The transportation interface as a contribute to urban qualification

The case of *Plaça de les Glòries Catalanes* in Barcelona

Extended Abstract

*Mariana Mendes Duarte*

Report for attaining the Integrated Masters in

*Architecture*

Supervision: Profº Jorge Manuel Gonçalves

*November 2012*
The dissertation is based on the project *Ciutat i Infraestructuras: Entorn Glòries* to the Plaça de les Glòries Catalanes, in Barcelona. The proposal, developed under the Erasmus program, at the *Escola Tècnica Superior de Arquitectura de Barcelona* (ETSAB), was completed under the Master in Architecture at the Instituto Superior Técnico- Universidade Técnica de Lisboa.

The content of the project is created by the revitalizing power that a transport interface could have on the Plaça Glòries, turning road’s intersection into a new centrality node in Barcelona. So the main question is to understand how is possible to renewal the urban image of a transportation infrastructure to a focus of activities and a meeting point.
City and transportation infrastructure

The transport infrastructure is a consequence and a condition for urban growth. They exist to serve the needs of a population, as the city depends on them for its progress and for the spatial organization of activities, functions and services that constitute it.

In any case, the cohabitation between city and urban infrastructure is not always symbiotic. Highways, ring roads, flyovers, highways, roads we, airports, railways, etc., don’t coexist easily with the idea of the city as the center of the community, as a meeting point. These road and railway equipment are not usually friendly for pedestrian traffic, which leads to being seen as barriers to movement. Besides, in the history of city development, many transport infrastructures ruined the urban fabric and deteriorated the surrounding areas. Around strong mobility axis, sometimes is generated vague and undefined spaces, urban voids.

However, there are always two ways of looking at life. You can see things like a glass as half full or a glass half empty. These two perspectives can also be applied the way you see the city: think everything looks like an urban problem is actually an opportunity to solve others.

In fact, one might consider the potential as a generator of urban public spaces of various urban facilities such as schools, cultural facilities, hospitals, enterprises or industries, ports and of course railway stations. This means that the idea of aggression against space infrastructure of society is not true. The problem is that these are not being lived in all their capability, because they were not treated for other uses in addition to its function and practicality.

Thus, by investing in the improvement of public transportation, we have the responsibility of investing, simultaneously, in the public space. When intensifies the use of these infrastructures, the flow of pedestrian traffic increases, and consequently also increases the use of the public space. The opposite is also plausible phenomenon; this is, to intensify the use of a particular transportation infrastructure, such as a subway station, train (or intermodal) you should empower the surrounding public space. The resulting effect will be the safety and well-being experienced by users of the station.

When investigating the quality criteria of public space, we can find then that a public space near a transportation infrastructure should be a space for dynamic activities, to attract a greater number of users. Consequently, projects for public space should be useful to society, and contribute to the overall image of the organization and the urban environment. We enter in a plan that breaks the scale architectural intervention, looking for a coherent idea in relation to its surroundings. The quality of public space also comes from urban qualification, by an integrated project-oriented activity.
Therefore, with the dynamism that transport infrastructure generate around them, both in terms of public space, or streams, it is advocated that they are a cause for urban regeneration. The same happens when an urban design qualification program for the introduction of a new transport infrastructure. By definition, this is also a great project, not only in terms of capital investment and the number of actors involved, but also in terms of their weight in the direct and indirect surroundings.

It will be in this conjunction between the insufficiency of public space quality and increasing use of transport interfaces, that a new relationship with the city's infrastructure will be born. These great strategies assume the defence of urban quality, as a result of the integration of a transport interface.

**Transport interface**

Today, mobility appears to be more important for people and for the cities. Actually, half of the world population lives in cities, and this urban development has left citizens too dependent on the automobile. However, it seems that the issue of mobility has been called into question more, but not only as a research for alternatives to the automobile. Increasingly, it has to do with the rights of citizenship in a society, where each person is to be considered as a mobile being, where the ability to access the place of work, home or leisure may even jeopardize the freedom of citizens to must obviously be preserved and defended by those who exercise power.

