Title: Sustainable mobility for irregular settlements

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Context and proposal of research

This article brings an academic experience and stresses the issue of mobility on irregular settlements arising from industrial activities. The current pattern of disorder and the heavy traffic derived from industrial use, directly affect inhabitant’s movement safety and bring substantial impact on quality of life as well as on natural environment (PLANMOB 2015). To give students skills to tackle this problem, a project was conducted on the region called FERCAL, aiming at defining a more sustainable model and finding strategies to promote quality of life and reconciliation between economic development and local environmental support capacity.

FERCAL is the first operational town of Federal District (FD), emerged along the axis road of the DF-150, as the main channel of production flow towards the capital. This spontaneous occupation happened in a longtime process and gained economic importance along time. Today its urbanization consists of 14 communities, from which six are rural, while the others are urban, concentrating approximately 30,000 inhabitants in the region.

Despite the size of industrial activity, resources from tax revenues are not reinvested on local public services or benefits to the community. Moreover, the production process of cement and asphalt triggers a number of factors that directly affect urban environment and life quality. All of this creates a conflict scenario, with highlighted problems such as air and aquifers pollution, followed by lack of infrastructure and public services.

Urban mobility is one of the main local problems, once settlements got spread without any planning along the highway DF-150, leading to a framework with great risk of accidents, as attests the large number of pedestrian injuries. Broad topic to be discussed, the debate about transport covers issues of urban development, such as land use and occupation, in addition to health and quality of life, intimately linked to the conditions of daily locomotion.

Methodological issues

The assessment method, on which the research is based, started on learning about the fundamental principles of inclusive spaces. These principles were presented by Cristopher Alexander (1965) in his studies of ordered overlapping systems, and by Stanford Anderson (1986) in the field of urban ecology, where the latter defended the constitution of spaces as sympatric environments; both authors suggested a place in which the coexistence should be outlined by natural settings. A bibliographic review enabled the identification of principles and criteria associated to the street evaluation related to the demands of pedestrians movement. It is expected that such criteria indicates the efficiency of street as an inclusive space.

Results obtained and expected

During the analysis process it was possible to identify the major connection crossings between communities of DF-150, by surveying conflict points between pedestrian movement and motor vehicles traffic. Such points represent spaces of urban life’s convergence, unfortunately, they turn to be completely deprived of infrastructure.
The main objective is to overcome the logic of a car oriented design and transform hostile spaces into pedestrians inclusive places, favoring social exchanges and communities quality of life. The idea of DF-150 transformation counts on the support of Federal District transit department (DER-DF), which attests to the current model exhaustion related to the industrial production flow in this highway, unsuitable to the urbanization level of that region.

Conclusion

The premise of a new mobility plan should be to protect urban environment from impacts generated by freight vehicles traffic, and develop a model oriented to rebalance the functioning of vial space by privileging pedestrians and promoting the social content of the streets.

It is expected to extract from this research tools that assist the promotion of an urban design capable to generate more integrative spaces, through a participatory process with the involvement of community.

The triad established by Teaching – Research – Extension makes possible the formative process of academic community, and can also enable the necessary transformations of society. It also brings the opportunity to demonstrate the ability of university centers to contribute on social demands, in a more inclusive and participatory way.