

From GIS/OpenData to BIM to openBIM to ...

GIS+=BIM Plugin for Autodesk Revit provides a solution that enables and simplifies the flow of data from GIS to BIM accompanied by **OV.iewerBIM** Viewer of IFC and JSON files exported from Revit

This project has taken into account the document ' ISO/DTR 23262 GIS/BIM Interoperability ' and the work of buildingSMART International (bSI) and the Open Geospatial Consortium (OGC).

The **BIM methodology** will have a significant acceleration in Italy in the coming months... the **obligation** for Contracting Authorities to issue BIM tenders above EUR 1 million from 1 January 2025 will give a strong acceleration in this area to the entire construction sector. This will also affect the number of small firms and individual professionals who have been refractory or wait-and-see approaches to BIM implementation until now.

GIS has been widespread in public and private organisations for many years but is 'really' used by a small niche of specialised professionals and this does not allow the real potential, advantages and synergies to be fully realised for the majority of stakeholders in the Construction and Environmental sectors.

Our research, and **challenge**, started precisely with the objective of developing a software platform that would unite the two worlds of **GIS** and **BIM** in an operational way, with the **counter-current** choice of bringing **GIS "inside" BIM**.

Our vision for the future is instead to **design in BIM**, therefore with much finer detail, **also with the most relevant GIS data and information** supporting the **contextualisation of the project in the site**, effectively activating the **synergy** of the two worlds down to the urban scale (**Smart City**).

HOW: By integrating **GIS and BIM** through a "**simplified GIS**" plugin that operates directly "**inside**" **Autodesk Revit**;

WHY: It will allow a wider audience of professionals and stakeholders to use and benefit from a structured, homogeneous and reliable **3D model of the geographical and environmental context**, "**certified**" because it comes from OpenData, as a synergic and integrated added value to the BIM project.

WHO: **GIS+=BIM Plugin of Revit**, being **addressed** to the widespread, composite and quantitatively numerous "**base**" of small and medium-sized technical offices, public bodies, construction companies, can have in Italy a very important potential user base and also exert an action of diffusion, therefore "**democratisation**", of the digitisation of the Environment and Construction.

a. ECONOMIC IMPACT:

The **GIS+=BIM Plugin of Revit** does not require specific training and advanced specialisation on GIS from the user and this is the first economic advantage because what is needed is already within it.

The **positive economic impact** is both in the increase in **quality and design control** of the professionals who will use it, and from the point of view of the enlargement of the audience of professionals, who will be stimulated and more interested in taking advantage of the opportunities that the two domains, **GIS and BIM**, offer. Furthermore, the result of a **qualitatively superior project** and customer satisfaction will allow professionals to obtain greater economic recognition.

b. SUSTAINABILITY:

Our **GIS+=BIM Plugin for Revit** focuses on the synergy, functionality, effectiveness and quality of **GIS and BIM together**, in particular of more relevant GIS data and information to support the **contextualisation** of the project in the site for **choices aimed** at guaranteeing design quality, also with a view to **speeding up the construction time** and consequent **economic savings**. Undoubtedly, the **Sustainability** aspect of the projects benefits enormously already **in the early stage** in the assessment of environmental, microclimatic and social impacts and repercussions for **conscious choices** of the various project hypotheses.

Sustainability and **innovation**, through the '*simplification*' of the complex integration between **GIS and BIM** were precisely the cornerstones of our **GIS+=BIM Plugin project**.

c. INNOVATIVE CHARACTER:

The current locally installable Beta Release (license for developers) of **GIS+=BIM Plugin for Revit** is the **first IT tool in the world** that starting from **GIS/OpenData** allows to:

- 1 - **import** into **Autodesk Revit**, selectively, "**all**" the information contained in **GIS** files;
- 2 - once imported what we need with all useful data and information, these **can be implemented, modified** and **adapted** to the architectural or infrastructural project **in Revit**;
- 3 - **export** the project in **interoperable IFC format** to continue working with other BIM authoring software or **export** the project in **IFC** or **JSON format** to share with colleagues and clients in our specially created **OV.iewerBIM**.

