Adaptación metodológica en el diseño y desarrollo urbano de bajo impacto para el manejo de aguas pluviales en Colima, México [

2019

text (article)

Analítica

Context: Cities around the world share similar experiences of urban transformation, due to the urbanization development model that is responsible for around 70% of the global CO2 emissions. The challenge in urban matters is to work more at a city level, in order to mitigate the GCC and the effects that this produces. Method: This study case, of a very small city in Mexico, represents the perspective of Low Impact Urban Design and Development (LIUDD), contextualizing the French urban planning framework, where the water resources management is a priority as an adaptation strategy. Colima city presents a disorderly horizontal growth; therefore, the extension of impervious areas has caused run-off and road congestion, affecting the population and urban infrastructure. Results: The North-West zone represents an area of opportunity to deal with these problems. Our results show that the study area presents an important level of soil occupancy (COS = 0.76-1.00) obtaining a runoff coefficient, CE = 0.96. In addition, it has a low population density (51-100 inhabitants / ha), with 92% of motorization. In this way, the road infrastructure occupies 91% of the surface of public space, so it presents an area of opportunity for multifunctional infrastructure. The proposal, through Sustainable Urban Drainage Techniques implemented in main roads, reduces the CE to 0.90, and the volume of floods by 203%, prioritizing the active modes of transport. It is recommended a comprehensive management of water supported by a regulatory framework, which prioritizes the LIUDD. Conclusions: It is also recommended to create a coordinated agency composed by different representatives of the sectors involved, with the aim of generating multifunctional projects for the management of stormwater and mobility in public space. Also, this independent agency can be useful in managing new ways of planning the urban development, in order to mitigate and adapt the city to the climate risks that are happening

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