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Highway Design



Syllabus 01



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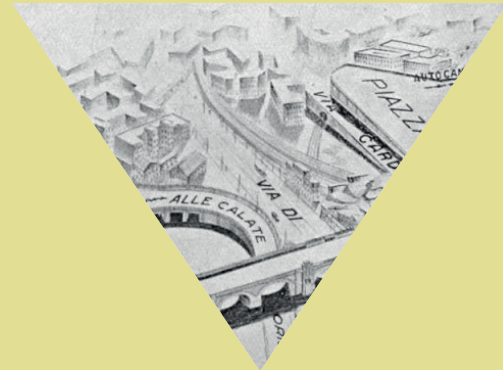
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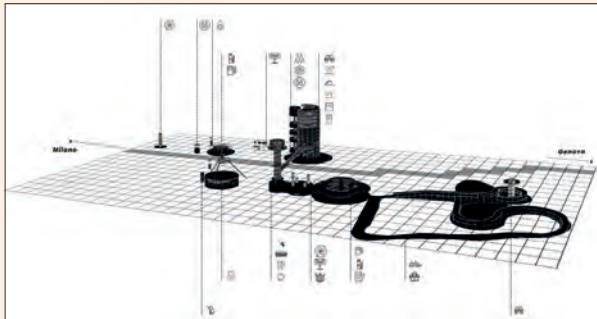
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**Francesca
Zanotto**

**Gates to the
Territory.
Beyond a Linear
Experience of the
Highway**

Francesca Zanotto, architect PhD, is a tutor of Architectural Design at the Department of Architecture and Urban Studies, Politecnico di Milano, and a postdoctoral researcher at Università Iuav di Venezia.



A la folie, Project by Guita Herro, Ana Kapsarova, Sebastián Díaz Reverón.

Throughout the 20th century, the Italian highway network has been the reflection of the country's progressive modernization. From the realization of the first spans and the major works of the Fascist era to the post-war reconstruction project of a nationally extended road network, the motorway system keeps up with technological, economical, and social changes happening in the country, facing another, upcoming metamorphosis. The attention towards the use of renewable energies, the digitalization of many services, the outburst of e-commerce, the quest for alternative and more sustainable forms of travel, the uncertainty of future scenarios are just some of the factors leading the national infrastructure towards the performance of new roles and the embodiment of updated values. Part of this evolution in the conception of infrastructure is the idea of the inclusion of "minor" areas in its interest scope. From a heavy, rigid corridor connecting major cities and thus cutting out whole territorial stretches – left behind in economic, cultural, and social terms – the capillary highway system lends itself to work as the crucial backbone of a synergic strategy involving goods, energy, and resources and optimizing

their exchange and distribution among the areas it crosses.

Urban Metabolism studies look at the city as an organism consuming resources, processing materials and energy, and producing waste. The same approach can be adopted within the intervention in non-urban territories. Throughout the two editions of the Architectural Design Studio focused on the A7 highway, involved students developed their design projects around this possibility, turning the A7 into the circulation artery of a territorial metabolism triggering a beneficial diffusion of energies, capitals, resources. The inner areas of the Scrivia Valley and the Ligurian Appennines have been studied in their topographical characteristics, landscape and naturalistic qualities, productive facilities locations, tourist routes to disclose opportunities for the optimization of the use of local resources, the exploitation of specific favorable circumstances, and the mitigation of localized liabilities. This analysis provided insights about main design challenges and key locations to intervene with architectural projects, to stop and invert the fragilization process happening in these areas.

The service station along the highway was the focus of the Design Studio: intended as a device able to catalyze different fields of action and trigger processes of territorial revitalization, was deconstructed by students' projects in its character, passing from being the place for a brief pause in a straight path, bringing travelers and commuters from point A to point B, to be a gate to the surrounding territory, opening to a transversal experience of the linear space of the highway. The outcome of this approach is a series of relational projects, breaking the top-down rhetoric of the great plan with punctual interventions that intercept local energies remaining connected, anyway, to global ecologies and economies. The current typological homogeneity of service stations is sacrificed in favor of site-specificness: these projects are prototypes, developed to be ideally repeated in different locations, but many of them are too intertwined with specific territorial features to work somewhere else. Ideally designed for the inner areas of Scrivia Valley, many of them are expressly devised to activate local synergies, generate value and start microeconomies in the currently underpopulated and abandoned

countryside of the Ligurian Appennines, suffering from the closeness of big attractors as Genoa and the metropolitan area of Milan. These projects overturn the movement towards the urban density, declaring the rarefied, well-connected, and quickly accessible side of the highway as the place where things happen.

