# CHALLENGES IN HOTEL BUILDING REFURBISHMENT PROJECTS IN SRI LANKA

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## ABSTRACT

Amongst the contemporary issues encountered by the buildings, deterioration and obsolescence are in the forefront. The refurbishment has been acknowledged as an avenue to deliver profound solutions to overcome these issues by upgrading, altering, extending, renovating and improving facilities and prolonging building lifespan. Nevertheless, refurbishment projects are uncertain and sophisticated with many challenges. Refurbishment projects in Sri Lanka are dominated in hotel buildings compared to other types of buildings because hotel buildings needed to be upgraded and modified frequently to maintain the tourist attraction intact. Nevertheless, the challenges in these projects remain unprecedented due to lack of in depth investigation. This research therefore, set out to explore the challenges in hotel building refurbishment projects in Sri Lanka. A qualitative approach was applied by focusing on three recently completed hotel building refurbishment projects. Subsequently, data collected through unstructured interviews with the participants involved in the refurbishment projects, document reviewing and observations were analysed using content analysis. The findings revealed topmost challenges as the budget overruns due to superficial designs and construction activities, time overruns due to refining designs to cater unanticipated building conditions, limitations to introduce changes to the existing building structures and the interruptions to building occupants due to simultaneous operations. The budget overruns for Cases A, B and C were reported as 13.64%, 1.38% and 0.95% respectively. The time overruns were calculated as 55.56%, 25% and 50% respectively. These challenges adversely affected in achieving value for money in terms of cost, time, quality, customer satisfaction and sustainability.

Keywords: Challenges; Hotel Buildings; Refurbishment Projects; Sri Lanka.

#### **1. INTRODUCTION**

For ensuring value enhancement and delivering the required functionality of the buildings, maintenance and preservation of the usable conditions of the buildings are necessitated (Pukīte & Geipele, 2017). Moreover, the growing aged building stock has also forced building owners to seek solutions for improving building condition (Babangida *et al.*, 2012). In this context, Mansfield (2009) pointed out that refurbishment can deliver solutions to inevitable physical deterioration and obsolescence of the buildings, and in turn is able to reduce the loss of investment value of the property. Nevertheless, the term "refurbishment" has been loosely defined in past literature. Mansfield (2002) interpreted refurbishment as a physical process, in which the boundaries between the terminologies such as repair, replacement and renewal have not been precisely defined. Regardless of the attempts undertaken to define the term refurbishment, Vilches *et al.*, (2017) asserted that alternative terminologies such as refurbishment, retrofitting, renovation, repair or restoration are still being used interchangeably.

Many factors have contributed to creating an increased demand for refurbishment projects. Amongst such contributors, the rise of the ageing building stock, scarcity of land for new construction, adoption of building regulations and requirements on compliance with new standards have fostered an increased demand for refurbishment projects lately (Egbu *et al.*, 2002). The benefits yielded through refurbishment projects have been widely discussed in the mainstream literature with a comparison to new constructions and demolition. Refurbishment offers comparatively notable economic, social and environmental benefits over demolition,

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such as modernising of buildings and enabling energy saving measures (Gohardani & Björk, 2012). Moreover, refurbished buildings produce fewer carbon emissions than new constructions (Power, 2008). In addition to enhancing energy efficiency and reducing adverse environmental impacts, refurbishment improves the noise insulation conditions, external appearance, user comfort and assures healthy working and living environment, whilst prolonging the building life span and increasing the value (Mickaityte *et al.*, 2008). Regardless of the exemplified benefits offered by refurbishment, these projects are sophisticated and uncertain to manage (Egbu *et al.*, 2002). Arain (2005) identified twelve (12) most significant challenges associated with refurbishment projects and among them unanticipated time overruns, incurrence of high costs and difficulty of managing due to simultaneous operations conducted by owners are notable. Therefore, the emphasis should be given to managing the complexity and uncertainty of refurbishment projects (Rahmat & Ali, 2010).

