

# International Journal of Innovative Research in Science, Engineering and Technology

(An ISO 3297: 2007 Certified Organization)

Vol. 5, Issue 4, April 2016

## Assessment of Environmental Planning and Building Design for Construction Project

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**ABSTRACT:** The current study aims to assessment of environmental planning and building design for construction project. The respondents selected sample size 50 for stratified random sampling method. The researcher statistical tools used for t-test and correlation. Result indicates that there is a positive correlation between the environmental planning, building design and construction project. Therefore, it is concluded that there is a significant relationship between environmental planning, building design and construction project. Also It is study concluded that the effects of a proposed project, plan or program on the environment. In other words, EIA is an administrative process that identifies the potential environmental effects of any proposal along with its advantages and disadvantages on environment. Positive effects are maximized whereas; adverse effects are minimized to greatest possible extent.

**KEYWORDS:** Environmental Planning, Building design, construction, project.

### I. INTRODUCTION

The study environmental assessment should be undertaken the developing environmental planning. This will identify the areas of environmental impact and potential risks management procedure then be put in place of eliminate, minimize the impact of new building as opposed refurbishment are changes in working practices. The environmental assessment is a process to assess the environmental consequences of any project and design was properly mitigation plans to minimize the possible adverse. It is a process of identification, prediction, evaluation and mitigation of biophysical, social and other relevant effects of developmental activity on environmental plan to make commitments.

It is considered the appraisal of impact that any developmental activity may effect on the environmental planning. Also positive or negative, harmful benefited. The construction industry is rapidly growing to major environmental impact of construction project are to be destruction, loss of arable land, loss of biodiversity, waste disposal, pollution, desertification, soil erosion and material wastage etc., Further the study researcher human activities are both beneficial and harmful for environmental planning such as biological, cultural, social, economic and developed project plan are evaluated.

Design: The building design it was procurement route, travel plan, working methods, standards, ecology and landscape, energy use and energy source, flexibility and durability it was waste management, water management, material selection and pollution of the design.

It has been very few contractors and private developers spend efforts in considering the environment and developing the concept of receding building materials because most of them ranked completion time as their top priority and pay little attention to the environment. Especially the project manager with regarding to environmental impact of construction processes needs to be enhanced.

### II. IMPACT OF CONSTRUCTION ON THE ENVIRONMENT

The development project plan to improve the quality of life has some built-in positive and negative impacts. The development project should be planned in such a manner that it has maximum positive impacts and minimum negative impacts on the environment (Kaur and Arora, 2012). Prediction of the environmental impacts of construction in the early stages of projects, may lead to improvements in the environmental performance of construction projects and sites (Gangoellis et al., 2011). It is expected that construction damages the fragile environment because of adverse impacts of construction. This impacts include resource depletion, biological diversity losses due to raw material extraction,

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landfill problems due to waste generation, lower worker productivity, adverse human health due to poor indoor air quality, global warming, acid rain, and smog due to emissions generated by building product manufacture and transport that consumes energy.

**Vehicles:** vehicles entrance and exist to the site is very important task, which generate a large amount of pollutants. Transport materials to site of work cause a large amount of dust. Also vehicles wheels contain large amount of suspended materials such as dust, sand, clay, and cement. These dusts are suspended with air, soil and water. Furthermore, vehicles transport this dusts out the site, this means that not only the labours will harm, but also the public.

**Construction activities:** The majority of construction activities causes an adverse effect on the environment, and generates a large amount of dust. These activities such as excavation, backfill, earthworks, bleaching, painting, tiling, mix of concrete, and finishing works.

**Construction materials:** These materials include cement, aggregate, sand, clay, lime, wood and calcium carbonate. Manufacture these materials caused a capture exposure to its emissions. This means that workers, managers in factories, and neighbours of these factories are the most injured people. Also labours who are working in the site and using these materials in their work are suffering from high exposure to the dust of these materials.

There is a lot of people exposing and breathing dust every day regardless they are labours, residents, or those who are using roads near to construction sites. Respondents in Gaza believed that this pollutant is very dangerous, serious, and have an adverse effect on public health and environment. The risk of exposure to dust regardless to its cause (from vehicles, construction activities, construction materials manufacture or delivery) is because dust create health problems, particularly for those with respiratory problems, cause environmental degradation, including air, soil and water pollution, obscures vision, damage or dirty property and belongings, and create unsafe working conditions.

