

Study on the relation between urban planning and noise level

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Different streets of a city of Spain were randomly selected and analyzed, extracting 135 different urban variables. The urban variables were compared with measured noise levels, and the possible significance in the relationships among them was analyzed. From the variables with a significant correlation, a multiple regression model for urban traffic noise was developed, which allows explaining 63% of the variability of urban noise. In this regression model, only eight of the initial urban variables were included. The obtained model was validated, and its prediction capacity was analyzed with 30 new randomly selected independent sampling points, showing a global uncertainty lower than 2 dBA, similar to that obtained in noise mapping techniques. The proposed methodology could be extrapolated to other cities, and the obtained models could be an important tool for city planning agents. © 2016 Elsevier Ltd. All rights reserved.

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