Langdon and Everest (2002) explained that refurbishment is vital to hotel buildings in order to uplift building conditions, although these projects are associated with issues in the existing building along with unanticipated cost and time overruns. Regardless of the grooming interest for refurbishment in hotel sector after the tsunami disaster and also with the growth of tourism, these projects are characterised by many challenges (Athapattu & Gunawardena, 2010). The authors explored the causes for the delays in Sri Lankan hotel refurbishment projects. Nevertheless, the challenges in hotel building refurbishment projects in Sri Lanka are yet to be examined critically. Therefore, the present research set out to investigate the challenges in hotel building refurbishment projects in Sri Lanka.

# 2. LITERATURE REVIEW

# 2.1. THE SIGNIFICANCE OF REFURBISHMENT PROJECTS

In the building sector, refurbishment is a broadly used term to describe construction activities that aims to raise the standard of a building (Ali et al., 2009). Therefore, building refurbishment represents a significant percentage of turnover in the construction sector (Pereira & Cachadinha, 2011). Although refurbishment sector is important to many construction firms, it is not their sole concern (Rahmat & Ali, 2010), because new building projects allow a certain level of standardisation and choice of materials, equipment and technical solutions to be utilised, whereas the refurbishment projects must adapt to the uniqueness of the existing buildings and adjust to their specifics (Pereira & Cachadinha, 2011). Parameters such as location, orientation and existing construction cannot be altered in existing buildings (Konstantinou & Knaack, 2011). On the other hand, the refurbishment measures signify the starting point of the building's second life (Rasmussen & Birgisdottir, 2016). Amongst the various interpretations on refurbishment, as defined by Quah (as cited in Ali et al., 2009), refurbishment refers to upgrades, major repairs, renovations, alterations, conversions, extensions and modernisation of existing buildings, excluding routine maintenance and cleaning work. Rahmat and Ali (2010) described that refurbishment involves upgrading, alteration, extension and renovation of existing buildings for improving facilities and prolonging building lifespan.

#### 2.2. REASONS FOR UNDERTAKING REFURBISHMENT

According to Ali et al., (2009), refurbishment becomes an alternative, when the building in use fails to perform as expected. The growth of the aging building stock has also induced an escalated demand for refurbishment projects in upcoming years (Kohler & Hassler, 2002). This is primarily because refurbishment offers solutions to physical deterioration and obsolescence in buildings (Mansfield, 2009). Arain (2005) summarised the types of refurbishment and reasons for refurbishment as follows.

- Corrective refurbishment Failure in buildings
- Space altering refurbishment Change in use
- Optimising refurbishment Optimisation of economic factors
- Pleasure refurbishment Subjectiveness of the decisions of building owners
- Opportunity refurbishment Change of circumstances

It is evident that refurbishment decision is affected by numerous parameters required by different parties to the project (Konstantinou & Knaack, 2011). During the time span of the building life cycle, refurbishment strategy is an important topic in facilities management agenda, because if the completed building facilities are not maintained properly, they deter delivering the intended performance (Chan, 2014). The author further asserted

that building facilities must be maintained to an acceptable condition and must be refurbished to sustain its utilities and value. Hence, determining when refurbishment should be undertaken is of utmost importance.

When the building value is plotted against the time span of the building, it illustrates that typical deterioration in the performance of a building occurs with the passage of time (Jones, 2002). Further to the author, deterioration can be reduced by routine maintenance but repairs should be undertaken from time to time and eventually there will be a need for a major refurbishment, during which performance is likely to be further degraded.

