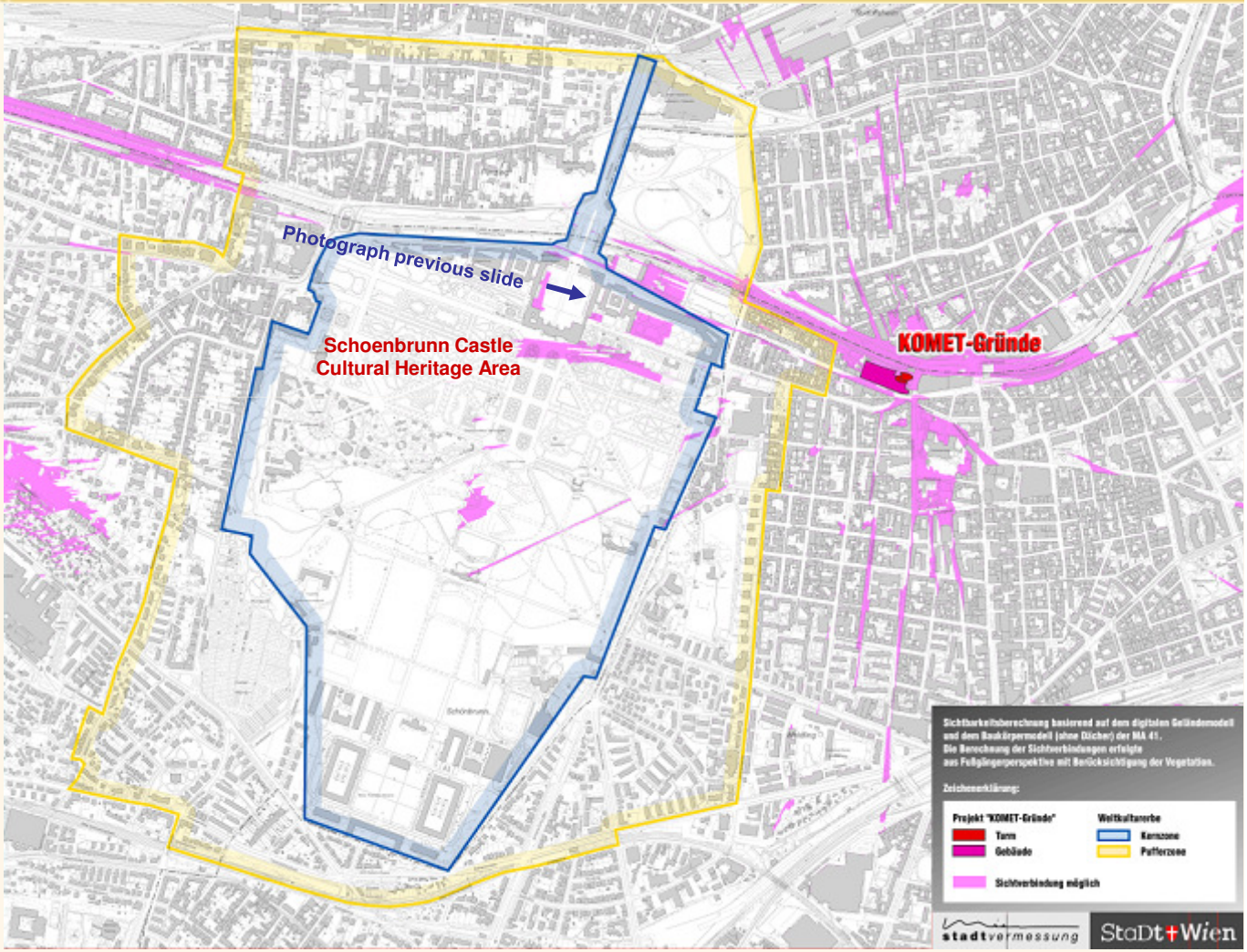
The whole city in 3D

For efficient height optimization, City**GRID** converts the city model into a GIS-compatible grid height model. This model can then be used with suitable modules such as ArcGIS – 3D Analyst to carry out viewshed analyses.

