CONCRETE PAVING BLOCKS IN THE RENEWAL OF COMMERCIAL STREETS IN SLOPED WORKING-CLASS NEIGHBORHOODS IN MEDELLÍN, COLOMBIA

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SUMMARY

When sloped terrain and dense urban construction meet, they challenge the creation of good and sustainable public spaces. If the project is reconstruction, different access levels to properties, the diverse uses of space and the disruption of public areas by industrial and commercial activities, cars and trucks all militate against pedestrian safety. This is a problem in most urban areas in undeveloped or developing countries. Even a well-defined urban grid of streets complicates the situation.

Greater Medellin consists of nine municipalities with 3.5 million inhabitants where the "Metropolitan Area" is overseen by a government office in charge of general planning, environmental issues and development of projects of common interest. One of these projects was the renewal of dysfunctional areas like main street Castilla, a working class neighborhood.

The first phase of the "Boulevard of Castilla" consists of two blocks adjacent to the St. Jude Church with total reconstruction of public space. S+A Architects designed a reorganization of the complete space, creating continuous sidewalks and positive and negative terraces between the properties and the sidewalks.

With the advise of SEGMENTA Consulting, concrete block pavers were chosen for its small modules, its ease of terrace construction and landscaping including tree pits, concrete steps, vertical masonry retaining walls, tactile units on the sidewalks and upgrading of all the public services. Architects choose salmon-red pavers in herringbone for the terraces, variegated ochre pavers in transversal stretcher bond for the sidewalks and yellow alert lines along the border of the sidewalks and elevated terraces, according with the City of Medellin's Manual for Design of Public Space - MEP.

The Boulevard is 296 m long and 15.9 m wide. A 6 m wide asphalt street runs between a 4.85 m wide western public space strip and a 5.05 m wide eastern one, including 1.5 m wide sidewalks. Western terraces rise to 1.6 m high and eastern ones go down to 1.1 m.

The characteristics of this project is how the designer approached each area taking into account the uniformity of the modules, texture and color of the pavers and blocks. This proposal will be extended and has been duplicated in other projects in the city, and could be used and improved as a model around the world with the immense quality of life brought by concrete pavers.

1. INTRODUCTION

Most of the cities located on the Andes range in Central and South America, are located in inner valleys or on the long slopes of big and tall mountains. The Spanish (Arabic) heritage of a Cartesian network of streets starting from a central plaza with the main church has defined the shape many cities, neighborhoods and houses. Traditional urbanism does not adapt the street network to the terrain, but imposes the rigid grid on every place in town, only interrupted creeks and rivers coming down from the mountains or very steep terrains where construction is not physically possible. Where car access is prohibited by steep slopes, stairs replace streets and sidewalks (see Figures 9 and 10).

When sloped terrains and dense construction meet, they challenge the creation of a sustainable public space. If the project is reconstruction, there is:

- Different access levels to properties.
- Diverse type or uses of space.
- Disruption of public areas by industrial and commercial activities and parked cars.
- Private interventions go against safety for pedestrians.

This is a problem in most of the cities in undeveloped or developing countries, with the poorest areas embracing the city with strips of poorly built, sometimes risky housing that may not withstand seismic activity or fire, and likely doesn't meet most other safety regulations. The well-conformed urban grid of streets complicates the situation.

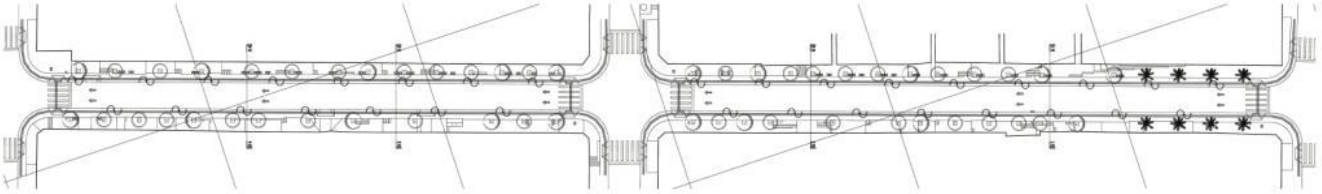

Figure 1. General plan of the two blocks (landscaping, tactile system, lighting, demarcation).

The Greater Medellin is 9 municipalities, 3.5 million inhabitants, where the "Área Metropolitana" (Metropolitan Area) is the governmental office in charge of coordinated and general planning, environmental issues and development of projects of common interest for all municipalities. This office is responsible for the renewal of dysfunctional areas like the one in main street Castilla, a working-class neighborhood built in the 1950s on the slopes of the western range of the valley of the Medellín River.