Geographical and spatial context information should as far as possible come from a **single homogeneous source** of structured and verified **GIS data** such as OpenData in order not to be subject to information ambiguities.

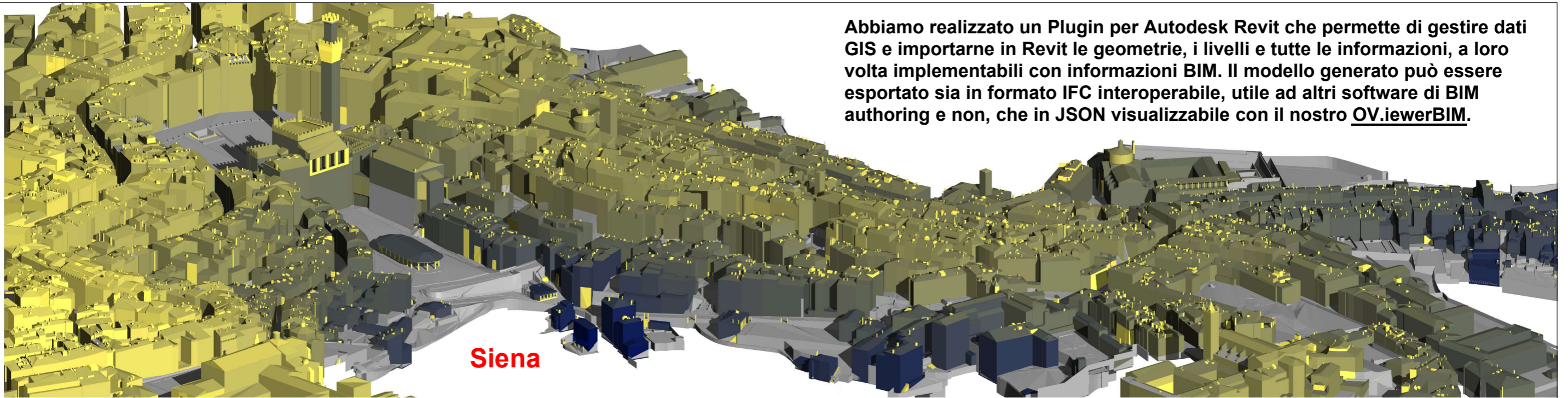
Our **GIS+=BIM Plugin for Revit** is aimed at all Construction Professionals and Contracting Authorities who by discipline and expertise are accustomed to working at **the scale of architectural detailing** even in **urban and territorial scale** contexts (such as now for linear infrastructure works and, in the near future, with **3D BIM Urban Planning** and/or **3D Cadastre** of a **Smart City** to improve standards and services to citizens).

GIS+=BIM Plugin in Revit helps unleash the **unlimited potential of GIS/OpenData, BIM and openBIM integration** in a qualified and qualifying virtuous circle.

[Link GIS+=BIM](#)

[Link OV.iewerBIM](#)





Abbiamo realizzato un Plugin per Autodesk Revit che permette di gestire dati GIS e importarne in Revit le geometrie, i livelli e tutte le informazioni, a loro volta implementabili con informazioni BIM. Il modello generato può essere esportato sia in formato IFC interoperabile, utile ad altri software di BIM authoring e non, che in JSON visualizzabile con il nostro OV.iewerBIM.

Da GIS Open Data a openBIM passando da Revit

From GIS Open Data to openBIM via Revit

Abbiamo costruito un "Ponte" tra Gis e BIM utilizzando Dati "open GIS" elaborati con la nostra piattaforma software ed il supporto di "servizi" commerciali (ESRI® e Autodesk®) per poi essere interscambiati come "open BIM" con IFC bSMART®.

We built a "Bridge" between GIS and BIM using "open GIS" data processed with our software platform and the support of commercial "services" (ESRI® and Autodesk®) and then interchanged as "open BIM" with IFC bSMART®.