As a result of the viewshed analysis, all parts of the city where the projected highrise would be visible to pedestrians are shown in pink.

This viewshed analysis may be carried out repeatedly, reducing the highrise's height step by step until the pink areas have disappeared at critical sites.

City**GRID** Modules:
Manager + GIS Interface



Urban planning, project development

CITYGRID

The whole city in 3D

3D visualisation for public relations - “existing setting”

Once project developers decide for a particular planning variant, a consensus must be reached with authorities and residents.

A realistic and easy-to-understand 3D visualisation can help parties reach a consensus quickly in particularly sensitive city zones.

Surrounding buildings are obtained from the city model. 3D laser scanning can be used to show roads and vegetation correctly and efficiently.

City**GRID** Modules:
Planner

Urban planning, project development

CITYGRID

The whole city in 3D

3D visualisation for public relations - “after construction”

Interactive 3D visualisation is considered more believable than photo montages, as the viewer can select any standpoint and line of sight.

The viewer may switch different versions of the project and evaluate the impact onto the surrounding area.

City**GRID** Modules:
Explorer

VIDEO

Urban planning

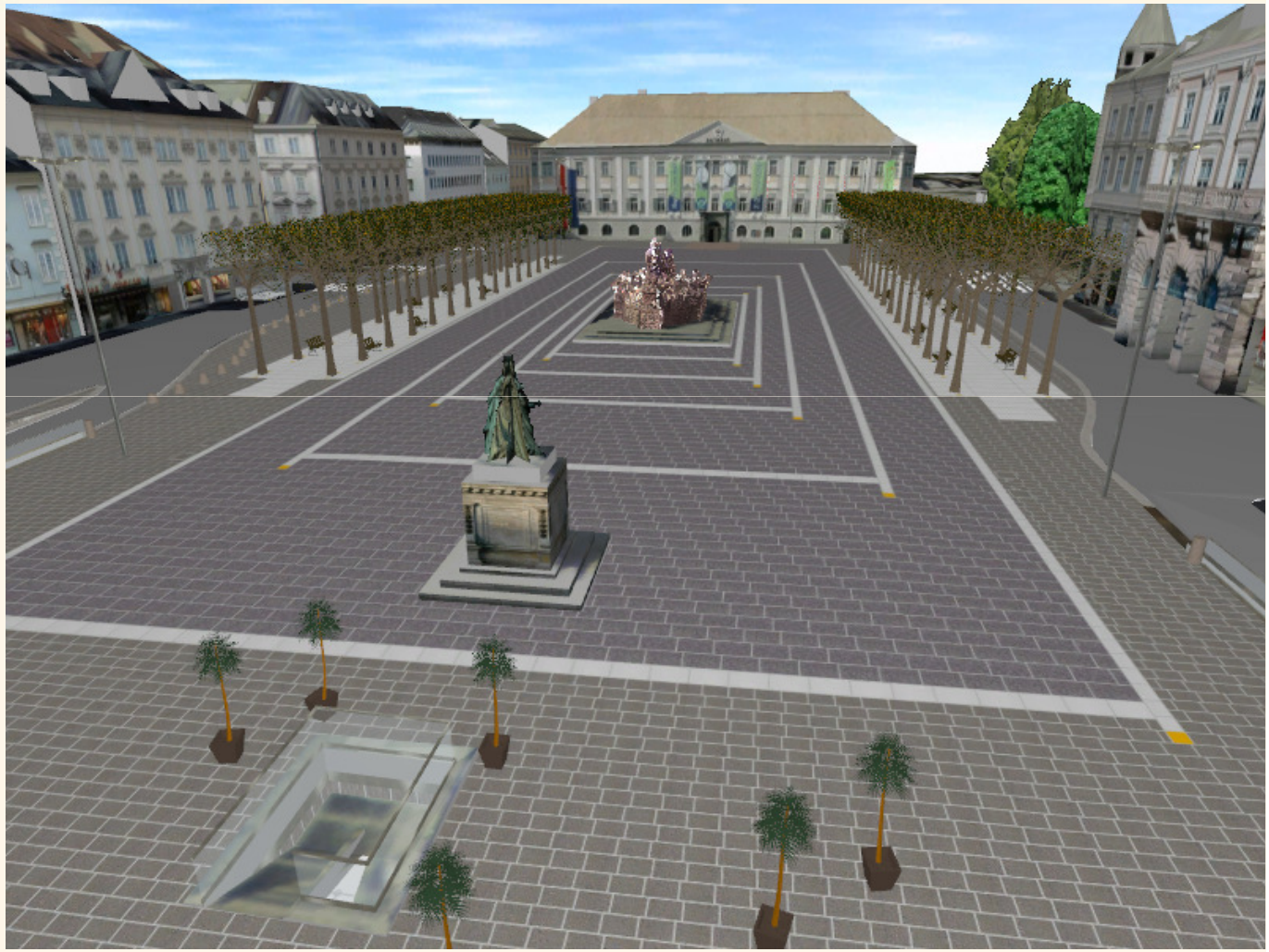
Improvement and redesign of squares

CITYGRID

The whole city in 3D

The attraction of public squares may be increased by new tiling and new arrangement of plants and street furniture.

A 3d simulation which considers the surrounding buildings helps to improve the quality of planning.



City**GRID** Modules:
Planner, Explorer

Green space planning

Rearrangement of plants

CITYGRID

The whole city in 3D

At prominent urban areas, the existing situation has to be regarded carefully by the planning process.

The current vegetation may be recorded efficiently by 3d Laserscanning. Embedding this pointcloud data into the 3d citymodel provides the initial model which is required for planning a new arrangement of plants at critical urban areas.

City**GRID** Modules:
Planner, Explorer

Green space planning

Rearrangement of plants

CITYGRID

The whole city in 3D

Rough planning of new arrangement of plants is usually done in 2d, using CAD or GIS, whereas fine tuning has to be done in 3d at critical areas.

A realistic 3d simulation is based upon a plant library derived from local vegetation. Position, size and type of each individual plant are obtained automatically from CAD or GIS.

This way, optional arrangements of plants may be simulated easily within the 3d citymodel.

