

## Environment and Sustainable Development of Urban Areas

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### ABSTRACT

The subject of research is about the advent of Industrial Revolution in Europe after that the trend of the migration of rural inhabitants to big cities and consequently presence of automobile that causes the changes of the appearance of cities. One of the changes is environmental pollution that results of evolutions after Industrial Revolution in metropolitans ,for solving this problem sustainable city's subject was propounded that its meaning is" hold in higher" and derived from Latin .In other words every society must be basically supported by their present and future residents. .After that the scholars propounded the subject of scientific sustainable urbanism and naturally in order to achieve this goal, a series of principles are put in sustainable city framework. The following are principles: Current decisions ought not to endanger the children's future or the future generation. We are all responsible for our individual or groups proceedings. .The natural resources have to be used justly, a sustainable society not scarifies for another sustainable society. The use of renewal sources is encouraged, moreover; the uses of throwaway sources have to be minimized. The use of renewal sources ought not to be used more than the rate of productivity. Variation in culture and economic are respected. Every society must deal with to health, vital and security field in order to provide cooperation, education, employment, wholesome entertainments, and cultural development. Sustainment is applied to potency of society, ecosystem or every active system that can continue Their activities to unknown future without any erosion and depletion of pivotal sources which forced it collapse. After clarifying the principles and studying a case of megalopolis we want to find the relation between sustainable urbanism and its role in reducing the pollution, therefore the residential Christie Walk research in the heart of Adelaide is referred and finally by studying a megalopolis and suggesting the main goal which is the role of stability in reducing pollution, the main goal is modeled by various tools for instance: software, studying in same field and investigating similar samples. Obvious that for making better the stability and following the reduction of environmental pollution the following agents must be considered:

.Making clarify the role and position of sustainable development in urbanism

.Cognition of views and global experiments in sustainable urbanism field

.Analyzing agents and effects of sustainable urbanism in megalopolises and prevention of pollution environment

.Codifying essential principles and criterions in sustainable urbanism

In this thesis we want to realize that what degree sustainable urbanism could reduce the environmental pollution and is or isn't there a meaningful relation between stability and the reduction of pollution?

2- What is the position of the Land use planning and design and reduction of pollution? Having been answered to above-mentioned questioned, the designs will be suggested based on sustainable urbanism, in order to prevent the environmental pollution in metropolitan areas.

**Key words:** Sustainable, City, Christie Walk, Urbanization.

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### INTRODUCTION

With the advent of Industrial Revolution in Europe and after that the trend of the migration of rural inhabitants to big cities, consequently presence of automobile, changes the appearance of cities, also accumulation of crowd in these regions all cause to make some decisions about organizing the cities in west countries. These decisions made progress in advanced countries, inasmuch as the advanced and beautiful cities are seen there. Obviously, the development of these cities chiefly is based on city designs and modern city projects, one of the effects of development of cities is increased growth of population in the world which has basic effects and mostly disastrous effects on natural lands on the earth. Naturally, the growth of city causes to expansion of roads and consequently overuses of energy, destruction of forests and extinction of plant and animal species. Worriment about future environment of earth and its sources is deniable fact that nowadays takes interest of people. Rapid growth and development of cities in the last decades confronts most of the countries in the world with serious problems. One of the problems is pollution of environment that these changes are due of urbanism with no rudimentary principles. In this section Sustainable development is propounded.

#### Definition of Sustainable Development

The word of "sustainable" is derived from Latin word, Subtenir, which means hold in higher or keeps in basic. Every society must be support basically by their present and future residents. In some places people are Provoked by

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meaningful combination of physical, cultural, and moral features to support and care of their community. In fact these places are those in which sustainment is established in the best way. "Sustainment is applied to potency of society, ecosystem or every active system that can continue their activities to unknown future without any erosion and depletion of pivotal sources which forced it to collapse". Sustainment or stability is defined as agent for providing daily needs. In such a way that not put the potency of future generations at risk. The concept of sustainable is thinking about our behavior in higher levels provided that it our options have profound effect on the future of environment and people's health, and keeps our life far from bad effects. Obligation to protect and observe the sustainment includes obligation to execute creative and responsible activities. The subject of sustainable development and urbanization and their effects which prevent of pollution in Megalopolises are discussed in this thesis. In order to distinct the concept of sustainable development, it was already defined and with the inspiration of this concept it could be possible to mention to sustainable urbanization and the principles of sustainable city.