### 2.3. CHALLENGES IN REFURBISHMENT PROJECTS

Refurbishing the existing building stock is acknowledged as challengeable in the building industry (Konstantinou & Knaack, 2011). Among the challenges, unanticipated rising costs and financial constraints, unanticipated time overruns, limitations to introduce changes to existing structure, lack of drawings and design information, interruptions due to simultaneous operations in the building (Arain, 2005; Egbu et al., 2002; Rahmat & Ali, 2010) are prominent. Moreover, unsafe working conditions, lack of quality parameters and lack of precise definition on the beginning and end of the project (Bryde and Schulmeister, 2012; Lund et al., 2016) are also highlighted. Other challenges include selecting the contract type, accumulation of salvaged materials through demolition waste, lack of proper site survey to investigate existing conditions and unreasonable conditions imposed during refurbishment to reinstall certain original building elements (Arain, 2005). Benefits of refurbishment can only be yielded, when the costs and benefits are assessed over the extended life of the building (Mansfield, 2009). The author further stated that ongoing maintenance costs for a refurbished building are high and refurbished buildings have a possibility of misalignment with market demand. Lack of proper communication and coordination among project participants (Juan, 2009; Rahmat & Ali, 2010) and existing building being subject to legislative constraints (Sodagar. 2013) are also challenges encountered during the refurbishment. Lee (2015) pointed out that refurbishment of buildings requires a wide range of skills from the project team, as the process is complicated.

# 2.4. The Necessity to Achieve Value for Money in Refurbishment Projects by Overcoming Challenges

In refurbishment projects, the challenges encountered are peculiar to existing buildings (Rahmat & Ali, 2010) and these challenges could result in subverting value for money. As claimed by Emmitt *et al.*, (2005); Martinsuo and Killen (2014), achieving value for money is the final outcome of all construction projects. Moreover, continuous value enhancement is paramount to reduce missed opportunities, strengthen integration and enhance sustainability in building projects (Pulaski & Horman, 2005). Although different stakeholders of construction projects interpret value from their own perspective (Haddadi *et al.*, 2016), the value of construction projects can be interpreted in terms of function, quality, cost and time (Potts & Ankrah, 2013; Yan, 2012). Jensen and Maslesa (2015) pointed out that lack of simple, yet holistic tools for assisting building owners on decision making during the early stages of projects is notable. Furthermore, Chau *et al.*, (2003) also contended that there seems a lack of empirical evidence on the approaches to enhance the value performance of refurbishment projects, by overcoming the challenges. In light of this, investigating the challenges associated with refurbishment projects and identifying their impact on achieving value for money is necessitated to enhance the value performance of refurbishment projects.

# **3. Research Methodology**

This research sought to explore the challenges in hotel building refurbishment projects in Sri Lanka through a qualitative approach. Since the case study approach enables in-depth examination in the context (Fellows and Liu 2008; Yin, 2011), it was considered that the case study approach could facilitate the accomplishment of the aim of this study. According to Yin (2009), either a single case study design or multiple case study design can be undertaken when conducting a case study research. The author further explained that criteria for selecting a case depends on the convenience, judgement, time and cost constraints. Considering all aforementioned factors, three hotel building refurbishment projects, which were undertaken from 2014 to 2017 were investigated in this study.

Yin (2009) pointed out several data collection techniques to be included in case studies research such as interviews, observations and document reviewing. Punch (2005) highlighted interview method as one of the most commonly used data collection method when the research embodies a qualitative approach. The author further explained that there are three types of interviews namely structured, semi-structured and un-structured interviews. Employing un-structured interview method is preferred in qualitative approach since the respondents are given the opportunity to answer independently with a limited control imposed by the researcher (Dawson, 2007). Accordingly, un-structured interviews were conducted for collecting data focusing on selected respondents, who involved in the refurbishment project. Moreover, observations and reviewing relevant documents were undertaken to capture data. The researcher referred documents such as bill of quantities (BoQ), drawings of the design proposals, photographic analysis documents of the project and archival records about the building. The refurbished areas were observed by visiting the hotel building. Table 1 presents the profile of the selected cases and respondents. For qualitative researches, content analysis provides subjective interpretation of texts through a systematic coding and pattern (Hsieh & Shannon 2005). In order to facilitate content analysis of this research, the software called NVivo (2010) was used for code based content analysis along with the manual content analysis.