### III. REVIEW LITERATURE

**Adnan Enshassi (2014)** conducted a study on an evaluation of environmental impact of construction project. This study reveals that direct and indirect effect on the environment. It is suffering from deteriorating ecosystems due to limited natural resources, economic and political situation, escalating population growth and lack of awareness an environmental issue. The researcher total sample size is 50 were distributed to professionals working in the construction industry. The result proved that dust generation, noise pollution, operations with vegetation removal and air pollution are the most significantly environment. Also the result shows that labours and those are working in construction sector are the most slices of people exposing every day to health problems such as respiratory problem, liver, cancer, hearing impairment, hypertension, annoyance, sleep disturbance and other cardiovascular adverse effects. Further it is concluded that the major construction impacts on environment and make environmentally friendly construction planning in the early stages of construction.

**Vivek Kumar (2016)** made a study on Environmental Impact Assessment of Construction Projects. The integration of environment into development planning is the most important tool in achieving sustainable development. EIA certainly has a vital role to play in addressing environmental issues surrounding project development. EIA is considered the starting point in the process of implementing sustainable development agendas. In terms of benefits, it has identified EIAs as the most effective tool for integrating environmental concerns in development planning and implementation. EIA also provide a good example on how a combination of 'top-down' and 'bottom-up' approaches could improve democracy and service delivery. The present review focuses on EIA process, which is necessary for providing an anticipatory and preventive mechanism for environmental management and protection in any development.

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## IV. METHODOLOGY

### Objectives

- 1) To find out the level of environmental planning and building design for construction project based on government and private.
- 2) To examine the significant relationship between environmental planning, building design and construction project.

### Hypothesis

- There is no significant difference between environmental planning and building design for construction project based on government and private.
- There is no significant relationship between environmental planning, building design and construction project.

### Sample size

50 samples are selected based on stratified random sampling method.

### Data Collection

The researcher selected for primary data are to be collect and interview methods resolve be used. The respondent's will be interviewed and using questionnaire to the data collection.

### Statistical tools used

The statistical tools used for

1. t-test
2. Correlation

## V. RESULT AND DISCUSSION

Table: 1

Correlation analysis between environmental planning, building design and construction project.

Variable	Environmental planning
Building design	0.287*
Construction project	0.362*

\*Significant at 0.01 level

The above table reveals the correlation result between education environmental planning, building design and construction project. Result indicates that there is a positive correlation between the environmental planning, building design and construction project. It is also significant at 0.01 level. Hence the stated null hypothesis is rejected and in alternate hypothesis there is a significant relationship between environmental planning, building design and construction project.

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## FINDINGS

Result indicates that there is a positive correlation between the environmental planning, building design and construction project. Therefore, it is concluded that there is a significant relationship between environmental planning, building design and construction project.

## VI. CONCLUSION

The current study aims to assessment of environmental planning and building design for construction project. The respondents selected sample size 50 for stratified random sampling method. The researcher statistical tools used for t-test and correlation. Result indicates that there is a positive correlation between the environmental planning, building design and construction project. Therefore, it is concluded that there is a significant relationship between environmental planning, building design and construction project. Also It is study concluded that the effects of a proposed project, plan or program on the environment. In other words, EIA is an administrative process that identifies the potential environmental effects of any proposal along with its advantages and disadvantages on environment. Positive effects are maximized whereas; adverse effects are minimized to greatest possible extent.

## REFERENCES

- [1] Adnan Enshassi (2014) An evaluation of environmental impact of construction project. Rev. ing. constr. vol.29 no.3 Santiago Dec. 2014.
- [2] Gangoellis M., Casals M., Gassó S., Forcada N., Roca X. and Fuertes A. (2011), Assessing concerns of interested parties when predicting the significance of environmental impacts related to the construction process of residential buildings. Building and Environment, 46(5):1023-1037.
- [3] Kaur M. and Arora S. (2012), Environment impact assessment and environment management studies for an upcoming multiplex- a Case Study. IOSR Journal of Mechanical and Civil Engineering (IOSRJMCE), 1( 4): 22-30.
- [4] Levin H. (1997), Systematic evaluation and assessment of building environmental performance (SEABEP), paper for presentation to "Buildings and Environment", Paris, 9-12 June, 1997.
- [5] Muhwezi L., Kiberu F., Kyakula M. and Batambuze A. (2012), An assessment of the impact of construction activities on the environment in Uganda: A case study of Iganga municipality. Journal of construction Engineering and Project Management, 2(4): 20-24.
- [6] Tam C. M., Vivian W. Y. and Tsui W. S. (2004), Green construction assessment for environmental management in the construction industry of Hong Kong. International Journal of Project Management, 22(7):563-71.