



POLITECNICO  
DI TORINO

# Honors thesis

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COURSE OF  
Architecture Construction and City

*Abstract*

## **Urban Furniture for Senseable Cities**

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This thesis project focuses on the creation and study of particular types of smart urban islands. The technological street furniture is aimed at renewing the public space, increasing the well-being of the public and stimulating a higher efficiency of the services of the city.

The research moves from the observation of public space and its furniture. A public space well designed, well built and well maintained, can be strongly affected by the presence of obsolete and inadequate urban furniture, not responsive to user' needs.

Often overlooked in our cities, given its small size, the street furniture has a rather strong impact on the territory, when you consider its spread as a service network terminal in the city.

The path of the study, which leads to the development of an urban furniture, was based on two different phases and contexts: for the first step I have worked on a project for the city of Dallas (Texas) in the Senseable City Lab, at the MIT (Massachusetts Institute of Technology) in Boston, while the second phase, which took place in Italy, at the Politecnico of Torino, aimed to insert the object created earlier in a different city.

During the first periodo of study, under direct request of the public transport agency of Dallas (DART - Dallas Area Rapid Transit), I have created an intelligent component which works as a bus stop. The project's goal is the improvement of the service through the interaction between user and public transport system and the choice of advanced technology elements. The bus stop is composed by an interactive ring and a lighting ground grid. (Fig. 1)

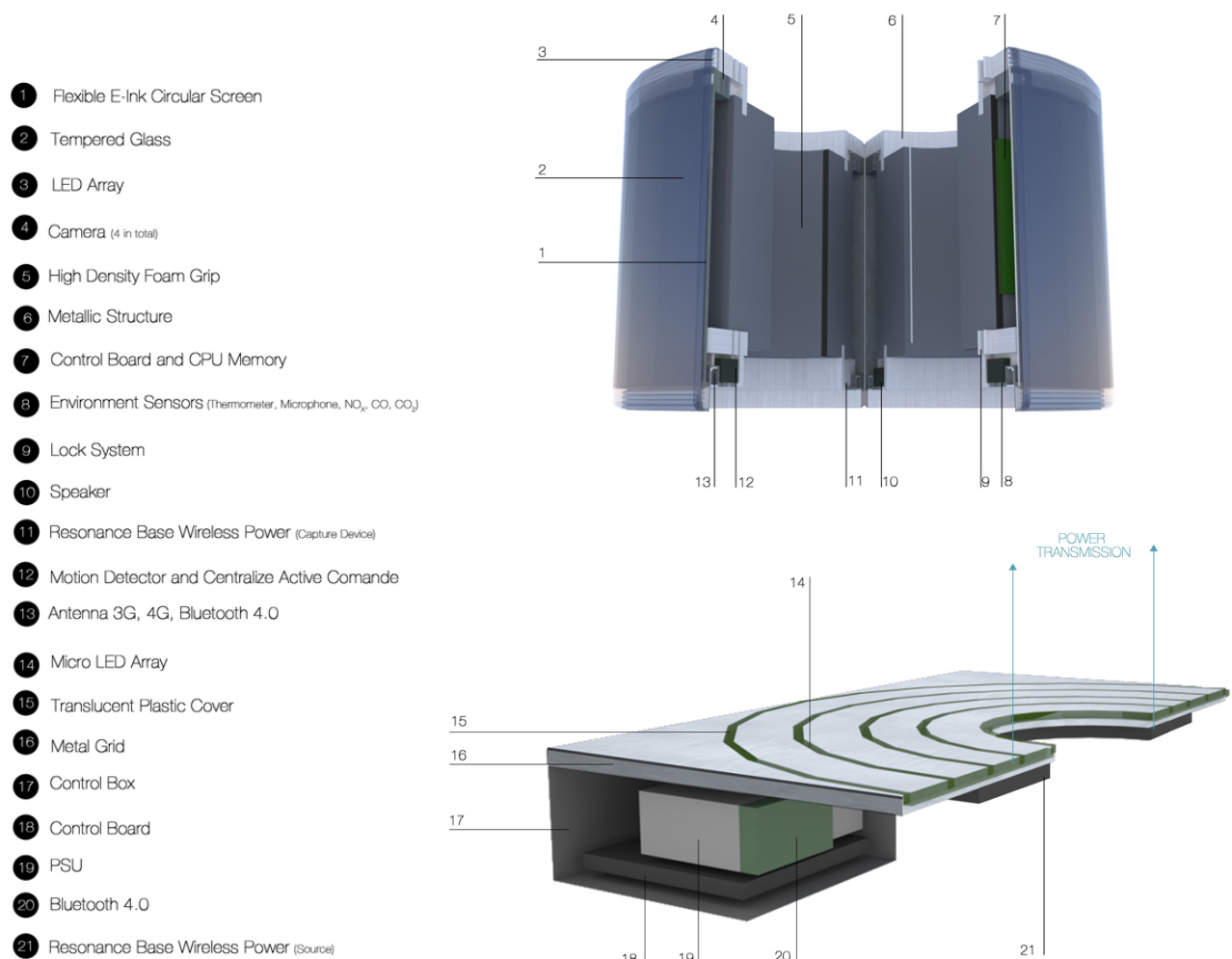


Fig. 1

Unique feature of the object is the relationship between nature and technology; the vegetal element becomes **co-subject** of the project. The proposal is to use the tree as a vertical bus stop; the concept comes from the idea of integrating the city of Dallas, highly urbanized, with natural elements. Nature combined with technology can improve the efficiency of the public transport, reducing the impact of urban mobility on the city. This ambitious choice was carried out as a challenge against common solutions explored in the field of street furniture related to public transport so far.