The fist phase of the "Boulevard of Castilla" is two-block long area adjacent to the St. Jude Church, the original center of development for a large populated area. This area follows the Valley of the Medellín River and ascends from the river several kilometers high on the slope of the mountain.

2. THE PROJECT

The original neighborhood design was simple where the designers only considered a level street awkwardly imposed on the hillside. The renewal project required the total reconstruction and upgrade of the public space in order to make it functional and safe for pedestrians, cars, town-center facility users (e.g., church, banks, restaurants, shops, discotheques, bars, restaurants, etc.). The renewal project

was commissioned to S+A Architects.

The new urban and architectural designers looked for a reorganization of the complete space, with the creation of continuous sidewalks on both sides of the street while creating "positive and negative" terraces between the properties and the sidewalks.

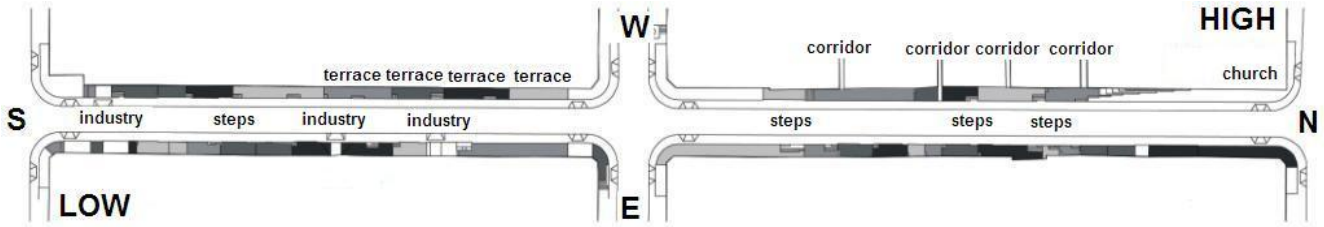

Figure 2. Location of terraces, corridors, some steps, industries (accesses), level and orientation.

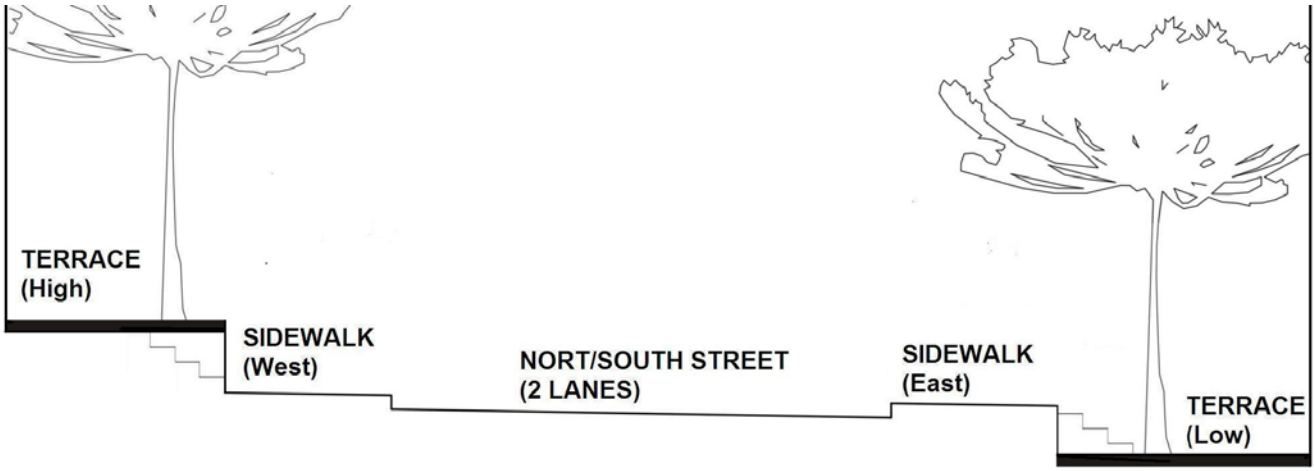

Figure 3. Typical section of the street, with high and low terraces, steps, sidewalks and car lanes.

Figure 4. Before: A low sloping north-south block.

Figure 5. After: Well-defined circulation with concrete pavers.

Figure 6. Before: no pedestrian space.

Figure 7. After: plenty of it.

