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RESEARCH ARTICLE

NATURE BASED DESIGN IS MAJOR CONTRIBUTING FACTOR FOR IMPROVED WELL BEING AMONG USERS.

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Abstract

This paper summarizes the effects of biophilia on well being of users. How interaction with nature proves beneficial for humans in different ways is discussed. Existing body of knowledge was researched to consolidate the facts and figures that quantify the impact of nature on habitat human population. Various studies were considered to conclude the effects in different areas of performance.

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Introduction:-

In 1943, E.O. Wilson, Professor of biology at Harvard coined Biophilia as the effect that describes the link between nature and humans. In a broadcast at Radio ABC (Kellert, 2012) elaborated as“(meaning Biophilia) ...implies that we are nature-loving because we are of nature; our brains, our bodies evolved in nature, and as biological beings we need it to sustain our physical and emotional health.”

In many studies the effect and returns on humans had been established with the more recent being the research study named ‘Mappiness’ by the LSE and led by Dr Susana Murato and Dr George Mackerron. Through this study it was established, that “in natural environments humans are more happy” and that “On average, study participants are significantly and substantially happier outdoors in all green or natural habitat types than they are in urban environments”(mappiness.org, 2013).

The study also inferred that human population spends 80% of their time inside buildings. Therefore the link with nature is required, it will increase on a more frequent basis human happiness. It is required to introduce nature both within urban environments and inside interiors, as urban population is going to increase twice in coming decade (according to WWF 2011 annual report).

Material and Methods:-

Introducing nature within urban environments could be seen as more straight forward than those within buildings and tenanted workplace interiors. Questions that arise from clients and designers on the strategy include whether to proceed with installations of ‘real nature’ or imitations with re-produced images and objects from nature.

Real nature features and schemes have been seen to gain better results were observed against artificial. Interiors are fostering the connections between workplaces and nature when they mimic shapes and forms found in nature (Kellert 2005 & 2012), as much as when nature itself is present.

Studies have found that images of nature have been selected by staff for spaces of their own where they wish to regenerate their concentration levels (Thomas & McCrae 2012).

On a psychological and functional level the design features that impact Biophilia, and following Terrapin Bright Green's (2014) research publication where they have filtered them down to few commonly recognised issues and groupings, are:

Nature in the Space Patterns(Visual Connection with Nature , Non-Visual Connection with Nature, Non-Rhythmic Sensory Stimuli, Access to Thermal & Airflow Variability, Presence of Water , Dynamic & Diffuse Light, Connection with Natural Systems),Natural Analogues Patterns(Biomorphic Forms & Patterns , Material Connection with Nature ,Complexity & Order),Nature of the Space Patterns: (Prospect, Refuge, Mystery, Risk/Peril)

Biological effects of introducing plants and greenery of any type, is shown to filter the air around them and affect the moisture levels. So in offices where air can be quite dry this can support the levels of comfort. Attention must be given so that moisture is managed and does not receded the other way causing buildup of bacteria in systems or room corners. An unlikely phenomenon in most contemporary offices but there has not been an effort to introduce moisture yet.

One notable productivity study by the Hescong-Mahone Group took place at the Sacramento Municipal Utility District Call Center, Researchers concluded that those with views of nature handled calls 6-7 percent faster than those with no nature view.

Browning (2012) conducted study to establish relation between economy and biophilia and concluded that office productivity costs are one hundred and twelve times more than costs of energy in the workplace. Terrapin Bright Green released a white paper entitled The Economics of Biophilia, in which exploration of building science examples of how access to nature, at a low up-front cost, can provide very healthy returns. The study concluded that, blood glucose level decreased by 39.7% in forest bathing as compared with forms of moderate exercise, where blood glucose levels reduced by 21.2%(Ohtsuka, 1998).

Within forests, autonomic nervous functions as well as human hormonal secretion are stabilized as humans breathe in organic compounds called phytoncides excreted by the forest. In daylight environments Children progressed in learning of school curricula 20-26% faster. Studies have shown that absenteeism among workers can be reduced by 10% if biophilic work environment is provided (Elzeyadi, 2011)

In research study by Kaplan (1992) it was concluded that office workers who had window views of nature felt less frustrated and more patient, and reported more overall life satisfaction and better health than workers who did not have visual access to the outdoors or whose view consisted of built elements only. The positive effect of nature may also extend to the immune system, thereby directly affecting human physical health (Parsons, 1991).

CEC (2003). The study of workers in the Sacramento Municipal Utility District's customer service call center found that having a better view out of a window was consistently associated with better overall worker performance: workers were found to process calls 7% to 12% faster when they had. Computer programmers with views spent 15% more time on their primary task, while equivalent workers without views spent 15% more time talking on the phone or to one another.

According to Heerwagen J (2003) observed a detrimental impact on worker's ability to absorb and process new information when refuge-prospect was not designed into the workplace.

According to Dr. Philomena Bluysen (in her book The Indoor Environment Handbook, 2009), the basic human needs as described by Maslow originally in 1943, had the top tier need of 'self-actualisation' adapted in 1970. It was transformed into 3 needs by adding cognitive and aesthetic needs; aesthetic needs are described as those related to the search for beauty, balance, form, things that are either changing or aesthetically pleasing. She includes the view from a window and indoor environments within these; which we assume will need to be visually pleasing to become part of the equation. So giving access to view of an attractive natural ever changing scene, enhances workers sense of comfort connectedness to nature, self-actualisation and thus wellbeing.

Result and Discussion:-

The requirement for presence of nature can be easily incorporated into the design of new buildings. This can be integrated in refurbishment of old buildings. Where an existing building is being investigated for leasing and fitted out by an occupant, they must access prior to agreeing a lease, whether the impact to its staff and their productivity is going to be detrimental to their businesses performance.

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