 Table 1: The Profile of the Case Study Hotels and Respondents

	Details of the Case	Details of the Respondent		
Case A				
•	Five star rated hotel with 19 story building located in Colombo. Under phase 1 of refurbishment areas were the, front of house, selected back of house areas, lobby lounge, public toilets in lobby, Chinese restaurant, all day dining restaurant, board walk, MEP services in executive lounge, procurement, and replacement of kitchen and laundry equipment, lotus pond, AHU room, fire commanding centre and lift lobby The project was traditionally procured and the contract type was the re-measurement contract Contract price was LKR 220,000,000 and final project cost was LKR 250,000,000	<ul> <li>A1: Project manager with 24 years of work experience</li> <li>A2: Cost consultant with 21 years of work experience</li> <li>A3: Lead design consultant with 27 years of work experience</li> <li>A4: Contractor with work experience of 15 years</li> <li>A5: Chief financial officer (CFO) as the representative of the client/hotel owner with 18 years of work experience</li> <li>A6: Chief Engineer (MEP Engineer) with 11 years of work experience</li> <li>A7: Maintenance Engineer with 12 years of work experience</li> </ul>		
<u> </u>	the actual duration of the Project was 9 months but			
	Case B			
•	Five star rated hotel with four story building located in Colombo. North and South wings were refurbished separately. This included upgrading the car park, lift shaft, glass roofs for two restaurants, retractable roof for the dining room, veranda of bar and pool bar, bathroom tiling and glasswork, timberworks for bathroom doors, replacement of kitchen and laundry equipment, maintenance of extra low voltage system and repairing the ceiling of and floor of grand ball room, the balcony areas and modification of MEP services The project was traditionally procured and the	B1: Project manager with 15 years of work experience B2: Cost consultant with 41 years of work experience B3: Chief architect with 20 years of work experience B4: Contractor with 12 years of work experience B5: Finance Manager as the representative of the client/hotel owner with 28 years of work experience		
•	Contract type was the re-measurement contract Contract price was LKR 145,000,000 and final project cost was LKR 147,000,000 Planned duration of the project was 8 months but			

the actual duration was 10 months

	Case C			
•	Cas Four star rated hotel with three story building located in Gampaha District. Refurbishment included upgrading 81 rooms, central air conditioning system, fire alarm system, plumbing works, glass work bathrooms, lighting in corridors, façade maintenance, timber floor repairing, gully and sewerage system modifications, tiling in the kitchen, replacement of kitchen and laundry equipment, maintenance of extra low voltage system, installation of painted glass screens in the front office and modifying the swimming pool The project was traditionally procured and the contract type was the re-measurement contract Contract price was LKR 136,500,000 and final project cost was LKR 137.800.000	<b>c</b> C1: Project manager with 11 years of work experience C2: Cost consultant with 20 years of work experience C3: Designer with 17 years of work experience C4: Contractor with 14 years of work experience C5: Finance Manager as the representative of the client/hotel owner with 22 years of work experience C6: Maintenance Manager with 11 years of work experience and no prior experience in VM		
-	Diannad duration of the project was 6 months but			

 Planned duration of the project was 6 months but the actual duration was 9 months

All three case study hotels reportedly conducted refurbishment activities, simultaneous to the regular daily operations in the hotel.

#### 4. **Research Findings**

#### 4.1. CURRENT SITUATION OF REFURBISHMENT PROJECTS IN SRI LANKA

Capturing insights about the current situation of refurbishment projects was first focussed on the opinions of respondents about refurbishment. Respondent's interpretation on refurbishment was focussed on upgrading and modernising of the building elements and services. Further, explaining the terminology "refurbishment", respondents A1, B2 and C4 were of the view that refurbishment encompasses renovation, retrofitting, modifications, repairing, upgrading, restoration and extension to the existing building to deliver the expected functionality of the building with enhanced performance. According to the explanations of A3 and B1, refurbishment is necessitated for a building after a certain period of time. B1 described; "*a face-lifting of the building to deliver the building itself demands repair, modification and upgrade*".

