

Environmental Analysis of Urban Communities: A Case Study of Air Pollutant Distribution in Smouha Arteries, Alexandria Egypt

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Abstract : Smart Growth, intelligent cities, and healthy cities cited by WHO world health organization; they all call for clean air and minimizing air pollutants considering human health. Air quality is a thriving matter to achieve ecological cities; towards sustainable environmental development of urban fabric design. Selection criteria depends on the strategic location of our area as it is located at the entry of the city of Alexandria from its agricultural road. Besides, it represents the city center for retail, business, and educational amenities. Our study is analyzing readings of definite factors affecting air quality in a centric area in Alexandria. Our readings will be compared to standard measures of carbon dioxide, carbon monoxide, suspended particles, and air velocity or air flow. Carbon emissions are pondered in our study, in addition to suspended particles and the air velocity or air flow. Carbon dioxide and carbon monoxide crystalize the main elements to necessitate environmental and sustainable studies with the appearance of global warming and the glass house effect. Nevertheless, particulate matters are increasing causing breath issues especially to children and elder people; still threatening future generations to meet their own needs; sustainable development definition. Analysis of carbon dioxide, carbon monoxide, suspended particles together with air velocity or air flow has taken place in our area of study to manifest the relationship between these elements and the urban fabric design and land use distribution. For conclusion, dense urban fabric affecting air flow, and thus result in the concentration of air pollutants in certain zones. The appearance of open space with green areas allow the fading of air pollutants and help in their absorption. Along with dense urban fabric, high rise buildings trap air carriers which contribute to high readings of our elements. Also, street design may facilitate the circulation of air which helps carrying these pollutant away and distribute it to a wider space which decreases its harms and effects.

Keywords : carbon emissions, air quality measurements, arteries air quality, airflow or air velocity, particulate matter, clean air, urban density

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