In addition to the basic component, different urban scenes have been studied, generating an abacus of possible combinations between the ring and other street furniture elements, such as benches, bike-sharing racks, covered shelters, etc. (Fig. 2)

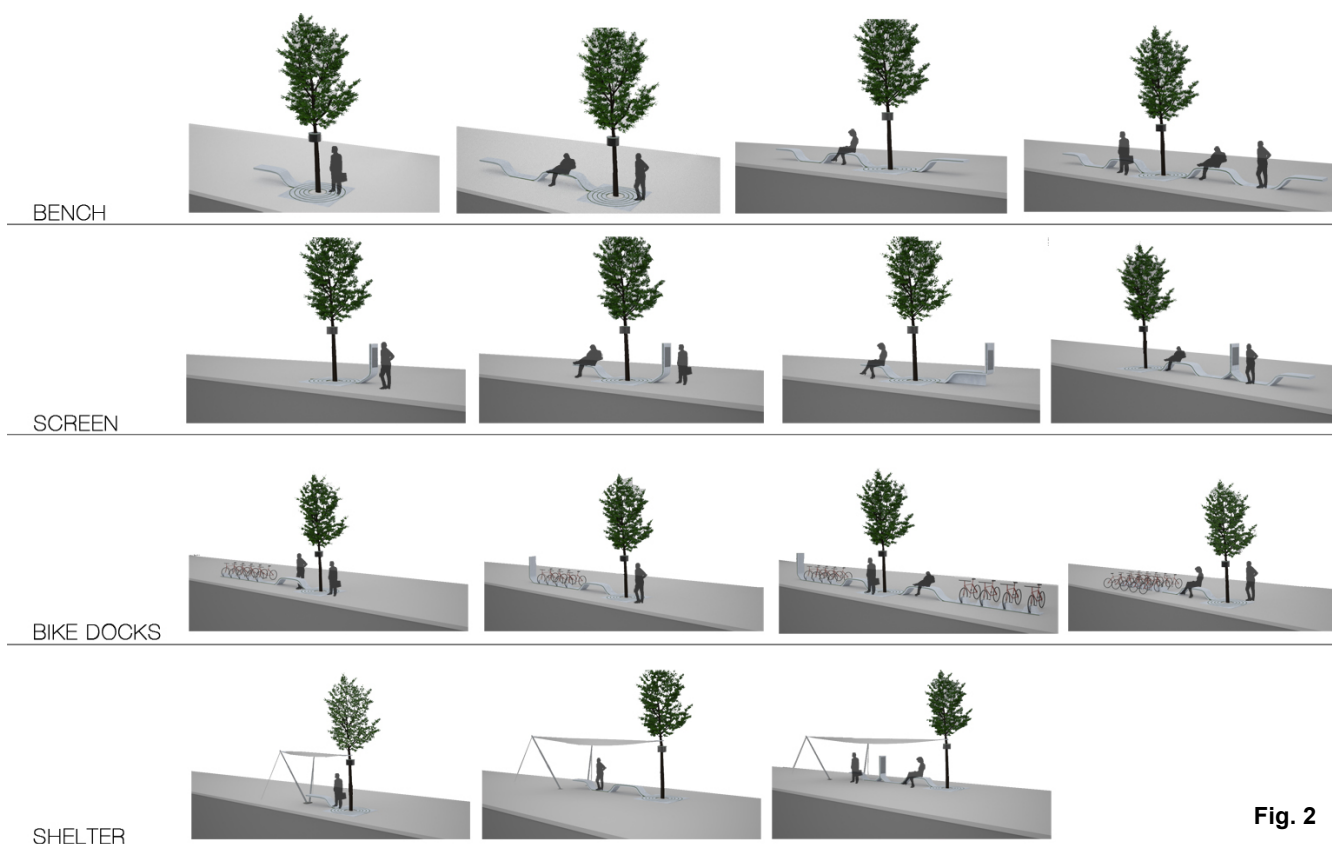


Fig. 2

Finally, during the last phase of the project carried out in Italy, the themes previously developed have been translated on the urban surface of Turin. This experiment has highlighted some difficulties, among which the translation of an object created for an American city in the European dense and compact cities. For this reason some technical changes took place and, according to the needs, the functionalities offered by the component have been extended; the most relevant change was the use of public lighting poles as vertical support, instead of the tree.

More specifically, in addition to the task of bus stop, the object designed becomes a way to re-think street furniture scattered throughout the territory, with the ambitious aim of unifying services and functions performed nowadays by inhomogeneous elements often not harmonious with the context. (Fig. 3)



**Fig. 3**

The research had the intention to show how today's technologies, applied to items of street furniture, can contribute to improve the services of the city. New technologies and sensors spread over the city may be the means by which establishing a relationship between citizens and public administration, and respond to inhabitant basic needs. Taking Prof. Roberto Pagani's concept of Smart City, cities can be defined as smart only if they are the welfare and benefit confluence both for individual and community.