E' possibile importare vari formati di dati, da SHP a GEOPKG e RASTER

It is possible to import various data formats, from SHP to GEOPKG and RASTER



Fonte di dati da : <https://www.regione.toscana.it/>

Data source from : <https://www.regione.toscana.it/>

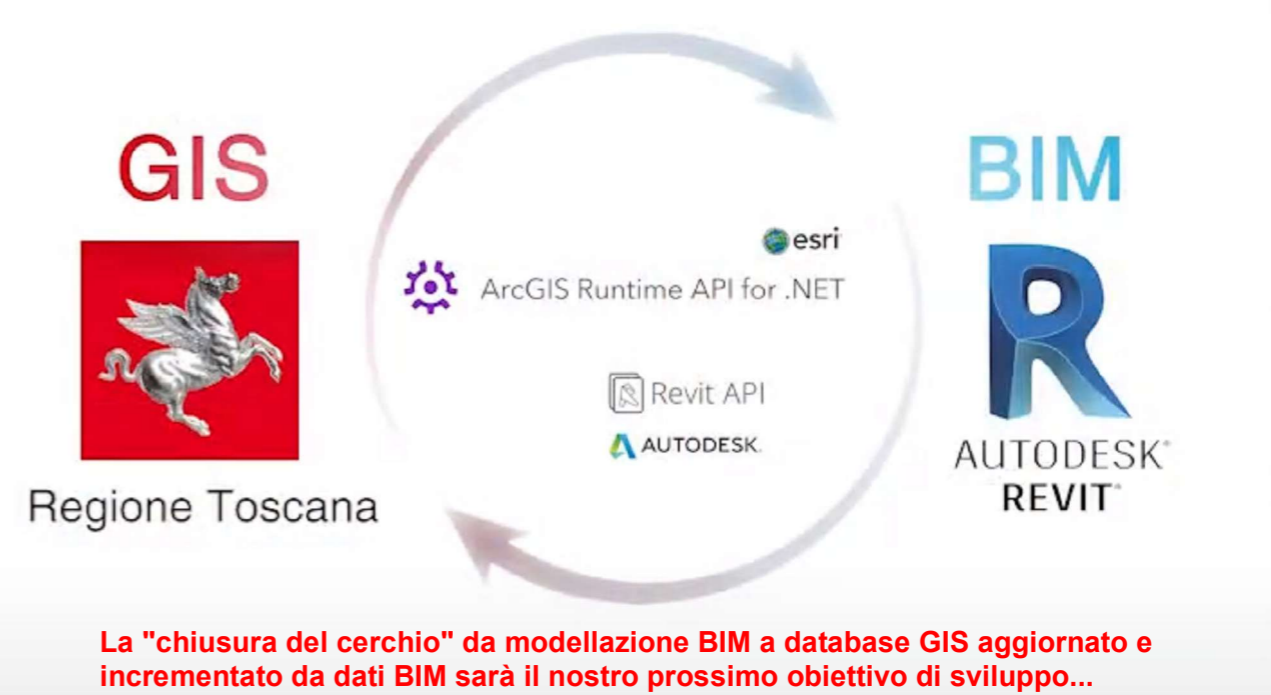
LINK a Video: Plugin di Revit

LINK a Video: Viewer Json

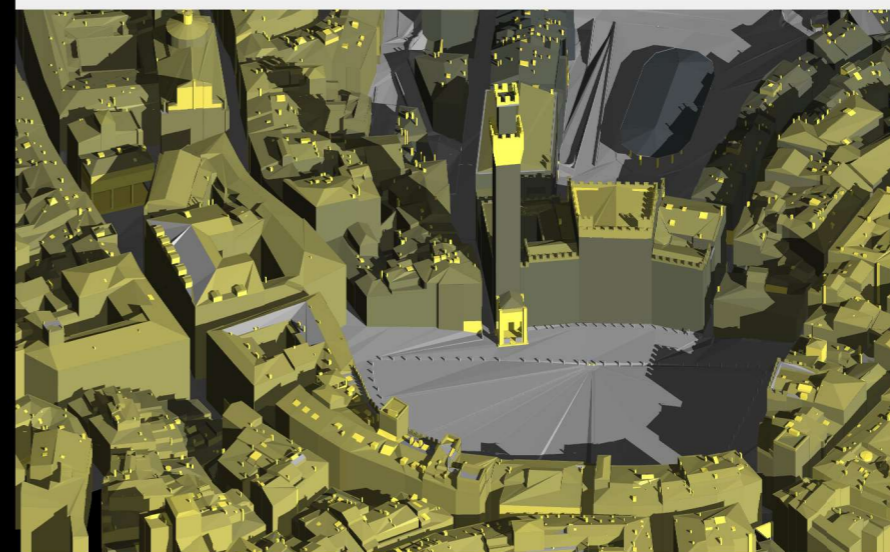
GIS+=BIM
OV.iewerBIM



Database GIS
1:500 del
Centro Storico



La "chiusura del cerchio" da modellazione BIM a database GIS aggiornato e incrementato da dati BIM sarà il nostro prossimo obiettivo di sviluppo...



daniele@ravagnistudio.it

OV
officina
_virtuale

Servizi Digitali Avanzati
Advanced Digital Services



L'elenco delle località è preimpostato con alcune città italiane come Siena, Firenze, Roma, ecc. Selezionando una città ed eseguendo una ricerca, la posizione del progetto Revit corrente sarà ricollocata alle coordinate corrispondenti alla città specificata
 The system has preset some Italian cities, such as "Siena", "Firenze", "Roma" and so on. When we select one of the cities, the project location in Revit will change accordingly

SIENA
Centro Storico

Altre città testate: Roma - Milano - Firenze - Parigi - Manhattan (NY) - Hong Kong - Montalcino - Colle di Val d'Elsa - Porto Ferraio (Isola d'Elba) - Livigno - Arezzo - Grosseto...

