

Draining passing traffic from residential areas

The new road between the southern bypass of Vicenza and the Arcugnano industrial area

NET Engineering curated the Technical Economic Feasibility Project and **Final Design, developed using BIM**, for the creation of the new road connection between the Tangenziale Sud (southern bypass) of Vicenza and the ordinary road network of the municipalities of Arcugnano and Altavilla in the province of Vicenza. In detail, the work is localised south of the A4 motorway, in the area between the Casello of Vicenza Ovest (West Vicenza Toll Booth) and the northern extremities of the Berici Mountains. The aim of the project is the rationalisation and improvement of the provincial and municipal road networks around the A4 motorway-Tangenziale Sud, Vicenza urban roads and the Strada Provinciale 106 della Pilla (Pilla Provincial Road 106) to the south.

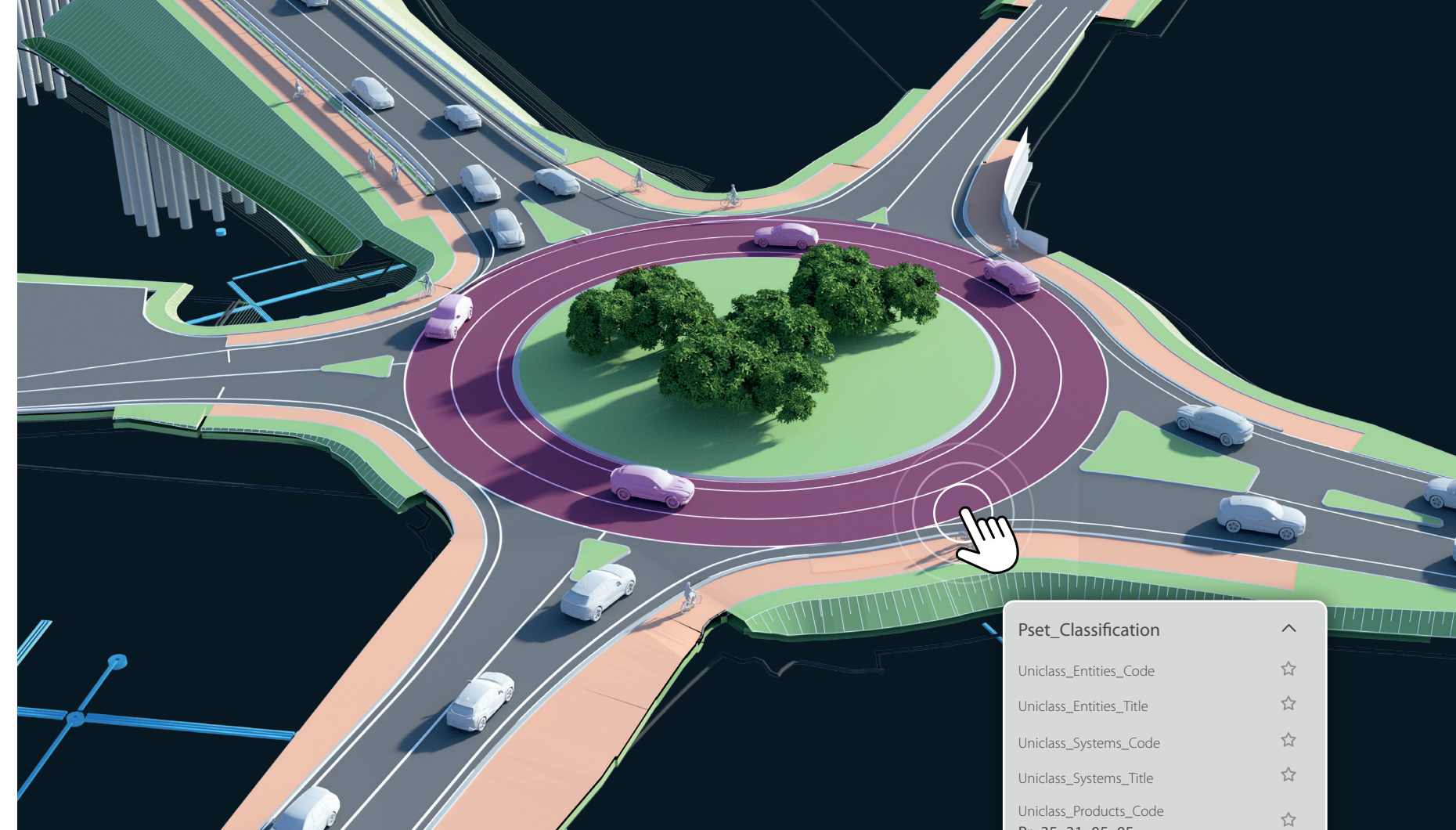
The new infrastructure is intended to 'drain' consistent traffic flows that currently cross densely urbanised areas, channelling them outside the built-up residential areas with a route that extends partly in the West Vicenza service station and partly through the Arcugnano manufacturing area, where redevelopment and completion of the existing road network is planned.

Overall, **the operation was designed to ensure adequate safety standards for the role assigned to the new road connection while containing the land take as far as possible and minimising the environmental impact** associated with the construction of the planned new works. The new road layout and the technical features of the planned infrastructure will thus bring **significant benefits both for safety and the reduction of pollution (acoustic and atmospheric) for the resident population with the resulting appreciable advantages for the area crossed and road users.**

The planned system originates from the roads in the West Vicenza Motorway Toll Booth car park and ends on the Pilla Provincial Road, setting out the implementation of safety measures for the existing local road network, for an overall length of about 2.6 km.

