Sustainable Product Development (Nature inspired design strategies) - Review

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Abstract:- The main fuse of paper of develop sustainable product which is nature inspriated i.e. it balanced combination of social, economical environmental aspects for this we reviewed different papers on sustainability in which different strategies are applied to develop radial sustainable product this strategies called Nature inspired strategies like bio-mimicry cradle to cradle, nature capitalism etc. We studied how this strategies are applied by designer or product developing company or how strategies are helpful or what type of problem are faced by designer in developing radically sustainable product. By studied we observed designer face many problem for applying this strategies or designer have to take decision by experience.

Key wards:- Sustainable Product, Nature inspired strategies, engineering design, ethical issue.

INTRODUCTION:

Sustainable Product Development is concerned with balancing economic, environment and social aspect in the creation of product & services. In current design companies mainly focus on eco efficiency as the strategy for sustainable product development. Eco-efficiency means creating more goods & services with less use of nature waste & population for this there are many nature inspired strategies are Bio-mimicry .Nature capitalism & cradle to cradle are applied to design in a radically different goal driven manner. Nature inspired strategies means "learning from Nature." Objective of this research Is this nature inspired strategies sustainable product in ethical issues or is there any method which give good results to develop radically sustainable product.

A brief Review of some selected references on his topic is presented here as literature review.

LITERATURE REVIEW:

1. Ingrid de pauw, Prabhu Kandachar, Elvin Karan, David Peck: In this paper they describe different nature inspired design strategies which take nature as source of inspiration, tool & method for product development. Research give brief information on different types of strategies, how it selected. They take oradle to cradle bio-mimicry, nature –capitalism for study from this concluded there is no brief information how this strategies are applied by designer for sustainable product development or for developing radically sustainable products.

2. P.V. Kandachar, E Karana, I de Pauw: In this project they applied nature inspried design strategies in field work for this they created group of 6 students for each group different strategies like cradle to cradle, bio mimicry, eco-design are applied to depth of design considering material, from, function & need of design a product, From this study they observed that the bio-mimicry & cradle to cradle are very helpful for student to develop design strategy &concept. The use of example from nature that are cary to grasp –Seems to help them to effectively present he design solution to there clients.

3. Anke Van Group : The paper deals with ethical issue like safety i.e the design product is not harmful to nature for normal orb radical design for this author for normal or radical for this author selected the example of design procers or minimal consideration taken by designer to design lightweight Dutch EVO car & light trailer to carry load, piping & equipment & Bridge ,from study they observed the design of Dutch EVO car & light trailer are relative design as there as there is no fix structure like dimension , weight, paper work but for design pipeline &b bridge there is fix structure as they are normal design for this they concluded for design radical designer must be more operationalisation of ethical issues like safety etc. Designer by its experience can take into consideration some point which are not stated by customer to design a product.

4. Ahmad mayyas , Abdel paouf mayyas Ala Qattawi Mohammed a Qmar : The paper deals with increase fuel efficiency of vehicle by reading the weight of vehicle by reading the weight of vehicle by proper selection the material which is social, environment & economic non toxic & can be recycle for which they used LCA (Life cycle analysis) the main work divided into 5 stages, material extraction, production phase material selected should be conform .It also take into consideration safety factor ,fatigue factor. The end result is the scaling method is very useful for selecting the

material for designers & engineer for different design they can use this chart for selecting material .The chart are simple & quick way of assessing whether a material is suitable for case or not. Used sustainable material selection method may afford brief tool to incorpate all sustainability aspects in one design model.

CONCLUSION:

From this study we understand in brief different nature inspired design strategies , how this design strategies are useful to develop a radical sustainable product. By taking into consideration the different example from industry we understand is this strategy can help design to develop sustainable product. A sustainable product design is very helpful from environment point of view.

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