E' possibile importare vari formati di dati, da SHP a GEOPKG e RASTER

It is possible to import various data formats, from SHP to GEOPKG and RASTER



Fonte di dati da : <https://www.regione.toscana.it/>

Data source from : <https://www.regione.toscana.it/>

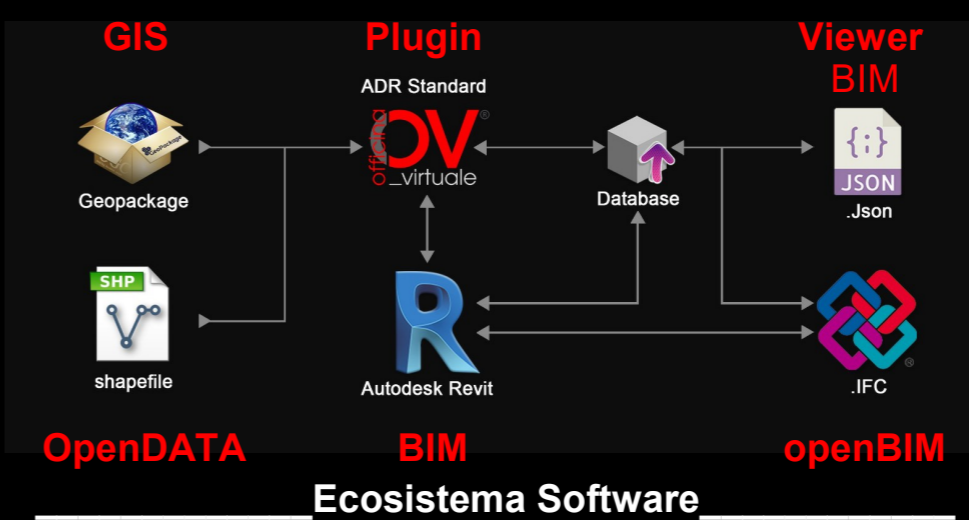
LINK al Video: Plugin di Revit

LINK al Video: Viewer Json

GIS+=BIM
OV.iewerBIM



Database GIS
 1:500 del
 Centro Storico



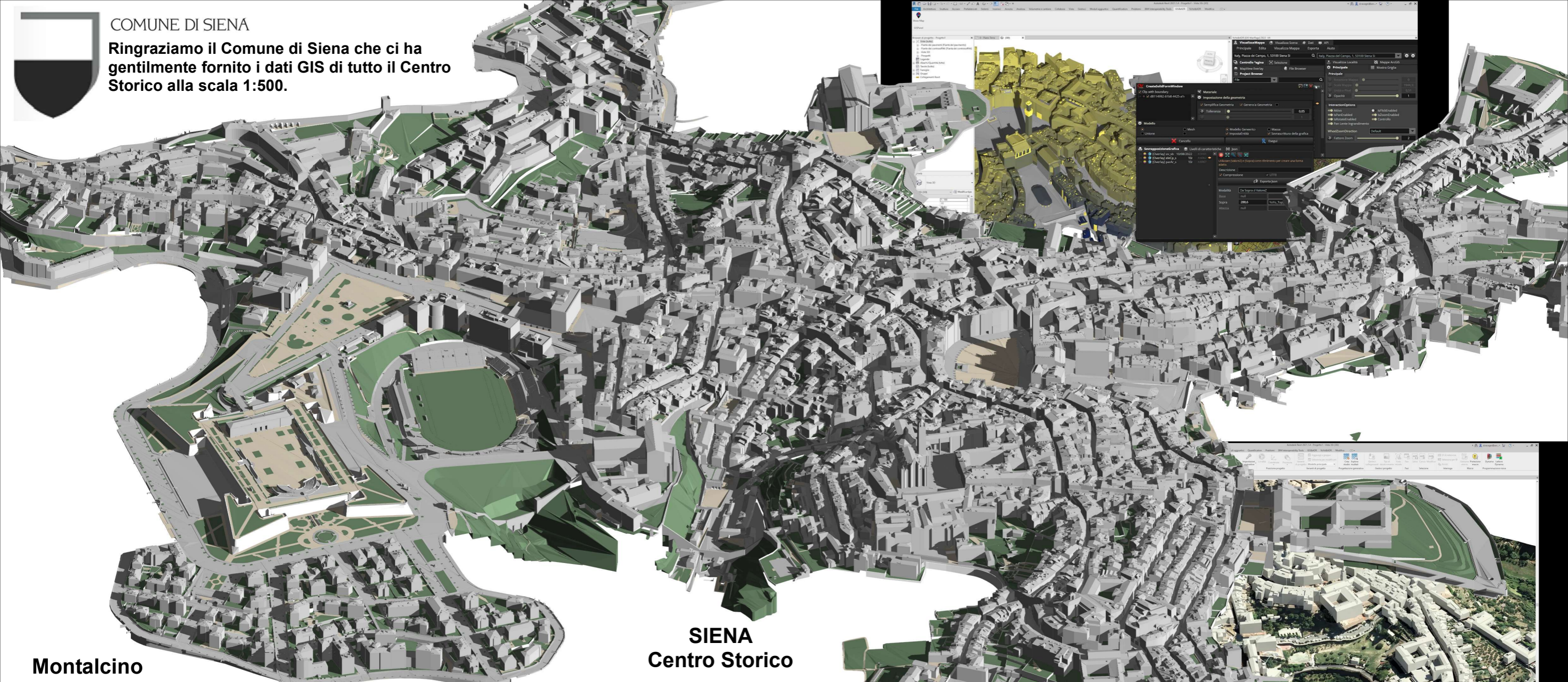
daniele@ravagnistudio.it



Servizi Digitali Avanzati
 Advanced Digital Services

COMUNE DI SIENA

Ringraziamo il Comune di Siena che ci ha gentilmente fornito i dati GIS di tutto il Centro Storico alla scala 1:500.

