

## Challenges in Adopting 3R Concept in the Heritage Building Restoration

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**Abstract :** Malaysia is rich with historic buildings, particularly in Penang and Malacca states. Restoration activities are increasingly important as these states are recognized under UNESCO World Heritage Sites. Restoration activities help to maintain the uniqueness and value of a heritage building. However, increasing in restoration activities has resulted in large quantities of waste. To cope with this problem, the 3R concept (reduce, reuse and recycle) is introduced. The 3R concept is one of the waste management hierarchies. This concept is still yet to apply in the building restoration industry compared to the construction industry. Therefore, this study aims to promote the 3R concept in the heritage building restoration industry. This study aims to examine the importance of 3R concept and to identify challenges in applying the 3R concept in the heritage building restoration industry. This study focused on contractors and consultants who are involved in heritage restoration projects in Penang. Literature review and interviews helps to reach the research objective. Data that obtained is analyzed by using content analysis. For the research, application of 3R concept is important to conserve natural resources and reduce pollution problems. However, limited space to organise waste is the obstruction during the implementation of this concept. In conclusion, the 3R concept plays an important role in promoting environmental conservation and helping in reducing the construction waste

**Keywords :** 3R Concept, heritage building, restoration activities, building science

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