

# **Energy Saving of Traditional Buildings Using Building Information Modelling System by Applying Management of Spaces**

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## **Abstract**

In early 2018, KSA has announced their 2030 Saudi vision with the aim to move the economy away from oil profits. There are many objectives to achieve this vision; one of them is reducing the facility management cost for all public projects (Saudi gazette 2018). Implementing Building Information Modelling (BIM) in the whole lifecycle of the project can have a significant impact on reducing cost (Eastman, Teicholz et al., 2011). This project is a case study project in AL-Baha University. The project was remodelled using BIM based technology, then the gathered data was input into the Revit file. This has improved the use of spaces and the use of energy in the building among the four colleges. The challenges with the space became serious when the College of Engineering had to share one of the University's buildings with other three colleges and a clinic. There has been an assumption that some members of the management proposed that their current traditional buildings allow no space for the new college to share classrooms and offer spaces to offices for their faculty members. Further issues have arisen which are related to the use of energy and the cost of the usage. Upon the previous argument, the paper proposes that reorganizing spaces within the selected building could reduce more than 30% of the energy, this may save more than 2 million Saudi riyal of the facility management annual budget. In addition, this paper will offer a new understanding to how the facilities in traditional building should be managed to save energy and provide more space for sharing among the universities' buildings

## **Keywords:**

Energy saving, Al-Baha University, Saudi Arabia, Building Information Modelling System, Traditional Buildings.