Intermodality emerges as natural preference in protection of this new right of society. This is because the path drawn by the user is no longer restricted to only a transport but also includes pathways before and after that particular trip. The distances of commuting and increased combination of various means of transport allowed greater freedom and ease in getting from point of departure to point of arrival. Whereas the ideal trip would be a direct link, a transport interface will integrate naturally in daily route, consisting of a breakthrough not aware of the trip, but desirable in a passing zone, where it is given access to the public transportation network, connecting between transport modes, in a number of destinations.

Thus, a transport interface is treated as a multi-purpose transport, information and commerce, located in urban areas, being a place in the city.

For his role in history, it is safe to say that the railways completely changed the everyday life, breaking geographical barriers and transforming the urban environment. Also today, a space for intermodal brings new opportunities. Being close to the workplace, to commerce, to culture, or being away from the city and close to nature, parks, with a privileged view, criteria that are difficult to define, since the character of
each individual describes the development equation. Rationalizing, plus experience opportunities, accessibility creates land value, allowing people to live where they want, and, consequently, developing housing and tertiary.

However, the introduction of a station in urban, hasn’t the same meaning it had in the nineteenth century. The rail station represented the arrival of progress, modernity, to a township. With the advent of the railway and the construction of stations on the outskirts of town, and then in the central area of the city, created a new place of attraction and exchanges of people, which developed around the neighbourhood station.

The old lack of habit in relation transportation — user has disappeared. The city gained a dimension of movement, which is trivialized over the twentieth century. So today, when talking about the social impact of a transport interface, we speak more on improving the living conditions of the population by reducing distances, by creating jobs or by equity opportunities. Nevertheless, the experiences develop in the station’s surrounds are still able to create a characteristic environment. The multiplicity of functions of the interface and cross between persons provides a cultural richness, recalling the importance of the "station’s square".

Besides the difficulties rising from the particularities of each country (its own dynamics, articulation with other local initiative or territories) that hinder the standardization of results over the territory, there are other theories about the impact of these infrastructures. Of course it is necessary to mention the environmental changes that adding a point where trains, metro, buses or electric intersect may cause. The speed, noise, vibration, air and visual pollution may be factors discouraging their establishment in the neighbourhood.

The planning for the transport interface placement must assimilate the precedent that characterizes surrounding the station, of how this will interact with process variables, such as actors, interests, actors and variables of social and cultural context of each country. The relation of the transport interface with the city must be subordinate and servant. It is not just an object in the city and another piece that complete, not only for its transport function, but also improves the conditions of the surroundings. It is understandable, therefore, that the integration of a station in the urban environment will greatly affect its surroundings. The precedent and emerging environment, the before and the after, will be radically different.

Until now, it has been analysed the problems faced when trying to plan and determine the "when" and "where" to draw a transport interface, it is time to analyse the "how."

Considering first the balance of the functional organization, it’s possible to characterize a transport interface with three distinct spaces: decision spaces,
circulation spaces and opportunity spaces. The decision spaces include, for instance, entrances, ticketing, where passengers decide your route. The circulation spaces unite the decision spaces to access platforms and opportunity areas.

These areas have been attracting other users to a transport interface. In addition to offering a great level of mobility must be other services that make the seasons, not only functional, but multifunctional. The subway and the broad subways are increasingly lined with shops, street vendors or machines, kiosks, accessories, photographs, etc… Besides the passengers who use the basic function of access and seeking information, others will be enticed by the new activities associated.

A station may be one more part to be in town, hidden from view of those who do not use it, but with parallel life that represents in smaller scale all that is happening on the outside. It is possible that the idea of “station’s square” is melted with the interface itself. Once the stations and interfaces have an asymmetry in their life cycle daily and weekly activities, extra movement, will serve not only to balance the influx of space, but also to increase the use of public transport.

By linking public space outside as well as other urban uses, the transport interface can win this new dynamic of being. First, it is mentioned the correlation, already tested and verified, between a station and a hotel. The link with the urban network transport interface brings customers from the extern market, passing through the city, and even from the internal market, because of the excellent accessibility. Therefore, the range of customers is competitive. This type of hotel's customers is people passing through the city, usually for a short period, favouring the proximity to public transport to tourist areas of the city.