Concrete block pavers were chosen for its small modules, ease of terrace construction and landscaping including tree pits, concrete steps, vertical masonry retaining walls, tactile flags (400 x 400 x 60 (mm)) on the sidewalks and the upgrading of all the public services. The project also consisted of reconstruction of the sewage system, consolidation of the overhead electric lines, underground tubing of all telecommunications, minimizing of sign posts and the introduction of a new public lighting system. The sidewalk included trees, planted into root containers with concrete frames and grids as determined by the Manual of Public Space (MEP) [1].

Architects choose salmon-red pavers in herringbone pattern for the terraces and some sidewalks, variegated ochre pavers in transverse stretcher bond for the sidewalks (matching the color of the masonry units of the retaining walls); and yellow alert lines along the border of the sidewalks and terraces.

Figure 8. A transverse stretcher bond.

Figure 9. Corners are challenges for designers.

Figure 10. Typical entrance under renovation.

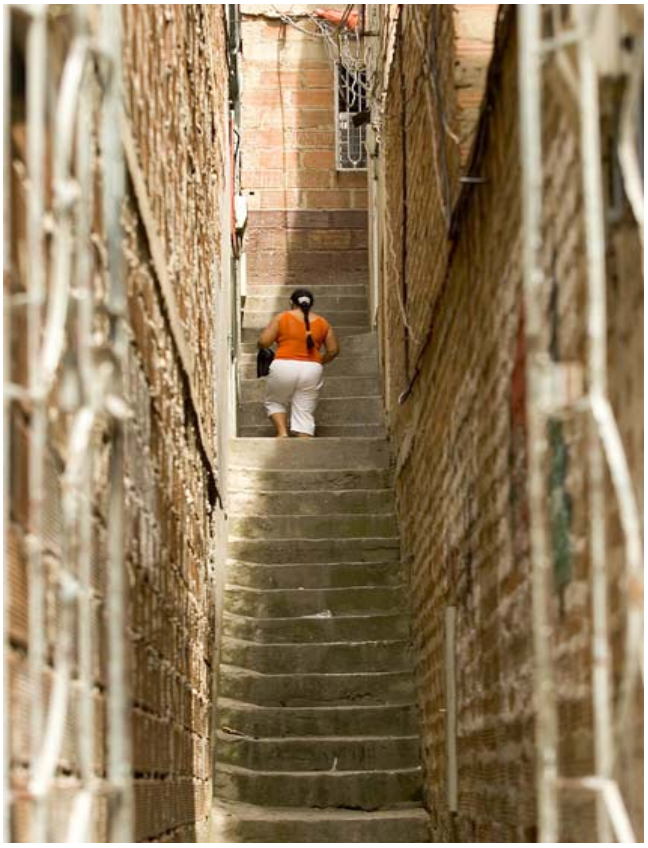

Figure 11. The inner world beyond the sidewalk.

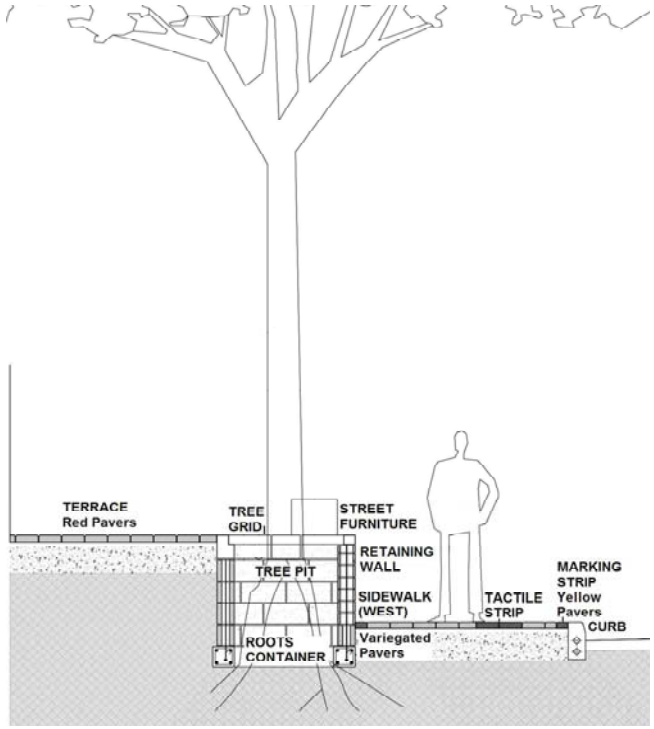

Figure 12. View of a tree pit, sidewalk and curb.

