

5th World Congress on**SMART AND EMERGING MATERIALS****April 19-20, 2018 Dubai, UAE****Sustainable campus design in Dubai promoting physical activity within the built environment****Aishwarya Thomas**

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Physical inactivity is a major health threat to the global population and in recent years, there has been an increasing body of literature about the fact that the people in Dubai are not getting enough physical activity. According to a disease study report, the obesity rate in the UAE is double the world average more than 2.1 billion people; close to 30 per cent of the global population are overweight or obese, the World Health Organization says. This project plans to research the relationship between physical inactivity and architecture. It is essential that architectural design be re-thought to increase the physical activity levels within the built environment. An alternative approach needs to be looked at, when talking about the design framework and it should definitely focus on convenience without reducing activity with the increase of physical activity levels. A smart approach to achieve this would be a range of considerations to increase the amount of physical behaviors within an individual to produce energy expenditure by individuals in Dubai. The concept of interaction with buildings where change and response could be connected with the physical movement alongside the building is an interesting concept. A kinetic energy system where pedestrian foot fall could be used to power a digital screen so the building can interact with the physical act of walking past could be thought off. It could create a fun and innovative environment that encourages people to enter a space. With potential uses being, passive walker past or even urban street dance competitions or events. Pavegen tiling systems is a tile based urban design feature that captures the kinetic energy from a pedestrian's footfall and harvests and/or reuses it to power certain off the grid electrical devices. They will be used throughout the design but mainly with relation to an interactive wall. The kinetic energy from foot fall is stored and used to power the LED lights in the wall to create an interactive relationship between the architecture and the physical activity powering it.

References

1. Cyra, M. (2013). Promoting Physical activity within the built environment.

Biography

Aishwarya Thomas is currently a 4th year student of B.Arch program at MAHE, Dubai campus. The mentioned smart technology including a kinetic energy system and pavagen tiling system, has been referred to for use in her undergraduate thesis project which focuses on creating a sustainable campus, reducing levels of inactivity amongst the youth and young adults and the community as a general in the UAE by establishing certain principles of sustainability within the campus and connecting it to the built environment.

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