City**GRID** Modules:
Planner, Explorer

VIDEO

Pipework Plan

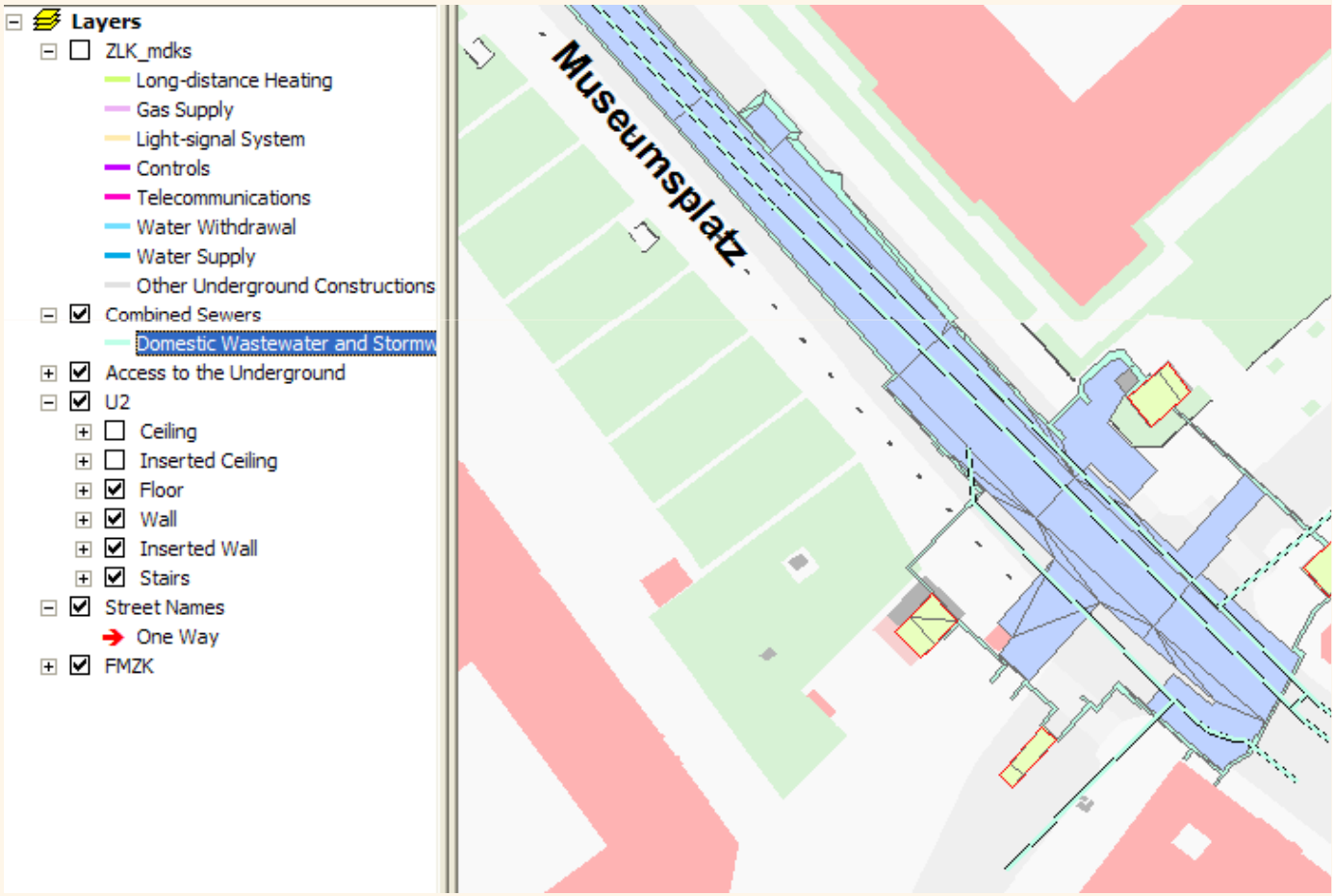
2D illustration of underground railway structure

CITYGRID

The whole city in 3D

Additional underground pipes must be planned especially carefully in city centres. The countless existing pipes limit the available space, and traffic obstructions due to excavation should be kept to a minimum.

Exact information on underground structures saves considerable time and money, especially when pipes must cross underground railway lines.