In other side, to see a transport interface also as a learning space can claim the “function to be.” In the era of so-called information society, the combination of types of architectural spaces such as libraries, museums or galleries with stations contributes to the creation of broader concepts and comprehensive in offering learning and culture to the general public.

The exploration of more dynamic uses, connected with sport, can also bring greater permanence to these spaces, and convenience to users. Attending a sports center or a gym built-in transports interface facilitates customers, since it is not necessary to deviate from its route pendulum is just a prolonged period in a particular location.

It is worth to reinforce the idea that users of these spaces are not only user-interface transport. What was intended to defend throughout this exhibition was the complementarity of other urban uses with this type of transportation infrastructure. Not only strengthen your bond, but also complement the deficiencies of the surrounding equipment. However, the type of equipment that can be fuse with an
interface comes with experimentation. The particularity of each case does not allow that there is a set of rules or theories that guide the development of these projects. It is only to sharpen the vision of the architect in order to be able to see the questions that can be raised under the pretext of the problems posed purpose of each specific program.

The Plaça de les Glories Catalanes, a proposal to Barcelona

Ildefonso Cerdá had idealized the Plaça de les Glories would be the heart of Barcelona. Today, it is a node road instead, full car parks and networks of metal. The chaos that settled in this area, justified elect her as the object of study of the discipline of Proyectos IX and X, in Barcelona.

Truly saying, Cerdá didn’t plan the city for the huge amount of vehicles that contaminate the urban space. Nowadays, however, it seems that in almost all of Barcelona, vehicles and pedestrians coexist peacefully, strengthening the social activities of public space. But arriving at Glòries, somehow, feels inhuman character of heavy traffic, and barriers scale.

Before judging the planning of this square, you must know that it was not for lack of trials and experiments, several planners, architects, and engineers who Glòries is not well resolved. In fact, the Plaça de les Glories has been a point, with numerous proposals for formal arrangement, over 150 years. It was the great interventions that preceded the Olympic Games, in 92, that guided the square to its current format. Two annular bridges were designed, leaving a park therein, and ensuring the continuity of Avenida Gran Via, Avenida Diagonal and Meridiana. Currently, in this ring square, pass, each day, 140000 vehicles, and 85000 do it by viaduct.

Since 92, project attempts for Glòries continue, anchoring urban relevance equipment close to the square. The cultural facilities such as the National Theatre of Catalonia, the Catalan Music Auditorium, the Design Museum, or the Mercat dels Encants, and academic facilities serve the city as a whole.

As meeting space, the Plaça de les Glories should not have the title of the square. This question is in sight, to walk on the "square" of Glòries. The abandonment, isolation, barriers, noise, traffic, transport convergence, following the teachings of the chapter are opportunities and infrastructure were conceptual material for this project.

The analysis began in a workgroup with the Avenida Diagonal. The ability to redefine the Diagonal, to break its linear limits, started an initial discussion about Glòries. Investing in the avenue would active the square.
The proposal was to give priority to the vertical direction of these intersections in the Avenida Diagonal, marking a pace of expansion. Introducing the triangular shape designed by blocks, intersections would be clearer. That was taken as a concept idea for layout and expandable moldable. Stretching and rebuilding the orthogonal plot, was delimited a more consistent front of the square, with one of the sides parallel to Avenida Gran Via, Diagonal as the hypotenuse. Under the new configuration, although of considerable size, it was possible to imagine a moment of encounter.

Nevertheless, it is inconceivable forget the wealth that exists in the underground. The diversity of infrastructure crossing the Plaça de les Glories was always seen as an additional difficulty. In this project, they are seen as innovation. The consolidation and development of space-square pass to be related to the construction of a transport interface to connect the red metro line to the lines of train, coming from Diagonal and Meridiana, the tran (the surface electric) and buses.

Coming from the urban scale to the scale-square obviously Glòries couldn’t be solved without resolving its relationship with the closest neighbourhoods. Bury the railways has created a significant difference in quotas, of 7m, for the neighbourhood of Poble Nou. In proposing the transport interface, it makes sense that intermodality is not only in transport but also among districts. That is, it was established as a premise to introduce a sea-mountain route, which connects the two quotas, housing not only the interface but also other uses that guarantee activity in your surroundings. Teamed up with nearby surroundings Plaça de les Glories with an information center and urban tourism, an area of cultural exhibitions, from DHUB, a convention center and media center, housing, a hotel and a sports center (which are developed in second phase of the project).