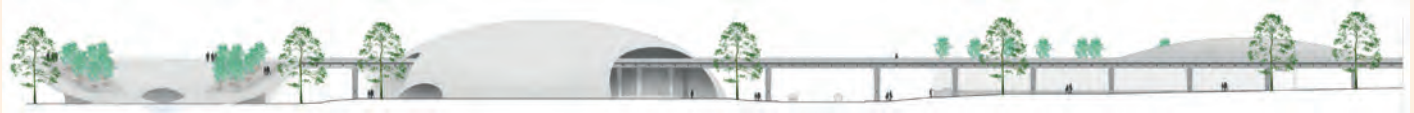
The impressive variety of innovative programs proposed suggests that the rigid infrastructural space is still, as it was in the 50s, a potential place for genuine experimentation, in terms of services and form.

The Design Studio produced a compelling catalog of architectural concepts making fun of typologies, experimenting with new possibilities. The space of the highway, although austere and highly regulated, imposes very few models and narrations, leaving freedom of innovation. Even the landmark value carried by Angelo Bianchetti's design in Giovi rest area is metabolized into something different: the long-distance visual communication system is not devoted to broadcast a brand, but signals territorial values and opportunities.

Among the main triggers for a reconfiguration of service areas' spatial arrangements, functions, and

use patterns is the change in the timing of the stop: the switch from a refueling of cars to other forms of energy supply, as electrical recharging, is a game-changer which may entail a prolonged stay at the rest stop, opening to new possibilities of use for service buildings and their surroundings. This stretching of the stop time frame along the travel promotes slowness in the temple of speed, making room for leisure, rest, and discovery in an environment designed around efficiency and quickness. This turnaround brings back in the service station those roles envisioned by Pietro Porcinai for rest stops along the A22 highway, opposed "to the attitude generally adopted in Italy towards motorway buildings and related parking areas, which rather looked to the American model of symbolic and advertising architecture that offered itself in proximity of the motorway and built its front relating to it" (Zanda, 2020). An example of this attitude are the service stations designed by Angelo Bianchetti, while Porcinai would promote rest areas as places designed for the pleasure and rest of motorists, "achieved by opening the service areas towards the landscape in the opposite direction to the motorway" and by providing

Project by Yu Miao, Li Linmei, Chen Bowen.



“playgrounds for children and motor gymnastics to restore physical fitness after having been forced into cars for many hours” (from Porcinai’s letter to Ing. Moroder dated 2 September 1972; Pietro Porcinai Archive, Fiesole, ref. 3452 SP; in Zanda, 2020).

About some projects

The projects developed by students recover this attention to the quality of drivers’ experience of the rest areas, while strictly referring to the highway in spatial and formal terms. Miao Yu, Bowen Chen, and Linmei Li designed a concrete, organic shell around the road hosting in a fluid landscape a series of services from short, to medium, to long stays. A market space, where villagers can sell their goods directly from the trunk of their car; a drive-in, where drivers can enjoy a movie while their car is recharged; a pool, to exercise and take a break from the heat of the highway; a camping space,

where is possible to spend the night in a hybrid, man-made nature.

Ziqi Cui, Shuqing Chen, and Suofeiya Nanxi play in the expanded time frame to allow drivers to increase their knowledge about the motorway: around a courtyard, a library and an archive center slow down the speed of motorists’ travel offering the possibility to refer documents about the history of the infrastructure while nearby, an accident museum is an exhibition space showcasing data regarding the accidents caused by highway damage in Italian history.

Some projects are configured as attractive stations of territorial accessibility, welcoming travelers with facilities acting as educational points and interchange terminals. Here cars are left behind, undergoing electric recharge or maintenance, and visitors are guided to explore the surrounding hills by foot or other means. This may happen, as in the project by Martina Chiappe,

Project by Ziqi Cui, Shuqing Chen, Suofeiya Nanxi.



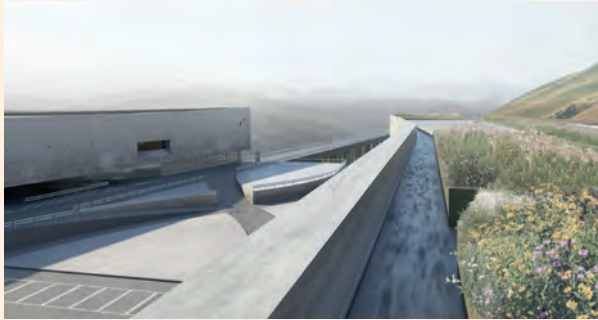
Caterina Santini, and Sara Agour for the Campora rest area, in a row of aligned volumes acting as a gate to the landscape. Two twin buildings, on both sides of the highway, are the keystones of a transversal path crossing the surrounding landscape and the infrastructure thanks to a suspended bridge. Differently, Beatrice Garampelli and Elizabeth Heidenreich envision for the same spot a topographical architecture, building a threshold between the open-air highway and the entrance to the “October 28th” gallery. This “connective limit” provides an inhabited and serviced interface between the highway, the tunnel, and the landscape.

Project by Martina Chiappe, Caterina Santini, Sara Agour.