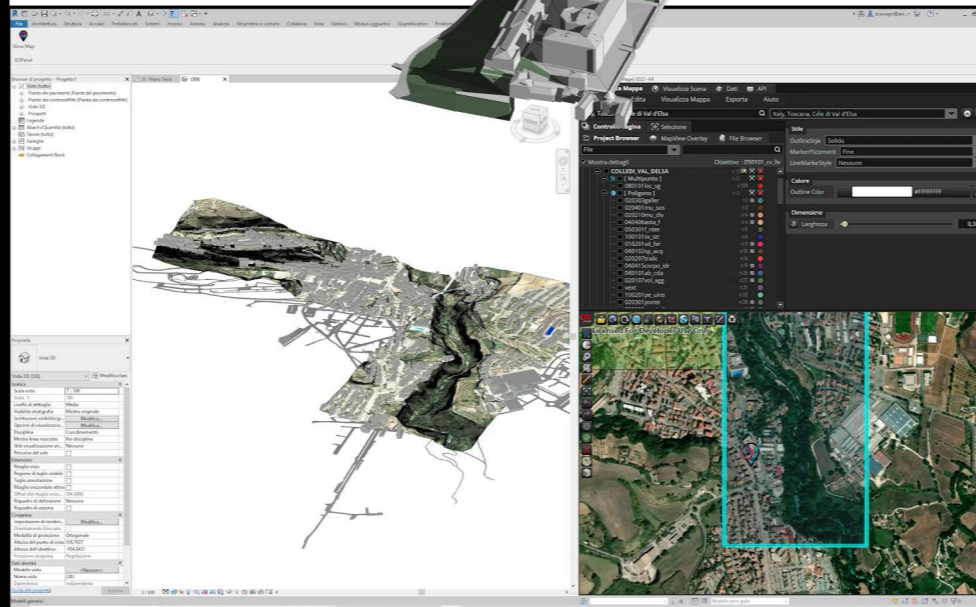
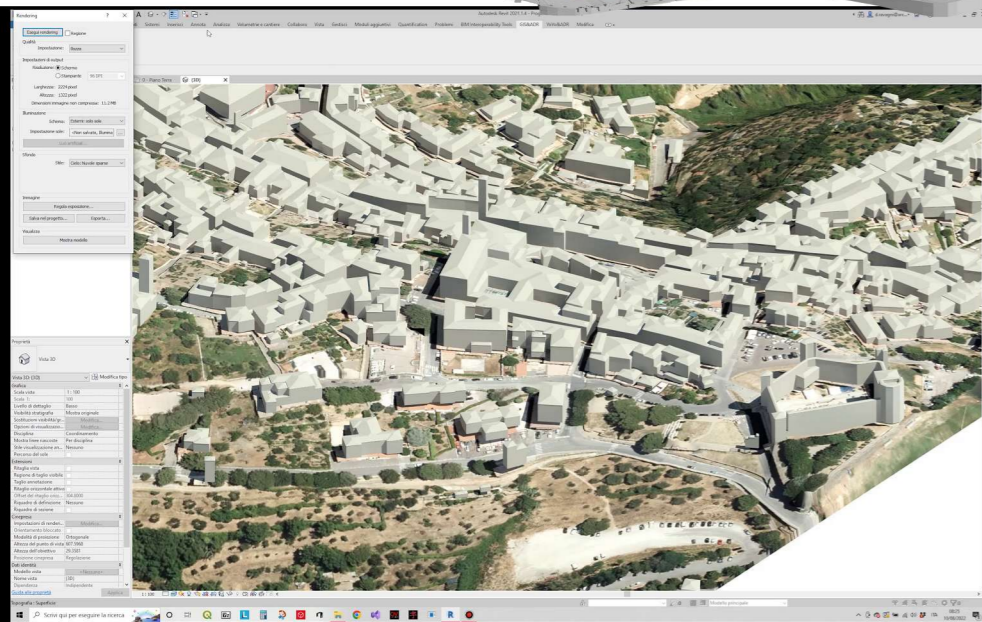


Montalcino

SIENA
Centro Storico

Colle di Val d'Elsa

Immagini tratte dal Video del Plugin di Revit GIS+=BIM



LINK al Video: [Plugin di Revit](#)

[GIS+=BIM](#)

LINK al Video: [Viewer Json](#)

[OV.iowerBIM](#)

officina DV virtuale

daniele@ravagnistudio.it

14/08/2022 19:11:58