Pipework Plan

3D illustration of underground railway structure including pipework plan

CITYGRID

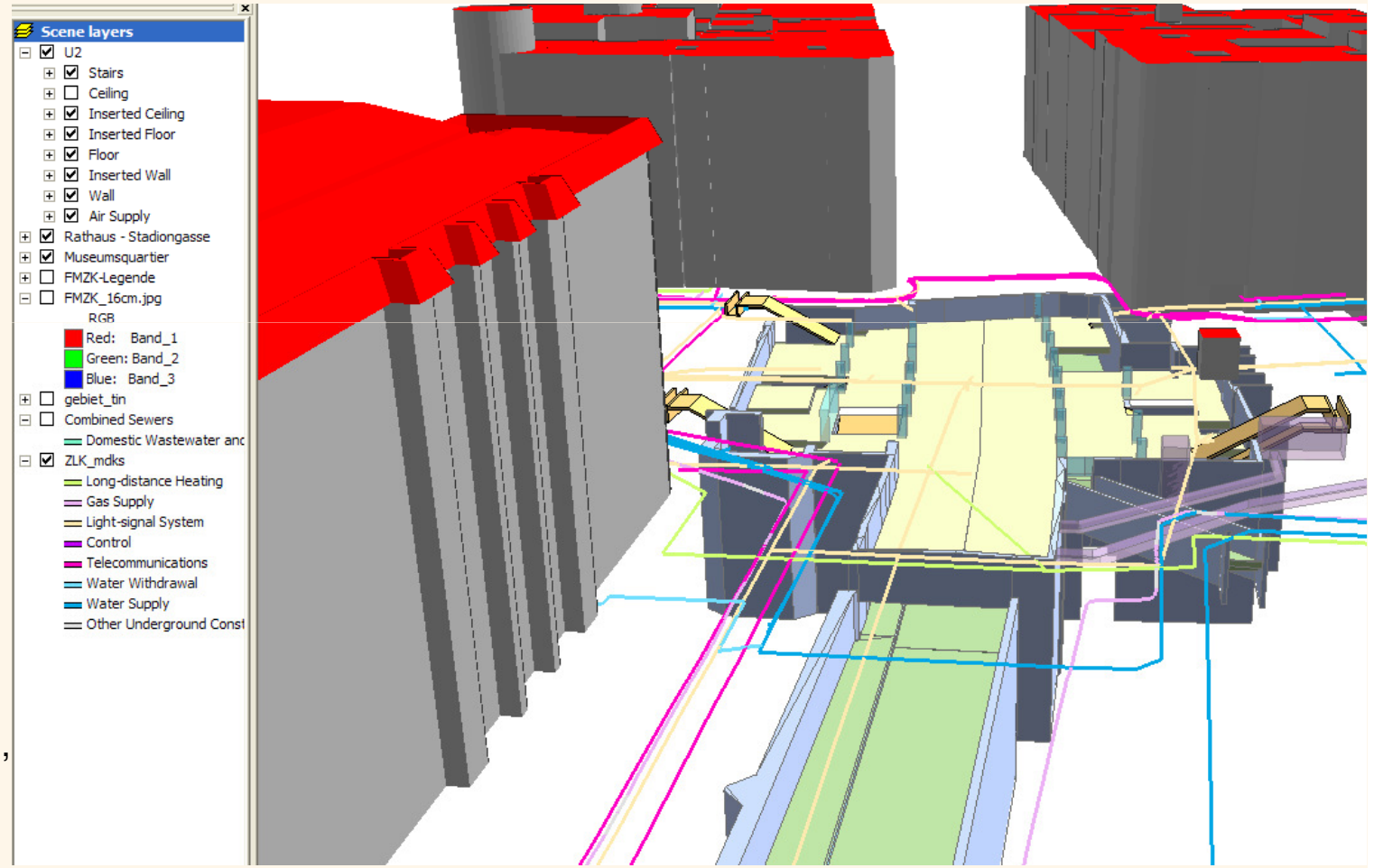
The whole city in 3D

CityGRID can show underground structures along with the city model in the pipework plan.

The ArcGIS ArcScene or ArcGlobe modules can even show them in 3D.

CityGRID line-based 3D modelling lets underground railway models be created using structural plans.

