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Empirical study into the benefits of the retrofitting of existing commercial buildings to improve energy efficiency, and the property industry's awareness of energy retrofitting and the methods used to evaluate energy retrofits within a South African context.

Lombard, Lesley Joan

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ABSTRACT

The world and South Africa in particular, currently finds itself in the midst of an energy crisis, where the demand for energy far outweighs the supply. The historically cheap availability of electricity within South Africa has exacerbated the problem, with the resultant effect of the South African built environment being responsible for approximately 23% of all Green House Gas emissions within the country.

The built environment is therefore being put under immense pressure to adapt, and lower the amount of electricity consumed. The change is being well received by most as rapidly increasing electricity prices are affecting company profits.

This study investigates the concept of energy retrofitting as one of the solutions to the problem. By using a questionnaire and case study, the research explores whether or not existing commercial buildings can be retrofitted in an economically efficient manner that will result in the quantum of electricity they consume being decreased. The findings reveal that this is indeed possible, albeit that the term "economically efficient" is a subjective one.

The study further explores property professionals' understanding of the concept of energy retrofitting and energy efficiency, and finds that the majority of property professionals do in fact hold a clear understanding of the concept of energy efficiency and energy retrofitting.

Although the hypotheses have been proven to be true, a number of recommendations regarding further study have been made. The study highlights the following recommendations: 1. Future studies in this area should be conducted utilising a larger sample of professionals from across the country as it will allow the research to explore the trends in more buildings and at a more vigorous level;
2. Future research should be conducted into the implementation of energy retrofitting education programs for the layperson;
3. A study of the effect that energy retrofitting has on the rentals that a retrofitted building is able to achieve would be recommended;
4. Lastly this research recommends that a study to identify which elements of a building are most commonly identified by energy audit companies as the primary area to focus on.