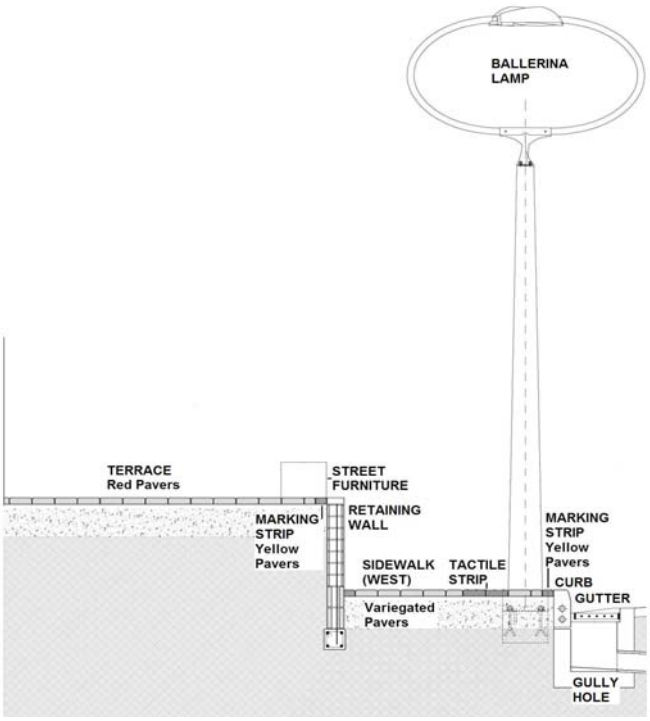

Figure 13. View of a terrace, lamp and gully.

Figure 14. Early stages of construction.

Figure 15. Each owner has his needs.

Figure 16. Drainage in progress.

Figure 17. Everything seems to fit.

The Boulevard is 296 m long and 15.9 m wide, with two and three floor construction. A 6 m wide asphalt street runs between a 4.85 m wide public space (western side) and a 5.05 m wide one (eastern side), including the 1.5 m wide sidewalks. Western terraces go up to 1.60 m high and eastern ones go down to 1.10 m below

Figure 18. A simple but clean procedure.

Figure 19. The small unit module in action.

Figure 20 Terraces come first.

Figure 21. Sidewalks are last but not the end.

Each property had to be attended individually. Detailed site surveying was fundamental to get the exact position of the entrance door which determined which properties could be tied together with the same terrace and where the access steps should be located.

The type of uses was also very important. Compared to the residences, banks, supermarket, cafes, restaurants, etc., needed a more defined and coordinated design for exterior furniture, rain and sun protectors, and for the best-possible control of roof drain spouts that remove the water from the terraces, roofs and balconies. If such design considerations are minimized or omitted in the contract, they create future maintenance for the contractor and owners.

Figure 22. Many, many utility boxes.

Figure 23. Roof drains onto a terrace.

Figure 24. Reversible adaptations

Figure 25. Permanent modifications.

One difficult aspect to control is interventions by the inhabitants of the properties. Their interventions can work well with the project or destroy curbs with ramps for motorcycles or for load-carrying equipment. In most cases, changes are dangerous for other citizens and are a visual nuisance. Changes made by residents reflect their difficulties in accepting some of the changes, where they seem to

oppose any modification of personal but public space that might have a wider benefit to other user citizens. In some instances, this can be worsened by the Municipality and the designer's willingness to attend any type of suggestion or requirement made by an individual regarding special needs such as access to stores or shops or the location of steps in relation to entrance doors.

Figure 26. The new look of business.

Figure 27. Longitudinal view (Figure 26).

This experience is presented here as a model that could be adapted and improved in cities around the world. It demonstrates the immense benefits that pavers bring them as a material that is becoming the standard for a higher quality of life.

Figure 28. Inner circulation in zigzag.

Figure 29. A few accesses had to be solved.

Figure 30. Small business demand little space.

Figure 31. Special business demand space.

Figure 32. The Saint Jude Parish.

Figure 33. The church's new atrium.

Figure 34. Steps up, left side.