City**GRID** Modules: Manager+GIS Interface, Modeler



VIDEO

Pipework Plan

Integration of underground buildings

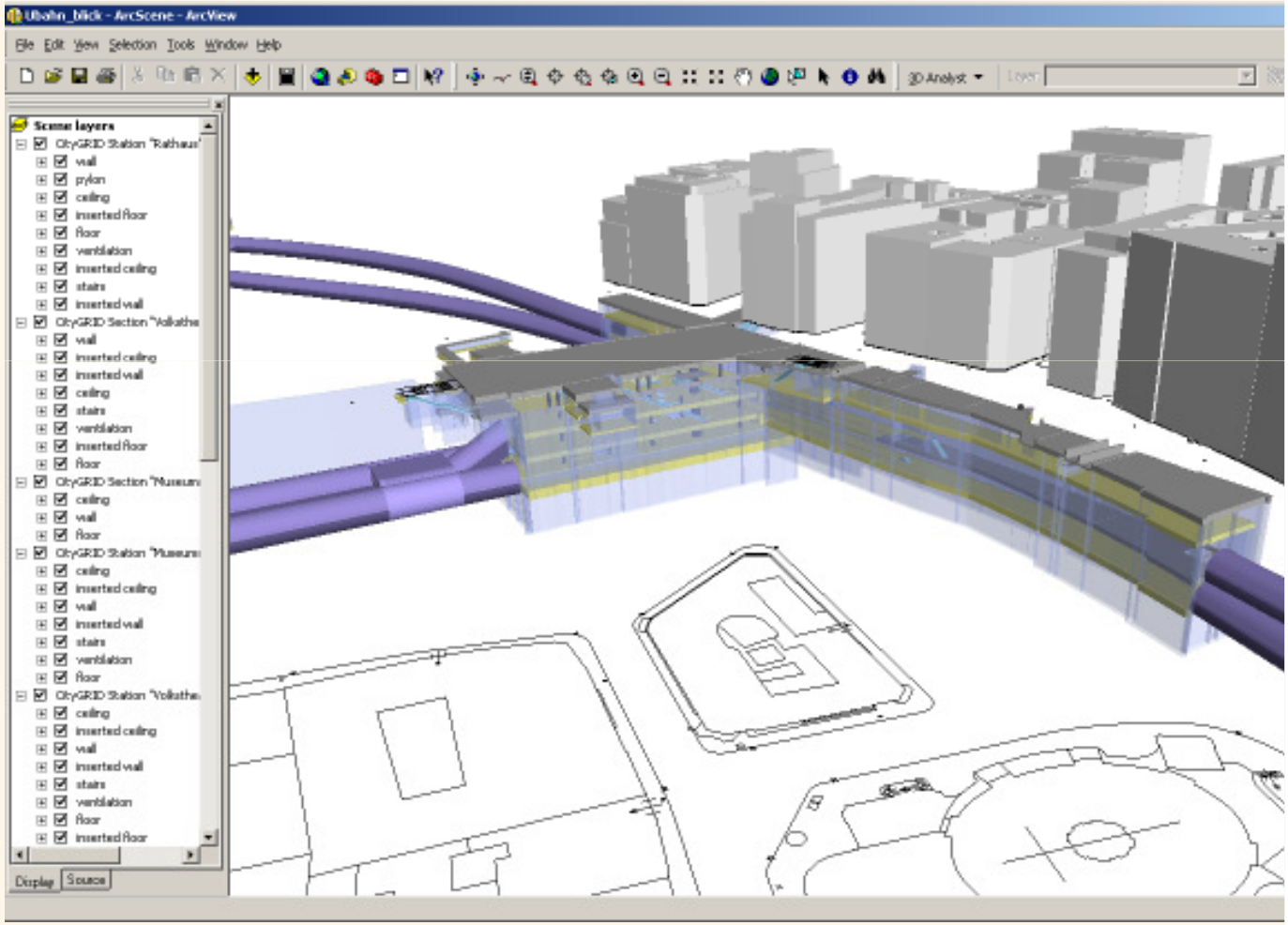
CITYGRID

The whole city in 3D

3D modelling is carried out by CityGRID system using digitized structure lines of subterranean facilities.

Relevant elements in the interior of the underground train facilities can also be modelled.

The underground train models are saved in a 3d database and can be presented two-dimensionally in ArcMap or three-dimensionally in ArcScene/ArcGlobe.



City**GRID** Modules: Manager+GIS Interface, Modeler

VIDEO

Tourism

Web-based visualisation of landmarks using Google Earth

CITYGRID

The whole city in 3D

Google Earth provides a powerful platform for web based tourism marketing.

With the help of the CityGRID elements of the city model may be exported in KML format and linked to Google Earth.

City**GRID** Modules:
Manager

VIDEO

Animal protection

Protection of coach horses against sunlight

CITYGRID

The whole city in 3D

“Fiaker” horse coaches rank among the most famous tourist attractions of Vienna. The city has established special parking sites for coaches waiting for the next tour.

For better protection of waiting horses, the daily sunshine duration at their parking sites has been analyzed with the help of the 3d city model.