1-Sustainable City Diagram

### Sustainable urbanization

What is the meaning of human society? Sustainment or stability has relative meaning, being stable or sustain means to progress and continue. Stability is a direction not a goal. The sustainable city is the city which preserves and improves the welfare of its residents whether in long or middle period of time and we can build the highest quality of life. Stability indicates that incorporated decisions are conducted in the economic, ecologic, and social results. Sustainable environment is supposed to be perseverance of natural resource which compels us to care about spending renewal materials and water and not overuse substances which natural system cannot provide. Moreover, we remember that the proportion of our expenditures of throwaway materials not be more than of reasonable limit that the natural sources cannot compensate; the best instances are oil and fossil fuel that don't renew after use. At last the meaning of the sustainable environment is to observe this principle which indicates that the proportion of scatter contaminant in atmosphere and nature never be more than the absorbed capacity in air and soil and not be more than the nature's ability of refinement. Stability is not a dream and is not something which not changes: it is an inner, creative, and balance process that forms textures of all decisions...stability is to administer the city or a town in which city ecosystem is impelled by activities and makes it unbalanced. Each city is operated as unite organization and its meaningful results will be overt. Our world is losing its sources and but regard to inner aspect and certain entrance nothing is happened, but the hatred of people in opulent societies of pollution increased ,hence; it makes so cogent to stable our cities meaningfully and clearly. The better condition in relative stable compels us to evaluate features which effect on input and output principles, probability soil, water, buildings and transportation and aeronautics administration have to be considered in this course.

### The principles of sustainable city

.Current decisions ought not to endanger the children's future or the future generation. We are all responsible for our individual or groups proceedings. The natural resources have to be used justly, a sustainable society not scarifies for another sustainable society. The use of renewal sources is encouraged, moreover; the uses of throwaway sources have to be minimized. The use of renewal sources ought not to be used more than the rate of productivity. Variation in culture and economic are respected. Every society must deal with to health, vital and security field in order to provide cooperation, education, employment, wholesome entertainments, and cultural development.

.Sustainment is applied to potency of society, ecosystem or every active system that can continue their activities to unknown future without any erosion and depletion of pivotal sources which forced it collapse. Interrelated research or a practical sample of sustainable urbanism is another research which is conducted in Australia; it is enunciated in the following:

Australia has most per capita in carbon dioxide production among developed countries, and horizontal development of Australia's cities as basic reason for producing the greenhouse gases is estimated. Following Kyoto Treaty bustling activities are approached to decrease the pollution, because of worryment about disruption in climate balance, the flow of sea's coasts and becoming the earth warm. Modern political city of Federal and local government are subsisted in order to decrease the dependence to automobile and transition in development. After investigation in the principles of sustainable city, it could be realized that a city impelled to stability, its pollution decreased concerning sustainment of environment, thus the principles of sustainable city has to establish in megalopolises.



2-Sustainable Development

## Review of literature and Relevant topics

One of the relevant researches to this thesis is discussion in theories about sustainable city which is described summarily. If development is considered as “ total movement of social system ahead” or continuous ” advancement” of society toward better life and more moral , human stands in the pivot of this movement and advancement . But development is ideal in continuity and includes popular. Without scarifying the future generation in providing their needs and without damaging the environment, development has to provide the current needs of all communities. Such a development is stable and enduring; this development is a sort of growth which belongs to all people without mortgaging nature, human and without any unjust inequality. The meaning of sustainable environment is to protect the natural invest which compels us to be careful about environmental pollution like water pollution and soil pollution. In other words the rate of scattered contaminants in the atmosphere ought not to be more than of the rate of absorbed capacity these contaminants in the air, water, and soil and never be more than nature's ability of refinement. Kyoto protocol is a relative research for more investigation about climate changes as environmental pollution that contracted between some countries. We mention to the selections of it in order to clear some issues. In 1980 temperature increased and as a result harmful effects on environment were observed. Many international conferences were convened following this phenomenon in order to solve predicament. In 1990 United Nation convened an international committee to confront with destructive effects of climate changes. The results conduced to contract Kyoto protocol. Industrial countries are obligated to decrease the 5.2 percent between 2008-2012 and 1990 of their dissemination greenhouses gases (co2, ch4, N2O, HFCs, PFCs, SF6) in this protocol. ) it is necessary to mention that Indo-China countries are exempted. This Geneva Convention obligated the developed country to transfer technology to countries which are developing. In this treaty cited that economical development and indigent obliteration are right. In 2001 president Bush named it washy contract and stated that this treaty not compel the developing countries Like developed countries to decrease their greenhouse gases, as a result this damages to US economy it is necessary to mention that US is responsible for disseminating 25 percent of greenhouse gases .The greenhouse gases produced by automobile and factories fuel or fossil fuel particularly centuries causes Tories two F degree in the temperature , to melt the ocean's iceberg, and to rise water levels of oceans and seas .According Kyoto treaty countries which cannot to decrease those gases are fined and with repeating emphasis on development mechanism Clean and pollution reduction, treaty stated that developed countries can invest more than 13 millions \$ in 2006-2007. Although US is the most user of fossil fuel and greatest producer of greenhouse gases, president Bush declared his opposition to Kyoto protocol and told that performing this treaty caused many people lose their job ,but Canada attempts to find procedures to negotiate with US. In this assembly emphasized on increasing the use of new methods of renewal energies , decreasing co2 by solidifying or liquidizing and injecting it to the ground, co2 absorption by plants, saving in energy, making and developing procedures which use energies replaced oil and coal, controlling co2 dissemination, protecting forests ,and using farmlands properly .one of the practical and relative research about sustainable urbanism and its effect on preventing pollution in megalopolices is Christie Walk research situated in Adelaide, the state of South Australia.