Other projects catch the dilated time frame provided by the electric recharging as an opportunity to, instead, intertwine drivers’ stops with a new productive fabric, bringing new blood to this fragile territory. The chocolate factory envisioned by Nicolò Mariani, Christian Spolti, and Lorenzo Turnaturi is an accessible productive facility where the contemporary notion of the industry is embodied in three inscrutable volumes, characterizing Vocemola rest stop as discreet landmarks. Below the highway, a public slab connects the detached bodies and enables visitors to experience in different forms the industrial space, turning the

Project by Beatrice Garampelli, Elizabeth Heidenreich.



stop into an opportunity for a unique experience. In the same area, the experience of production finds a variation in the agricultural hub designed by Pietro Dallerà, Andrea Frontani, and Alessandro Ricci. A huge, semi-transparent shed displays along the highway the show of production: digital agriculture, proposed as the driving force of the recovery for these fragile lands. Outside, this mega structure ditches any reference to human scale; inside, a complex of biology and chemistry labs, conference rooms, offices, agricultural showrooms, indoor gardens and orchards, co-workings, and educational spaces exchanges heat and energy

Project by Nicolò Mariani, Christian Spolti, Lorenzo Turnaturi.



with a big data center, the structural backbone of the building. The agricultural hub joins up different scales and domains: spaces designed and sized for humans in a complex referring to the measure of the highway and the territory, hiding a rigid core – the data center – where the “server rack replaces the human body as the benchmark for design” (Groen, Kuijpers, 2020) and the human presence is “increasingly incidental” (Pestellini Laparelli, 2019).

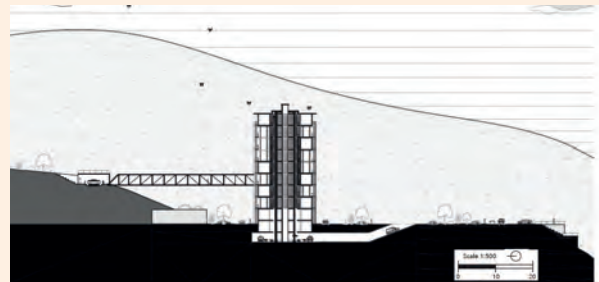
The design for humans and the post-human architecture – that defined by Rem Koolhaas “for things and machines” (AMO, Koolhaas, 2020) – meet also in

Project by Pietro Dallera, Andrea Frontani, Alessandro Ricci.



Federico Spiaggi's and Giacomo Tomaini's logistical tower. For Campora service station, their project envisions a shipping and delivery hub serving the scattered settlements in the surrounding and lightening nearby cities by the pressure of the "last mile", the final leg of parcels' travels: "the squads of trucks and vans, the parcel hubs and sorting centres, the parking snarls and the discarded boxes" (Subramanian, 2019) caused by the handling of parcels headed in these areas anyway. The tower innovates the architecture of logistics, usually stretching out on huge floorplans transversed by forklifts and robotic pickers sliding on smooth

Project by Federico Spiaggi, Giacomo Tomaini.



floors: the vertical hub for deliveries involves in the picture transport by drones, offering an aerial show to drivers passing by. The lockers embedded in the tower are dedicated to the inhabitants of the surroundings, gathering here to pick up and deliver packages. This experiment aims to redefine the architecture of logistical facilities, potentially resulting in "other societal assemblages" (Otero Verzier, 2019). Moving away from the urban congestion and conveniently meeting along the highway to perform quick gatherings and attend events is a recurring proposal in many projects.

Project by Jiayi Yan, Wenkai Wang, Chenyu Hu.



One among many: Jiayi Yan, Wenkai Wang, and Chenyu Hu propose for Campora rest area a slab suspended above the highway, housing an art gallery and a space for events, meetings, and talks, deflating the polarized cultural supremacy of Milan and Genoa with an unexpected point of reference for arts and public debate among the Ligurian Appennines. The same project includes a residence for artists, reachable from the service station but immersed in the woods on the hill above the rest area: a possibility to experience remote living, without losing the convenience of the connection.



The tension to efficiency sought after by contemporary service station design is finally defused by Guita Herro's, Ana Kapsarova's, and Sebastián Díaz Reverón's project. The amusement park they propose for Giovi area exploits the recharging and servicing time to offer drivers access to something carefully designed out by the over-efficient technical domain of the highway: fun. The funfair dismantles the pressure to over-productivity of the digital era, where the worker can be – and therefore, is – always available and always on duty. In this groundbreaking proposal, drivers can experience during their travel a break for the entertainment of

A la folie, project by Guita Herro, Ana Kapsarova, Sebastián Díaz Reverón.



the body, left aside by the patterns of intellectual jobs performed remotely.

À La Folie amusement park radically embodies the opportunities that the infrastructure may offer in the next future: a space of experimentation around forms and functions, enabling updated ways to live the territory beyond a linear experience of the highway.

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