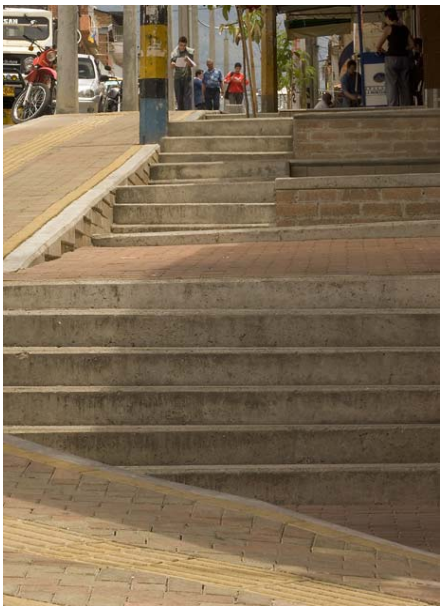

Figure 35. Steps down, right side.

Figure 36. Even the Madonna got a new altar.

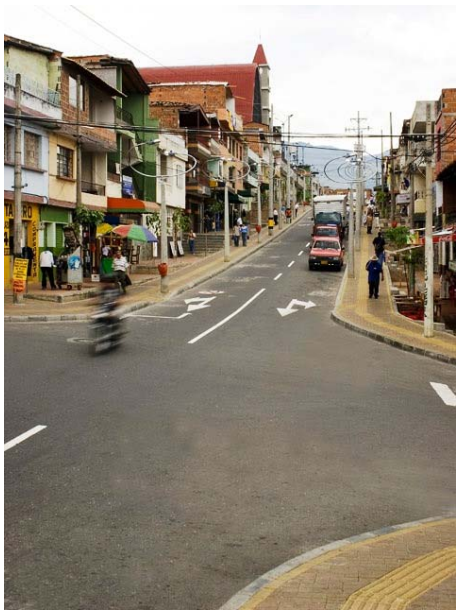

Figure 37. From the distance it may look normal.

Figure 38. A closer look and the continuity are apparent.

Figure 39. Look close up and you see movement.

This urban proposal will be duplicated in phase two (2006-2007) and in further interventions in the city. It has already been used in the Metro-cable project, to rebuild an up-the-hill boulevard, running under the first line of the cable system.

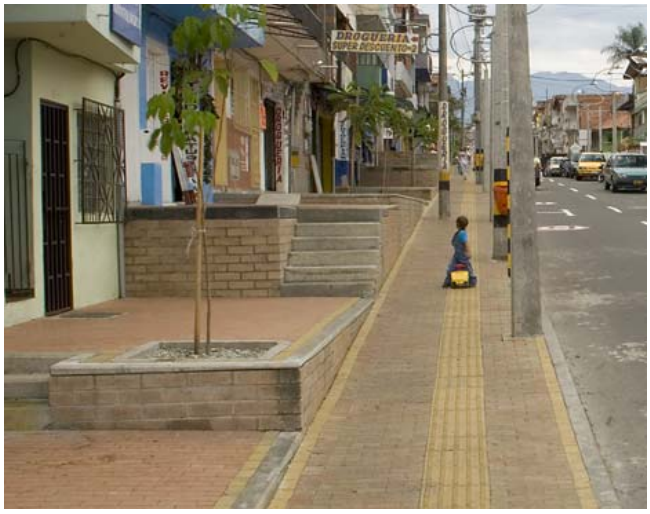

Figure 40. Space for children to play.

Figure 41. Space for parents to do business.

3. A FINAL CONSIDERATION

As any other urban project, it has to be presented and discussed with the community before the final designs are approved. Most projects are selected and approved from a program of regional projects by the Local Community Boards. The projects receive their ongoing, critical surveillance and the same from other civic groups.

The original resident opposition and discontent from circulation difficulties, dirt, demolition debris and construction material everywhere slowly changed from contempt to acceptance and pride. Newspapers have become an important tool for the communities to express their feelings and for the local government to channel information so that it reaches every neighbor regardless if they attend meetings in advance of the project.

Figure 42. "Pedestrians set the pace in Castilla" (El Colombiano newspaper)

Figure 43. "Castilla's heart is two blocks long. (El Colombiano newspaper)

Some time after the project concrete pavers are adopted and owned by the residents and users. They become an identifiable symbol of the project and reflect the positive feelings and character the designers wanted to bring to the neighborhood. While not explained outright, technical advantages of concrete pavers are understood by every neighbor.

4. REFERENCES

[1] Colombian Institute of Cement Producers (ICPC), Architecture and Urbanism Laboratory (LAUR) / School of Architecture And Design / Pontifical Bolivarian University (UPB), Germán G. Madrid, Giovanna Spera, Manual for the Design and Construction of the Components of Urban Space (MEP), Medellín, 2003, 366p.

5. ACKNOWLEDGEMENTS

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