### Residential Christie Walk research

This research situated in the heart of Adelaide is a sample of creativities for constructing sustainable city. In this research 27 buildings which located in an area of 2000 square meter were built, and Urban Ecology Institute attempted to fulfill their sustainable development ideals such as saving the use of proper materials by observing technical and executive principles, moreover; the healthy and pleasure environment were provided for their residents. Interior design was constructed in a way which the residents keep the temperature in average degree without the use of refrigerant systems. Cool breeze enters through small windows on the first floor and extra warmth exits through apertures located in the corners of ceiling. With installing absorbing solar energy sheets the rate of using electricity minimized. Materials used are recyclable and non-toxic, moreover; materials of destructive buildings were used like clinkers and woods, which were stored, were used again. Non porter walls and ribs are made from wicker and compressed straw and ionolith were used instead of curbstones. In order to reduce the cement and also to reduce depreciation, a light concrete was used that not only has resist in high pressure but also has low specific gravity. In painting and coloring doors and windows, colors are used which has minimum toxic and in inner installation the use of PVC pipes are Inhibited. Floorings are bamboo and linoleum. In order to save water, a circle is considered which gather the rain on the roof and move it to nether tank that is not used for drink.

### CONCLUSION AND DISCUSSION

The goal is that with sustainable development and following that sustainable urbanism in megalopolises whether the pollution of environment will decrease and if it happens what is the degree of such pollution? Regarding determined goal, the presentation of a headline for sustainable urbanism is necessary and in framework of major goal, the minor goals are followed.

- A. Making clear the role and position of sustainable development in urbanism
- B. Cognition of views and global experiments in sustainable urbanism field
- C. Analyzing agents and effects of sustainable urbanism in megalopolises and prevention of pollution environment
- D. Codifying essential principles and criterions in sustainable urbanism

In this thesis we want to realize that what degree sustainable urbanism could reduce the environmental pollution and is or isn't there a meaningful relation between stability and the reduction of pollution?

2- what is the position of the use of city lands in urbanism and reduction of pollution?

In noticed thesis a sample of megalopolis was selected and the discussion of sustainable development and sustainable city's principles are investigated. And then compared with a city which disregarded to the principles, finally concerning to main subject of thesis which is the effects of sustainable urbanism on pollution prevention, we find this relation and distinguish the designation's position of city lands usage in urbanism and reduction of pollution. As it mentioned before, for studying approach first the city must be defined then reach to urbanism definition from various angles and finally to principles of sustainable development definition and inspiring from it the sustainable urbanism issue is investigated. By sustainable urbanism we should realize its role for pollution prevention. Tools used in research are software, modeling city, statistic, mathematical formulations, books, theses, and published articles in this field. In research, modeling and studying must be conducted. In research approaches and their tools as it mentioned two samples of megalopolises s are selected that one of them constructs by observing the principles of sustainable city and the other is unstable megalopolis. We get to the effects of sustainable urbanism in pollution prevention and GIS, Arc info, and Arc view software, modeling and statistic are used in this comparison.

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