Given the road character of Glòries, and the specific role of the automobile in urban functionality, it was essential to give it a solution. By the desire to transform the Diagonal, in a line more dedicated to the person than to the car, only the surface electric survived to mark its direction. Traffic was diluted in a kind of mega-block, which immediately distributes traffic through the net of the Eixample, before reaching the node Glòries.

Approaching the local analysis, it was noticed that there were two lines of force, footpaths; it would make sense to have continuity from the Poble Nou and Avenida Meridiana. The first notes for the transport interface came with an idea of the broken line. It was intended that the intermodal had a linear form for a clearer reading of the movement. It was designed as a broken line to create larger spaces or restricted. The entries in the transport interface would be in continuing alignment, for a new alternative route for pedestrian quota.
Decompression spaces were worked underground as courtyards, flanked by shaped volumes that arise from the ground. These volumes gave activities for patios, restaurants, health center, offices, police station, tourist office, and an exhibition space. It have been set up relationships between them to ensure the continued use of the space as public space, all day, every day. The buildings height did not exceed two floors, for not to cause too much shade inside the courtyards.

The rhythm of spaces between the decompression and compression led users within the same binding component, to a height of Poble Nou, and to the train platforms. The advantage would be able to be used not only for passengers but also for pedestrians at the intersection of Gran Via, increasing their level of usage and therefore security.

It was proposed the individual project for a hotel and a sports center linked to the transport interface. The hotel area coexisted in close proximity to the design museum, DHUB. It faced the *Avenida Diagonal*, following the alignment established by the general plan. It is envisioned that the relationship between the two buildings would be more than contiguity, it would be complementary. Besides being a hotel to serve passengers transport interface, would also serve some visitors / artists to participate in the museum's exhibits.

In fact, the discussion around the Museum DHUB was very intense during the work group. It was criticized the necessity of their existence in that place, and above all, the reasoning of its spatial relationship with the urban space. However, the projectual decision led to the reformulation and adaptation of exhibition space, given the existence of the transport interface. To reach the quota of *Poble Nou* neighbourhood, it was necessary to introduce a bridge element, which assumed its presence within the DHUB. This is, it was devised to drill the museum by a metallic structure in passing that allow interaction between the public circulation space museum and exhibition space.

The sports center was established at the end of the “journey”: interface-hotel-museum. Its location was due to the lack of this equipment in the neighbourhood of Poble Nou, taking advantage obviously the proximity to the station.

Thus, the linear structure established a new line in Cerdá net: mountain-sea, with station-hotel-museum-sports center. However, the route has been left open. The concept of expansion of Barcelona could also be applied here, with the flow of underground and trains to disperse the neighbourhood of Poble Nou, another sequence of public spaces.
Final Thoughts

It could be observed that the adjustment of the transport infrastructure could be a new image for the city and a new relationship between the station and surrounding buildings. Transport infrastructure should be think, road and rail, not only as a necessity for mobility, but as a solution to match a city structure with its inhabitants.

By integrating and linking an interface with its surroundings, allows that the activities underlying the mobility not only exist in closed enclosures themselves, thus drawing an architecture that seeks something more than the simple answer to the first layer of the problems presented. According to the theoretical framework of this study, it can be concluded that the general trend of the spaces is analysed to see multiplied and expanded their programs and core functions. However, diversification should serve the needs felt in the urban environment, with a view to the inclusion of populations. It is difficult to define a classification of uses associated with a transport interface. Similar to what happens to the built fabric in its various scales, also the knowledge of a community must take place under several points of view when you want to prepare a proposal architectural: their inhomogeneities and asymmetries, their cultural, historical and social affinities, their needs and behaviours.

Nevertheless, the experience in the Plaça de les Glòries Catalanes was still short of its full potential. With the study possibilities of transport interface, Barcelona would again embrace its centrality, and the same could be extrapolated to other European realities.