

The project proposal is based on the idea that a city is, first of all, a body made out of "fabrics". Social, economic and cultural fabrics that in the physical form of the built city are the direct and dynamic expression of its vitality over time. The Morphological analysis of Viterbo urban fabric has therefore constituted the first step of the project while the second step has been to focus on daily use of urban spaces, in order to make the center of Viterbo an accessible, pedestrian and child-friendly neighbourhood. But to talk about a shared, efficient, citizen-friendly city, means, at the end of the day, to speak of a sustainable city where Morphology and Sustainability can be part of a unique creative process. That has been our main goal from a methodological point of view. The city is in fact a key resource for the environmental control. The scale of microclimate come into play tighter interactions between form, materials and climate data, from which one can define and identify major elements of comfort and environmental dis-comfort. To design of urban public spaces allow then to improve the context environmental conditions, promoting social relations between users and energy-saving-strategies for the creation of a healthy and comfortable urban environment. The verification protocol adopted for Viterbo provides a sequence of basic local climate data (temperature, humidity, rainfall). To these we added: Morphological data, Sunlight and distribution of Albedo values, Radiation and solar axonometries profiles, Climate and microclimate analysis (as: Thermal comfort analysis, Radiating components analysis, Wind component analysis ecc. These data led to the development of *Thematic maps* useful to understand which is the most affected areas to direct sunlight, which are affected by a greater number of hours of shade during the summer and winter season, so as to have devices of bioclimatic mitigation. Particular attention was also given to water as important bioclimatic device for temperature regulation (favouring, in particular, the passive cooling in the hot season and the formation of night and morning breezes with great gain for air quality and outdoor comfort). Finally a fundamental element in drawing these thematic maps was the use of GIS (Geographical Information System) through operations of geo-processing in order to locate, in a reference coordinate system, the environmental data making them useful for the project. But sustainability means also to have the parametric control of costs compared to the budget established by the Municipality and actually the *Economic and Financial sustainability* is one of the most important voices when talking about sustainable urban redevelopment. Therefore a parametric costs control has followed all our design choices. Common to all projects is the distinction of the public space in preferential walking areas and rest areas. The latter, in particular, have been hierarchized on the base of the needs identified in the different squares. So more "structured" rest areas are designed closed to the main monuments through a flooring of light basalt, the construction of shaped fixed seats in plain concrete and where not already present an historic fountain, the realization of a body of water. A second level of rest areas concerns those one having a particular urban role but that are not directly affected by buildings of public importance. Even here the use of a light basalt declare their resting role but more simple fixed seats and the absence of the water, hierarchizes them from previous ones. In these cases, is frequent the inclusion of grass-sod-lines (between the basalt) to emphasize the "local" character of the public space (Piazza del Gesù). Some special rest areas for commercials were also designed by inserting longitudinal elements in Cor-ten in order to identify bars and restaurants *dehors* at slow visual impact. Main pedestrian areas are designed using dark basalt in order to facilitate their visibility but without coming into conflict with the rest of the pavement. As a rule the direction of the texture has been thought in order to facilitate the accessibility and use of the square, and when necessary, it is further enhanced by the presence of thin cort-ten lines (Piazza San Lorenzo, Piazza della Morte, Piazza delle Erbe). In order to avoid as much as possible the cutting of the plates, then, where different textures merge together, the insertion of small pebble stones areas (with trees) has been provided. The different morphology, the different use, the different needs and the different environmental parameters of each square deliver then a plurality of solutions (Piazza Fontana Grande) within a basically unitary design project able to give back, from time to time, the individuality of a specific urban place without

ever losing the sense of belonging to the common historical identity of Viterbo. (Piazza del Plebiscito)

## **Conclusions**

The joint use of the urban morphology tools, in order to understand the role and the potential of public spaces in the historic center of Viterbo, together with an accurate environmental analysis, has made possible the design of living spaces, aware and respectful from the *identity* point of view, efficient from the *energetic* point of view, but also open and flexible to the *changing use conditions* of city-life.