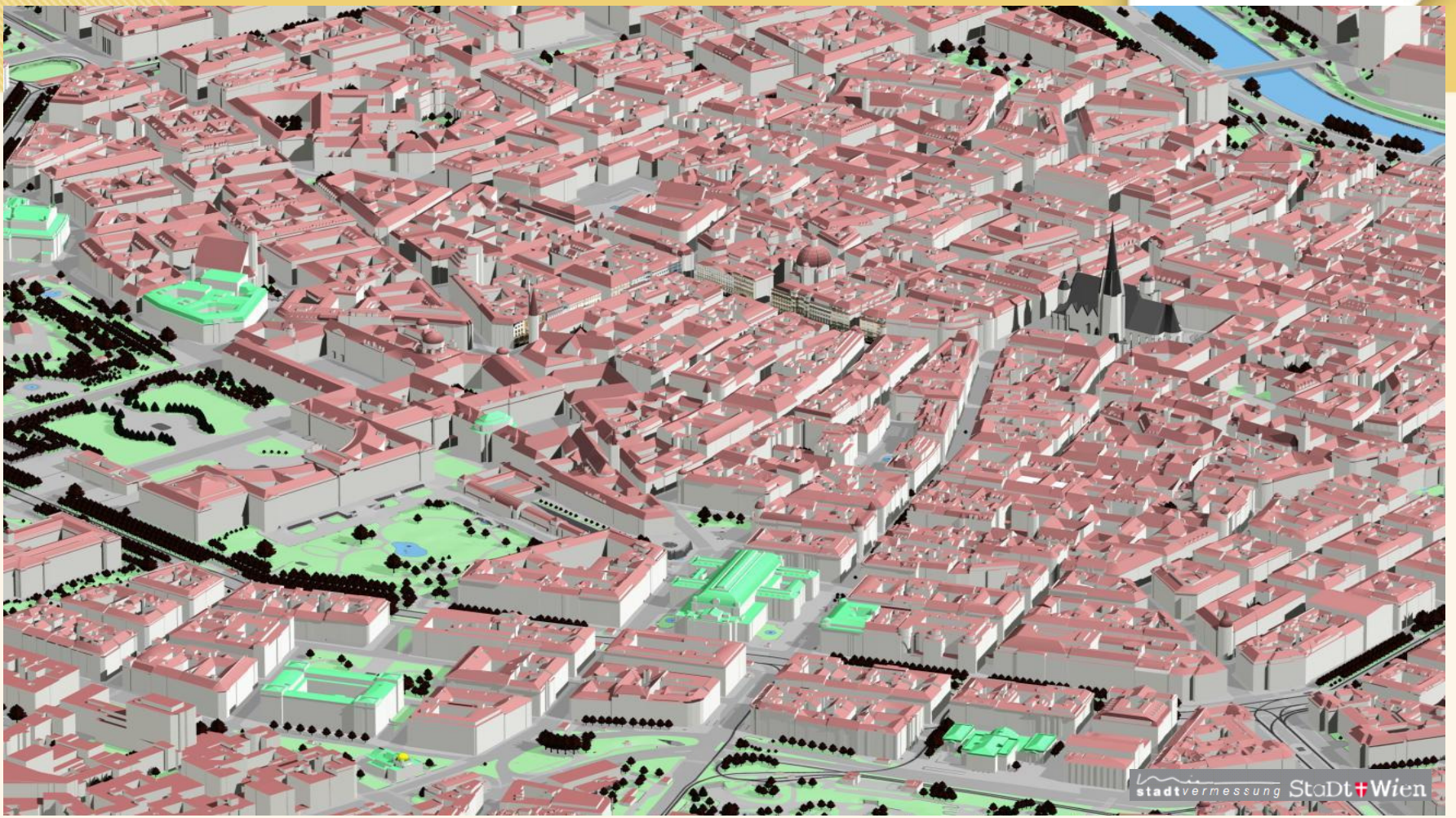
Solar sails will be erected at critical parking sites which have been evaluated by this analysis.

City**GRID** Modules:
Planner

VIDEO

3D City Model of Vienna

CITYGRID



www.stadtvermessung.wien.at www.citygrid.at