The main operation concerns the construction of the connection between the West Vicenza Motorway Toll Booth and the Sant'Agostino industrial area (about 970 m), ensuring continuity in the traffic flow from the motorway to the manufacturing area. In addition, redevelopment aimed at improving the safety of vehicle, cycle and pedestrian circulation and stopping along the main road in the industrial area, with special attention to the circulation and manoeuvre needs of heavy vehicles, is planned.

Both drafting the Technical Economic Feasibility Project and the subsequent Final Design stage **involved the local administrations and bodies managing the area**, which contributed to the assessment of the different proposals and finding the one considered preferable in terms of urban planning and environmental function.



1. View of the infrastructure model and reading of the Pset_Parameters attributed to each modeled element

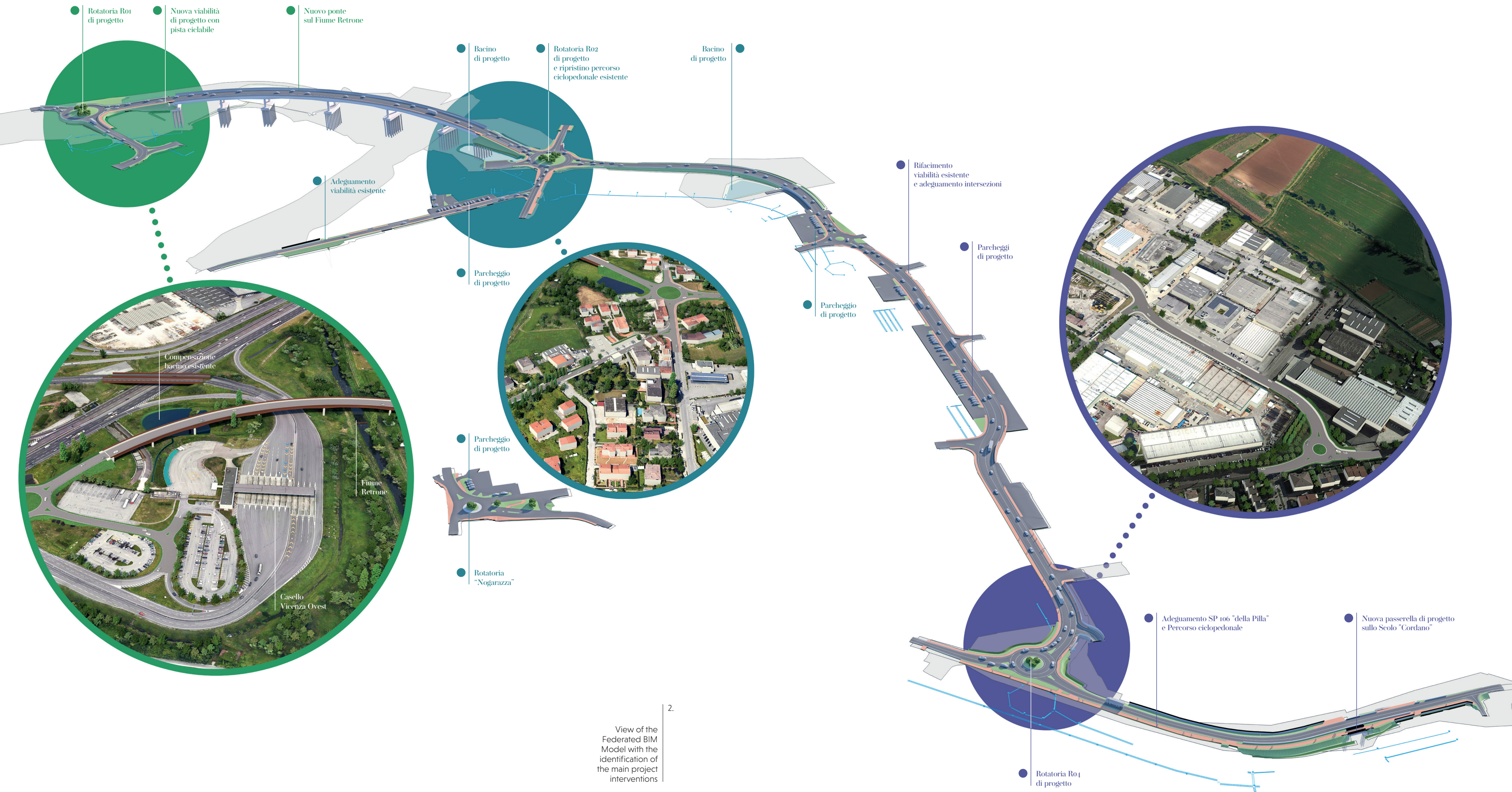
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AP ASSE PRINCIPALE	☆
WBS_L_3	☆
CS Corpo STRADALE	☆

BIM 5D

The project was created using BIM methodology which significantly facilitated the interaction between the disciplines involved – road infrastructure, structure and hydraulics.

A federate model was created starting from the BIM models devised for each discipline, respectively with Sierrasoft Roads, Autodesk Revit and Autodesk Civil 3D, which enabled analysis of the interferences and BIM (LC1, LC2 and LC3) co-ordination checks to be made.

In detail, the models were not only implemented through 3D modelling but also with all the design and planning information. Subsequently, the quantities for computation (BIM 5D) and project tables were extrapolated.



2.
View of the Federated BIM Model with the identification of the main project interventions