“UPSIDE-DOWN. THE SHAPE OF WATER MOBILITY IN 21ST CENTURY VENICE.”

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The infrastructure of the underwater lagoon subway aims, on the whole, at simplifying and modernizing the metropolitan transport systems linking Venice to its inland, by providing a definitive solution to the age-old issue of “motor traffic and swell” in the fragile lagoon environment. The presence of junctions and train stations in the city’s unique landscape raises the question of how to create architectural constructions between land and water that both meet high technological standards and preserve the individuality of the place. The underwater lagoon subway stations project thus becomes an opportunity to emphasize the uniqueness of Venice and its environment, by putting technological innovation at the disposal of a city which still resists recognizing its role as a cultural capital and international meeting point.

The route and means of transport alternative suggested at this stage of the research is intended to provide a new meaning and role for the underwater lagoon subway. The choice of a specific route, related to the characteristics of the individual means of transport, is closely connected to a very precise idea of the city, an argument put forward by Gianni Fabbri in the article “Una città arcipelago. Luoghi centrali, accessibilità, architetture” in Venezia quale modernità- idee per una città capitale, Franco Angeli Editore: Milano, 2005.

It is not a matter of building new access gates from the mainland to the city - aping what has been done elsewhere in the world - but a matter of facing an age-old issue in the insular city’s construction history. This could be done by redrawing Venice’s borders, preserving and nurturing the extraordinary relationship between the artificial and the natural, which has altered the very way of thinking about the insular city. Paradoxically, there is no natural scene more artificial than the one we encounter in the Venetian lagoon - made up of bed-diverted rivers, cut channels, strengthened banks, emerged and drained lands, and so on.

The planning of infrastructures nowadays represents a chance to build new urban spaces that combine the functional and technological a-topia with the peculiar characteristics and variety of the pre-existing morphological structures they pass through. Large-scale projects such as these also allow for a discussion of the topic of the contemporary city, and might represent a great chance both for reshaping the already existing urban facts in a more hierarchical, effective way and, for recovering the specific identity of each city. Representing the city’s future spaces, they demand new solutions, new techniques, and new instruments, which redefine the relationship between old and new embodied by local tradition and technological internationalism, respectively.

A necessary step of the research was to study the latest technical and technological solutions in the field of public transport that have recently been adopted in other European and Italian cities in order to survey all of the variables that usually characterize complex projects. This study was also carried out so as to discuss building techniques and structures, technological advances and safety matters, issues regarding soil balance, the interaction between the environment and plant design engineering, geotechniques, and once again, so as to optimise the construction methods and processes of the new building site in the fragile and complex Venetian lagoon. We are however aware that good results never depend on the sum of the single components. Peculiar attention was devoted to those subway lines that may be used as possible models – due to their characteristics, contextual analogy, route development, number of stations, and the kinds of relationship established with both central or monumental areas and high quality landscapes and environments. Though passing through cities very different in size, the examined lines offer more or less the same lengths: Turin, 9,6 km and 15 stations; Paris’ Météor, 8 km and 8 stations;
the north southline of Amsterdam, 9,5 km with 8 stations; Genoa, 7 km with 6 stations; and the slightly longer London Jubilee line, 16 km with 11 station.

An early comparison between the case studies has shown that all stations present very similar technical and functional characteristics. The adopted solutions are recurrent and reveal the use of few elements: a single or double track boarding area, whose dimensions depend upon the number and length of the trains; the mezzanine level, the ticket office and entrance hall, the vertical lift system. Generally speaking, within a single line, train stations reveal a similar planning – as regards the disposition of standard levels and their functions – which is later adjusted to environmental circumstances that may vary to a great degree. An entirely different chapter should be devoted to the Amsterdam subway due to the particularly interesting building process of the entrance to its subterranean stations. This process specifically allows for easy working conditions in the presence of water, without affecting the delicate balance of the historical buildings located near the stations.

Another important reference point is the Turin subway, which is expected to double the number of stations and eliminate the usual service elements, in order to privilege the use of small-size high-frequency trains. These stations would realize the idea of new “transit structures” as artistic promenades, that is, as spaces to be easily and rapidly passed over in order to regain the lost relationship with the city.

Having revisited the technical issues, what newly emerges from the study of the sample cases is a different way of conceiving the subway lines project and the relationships between stations and cities. The idea of a line as a unitary system – a concept that shaped some of the most impressive examples of subterranean architecture, such as the stations of the Moscow subway; the Paris subway and its recognizable underground galleries with hygienic white tiles and Gallimard’s sheds; the longest gallery in the world, built in Stockholm’s entrails; and the more recent “linea 1”, the red line by Albini in Milan – has gradually been replaced by the idea of a non-unitary line composed of differing locations.

The new projects do not intervene on inner spaces such as platforms and junctions - elements already predefined in the functional organization due to technological needs – rather, they focus on the mezzanine levels, the halls and the surface architecture, emphasizing the peculiarities of each station according to the various urban contexts passed through by the metropolitan train.

The stations will be turned into sheltered squares, central meeting points, new opportunities to plan and redevelop the city, and will be recognizable from the functional either thanks to transparent shelters (such as those at the Canada Water and the Canary Wharf in the London docks area), or large glass vaults (such as those found in the Centurbaan in Amsterdam, Saint Lazaire in Paris, Corvetto in Genua). The Bibliothèque du Météor is an exemplary invention of a new place in the city of Paris. It is a subterranean square in an area lacking other recognizable aggregation spaces.

The hypothesized projects entail solutions that minimize the impact and the inconveniences brought about by the new architecture on the canals’ navigability and the surrounding ground. The structure that rises from the water will be free of any cheap rhetoric derived from placing the new architecture into the historical Venetian context.

Only small-sized constructions will be seen on the surface, and they will recall Carpaccio’s wooden, mercantile Venice, the floating dream-like party machines, of Aldo Rossi’s Teatro del Mondo. These constructions will also be places where the earth/water relationship will be redesigned, and where the aequous spaces of the lagoon can be contemplated in tranquillity while coming up from, or plunging into, the underground. Being thought of as machines to “spy on” Venice - where the inner and outer dimensions mingle - the stations will create links and relationships and will rediscover the city’s architecture. “Un interno veneziano non può vivere soltanto della sua qualità di interieur ma deve fatalmente appartenere ai mari di Venezia e ai legni che la solcano” (“A Venetian interior cannot live only by its quality as interieur, but should necessarily belong to the seas of Venice and to the wooden ships that plough through their waves”). These stations will furthermore be useful in discovering new landscapes, in redesigning the Venetian borders and the large openings of the canals, putting the latter into a new perspective, so as to rival with the spectacular personality of the Venetian space.

The point of reference remains the lagoon’s broad skyline which has traditionally been associated with a number of figures that developed the imaginary traits linked to the perception of far-distant objects being located in a flat and staggering lake panorama.

These small floating architectural
constructions derive their character and meaning from the city. Built on spaces and shapes belonging to a familiar history, they convey the exceptional feeling of our being in Venice - which we derive from the funnel cross-section of the atrium that reflects the breaking of the sunbeams over the lagoon, by water rooms, cuts, small courtyards, wells, cloisters, bridges. In other words, architecture that wholly participates in the ability of the Venetian buildings to reflect themselves and to reflect the light.

These small buildings, modeled on the morphology of the island-city, on the one hand allow us to steal ground from the lagoon that is suitable for construction and to create new foundations and docks. On the other, we are able to redefine the uncertain limits of the insular city, continuing to weave the intimate earth-water relationship that has presided over the construction of Venice since its conception.