Moreover, all the respondents confirmed that refurbishment projects in Sri Lanka are mostly conducted for hotel buildings compared to other types of buildings. As pointed out by the respondents, this is mainly because of the fact that Sri Lanka is a famous tourist destination and hotels need to be modified and upgraded more often than the other types of buildings. A1 opined; *"in the Sri Lankan context, tourism is a major source of national income and Sri Lanka is a famous tourist destination. Since, hotels accommodate tourists from various countries, unlike the other types of building facilities, hotel buildings try to maintain their status quo and keep up to date functionality. Refurbishment provides the means for this required updating and modifications".* In addition to this, since these buildings operate everyday throughout the year they subject to degrading easily and thus means of upgrading and modification are delivered through refurbishment. According to C6; *"since hotels operate 24\*7 all year long, building services and the building itself need repairing, scheduled maintenance"*. A7 asserted; *"they operate all day long throughout the year, even at off seasons. So, there's no time to do upgrades or modifications to uplift attraction, but only small scale repairs for survival which we do at our maintenance department level. So, mostly within 15 years, they can't rely on these small repairs and need a face lift"*. The opinions of the respondents suggested that in Sri Lanka, hotels demand a refurbishment within the 10 to 15 years after the building operations are commenced.

#### 4.2. REASONS FOR UNDERTAKING THE REFURBISHMENT FOR THE SELECTED BUILDING

The refurbishment decision is conceived as a result of many attributes. Two major reasons for undertaking refurbishment for the case study buildings were to enhance aesthetic appearance and modernise existing conditions and to compete with rival hotels. Therefore, the selected hotels continue with the existing operation by enhancing through refurbishment.

C5 pointed out; "to remain competitive, we need upgrades and newest trends and also modifying the existing hotel environment is more important to overcome the challenges we face". Cases A and B are two of the oldest five star rated hotels in Colombo and thus all the respondents endorsed the view of being competitive. For Case C also, remaining competitive amongst the rival hotels is of utmost importance. Furthermore, as highlighted by the respondents, refurbishment was necessary for all the case study buildings, because major modifications and upgrades have not been done in a while. A1 explained; "by the time, the refurbishment started, the hotel was 27 years old. From time to time, few small scale renovation and repairing projects had been undertaken to keep the hotel in good standards. In fact, the last renovation was undertaken in 2001". In addition to the most significant reasons, respondents of Cases A and B pointed out that since the hotels have long been in operation as five star rated hotels, safeguarding the star rating of the hotel was also a drive for this project. Preserving architectural and archeological value and importance of heritage was a unique reason for the Case B to undertake refurbishment. B3 explained; "being probably the oldest functioning hotel, we had to ensure that architectural features concerning heritage and cultural aspects attributed to British era and the archaeological value of the hotel remained preserved and intact'. Among the other reasons, being in the hotel chain of an internationally reputed organisation, maintaining the standards of the parent company was also a drive for the refurbishment for Case A. Therefore, the decision to undertake refurbishment in these buildings were triggered due to many factors.

#### 4.3. CHALLENGES ENCOUNTERED IN THE REFURBISHMENT PROJECTS

The refurbishment projects are deemed to be uncertain and complicated in nature as per the opinions of the respondents. The top most challenges attributed to hotel refurbishment projects, as highlighted by 15 respondents are the budget overruns in superficial designs and construction activities, time overruns for refining designs to cater unanticipated building conditions, limitations to introduce changes to the existing building structures and the interruptions to building occupants due to simultaneous operations. As pointed out by A5, "the initial designs by the designers exceeded our budget. Reviewing various design options along with budgets consumed a huge time". A4 also added; "the project budget based on the designs of lobby finishes with an allowable tax portion of 25% was an underestimated budget". Emphasising the limitations on building conditions, C2 claimed; "we had vague assumptions on the layout duct lines inside the ceiling till we start demolishing. This made us to revisit designs considering limitations of the building services". B2 highlighted; "restrictions to incorporate sustainable designs due to having to conform to archaeological limitations" in Case B is another example. Challenges due to simultaneous operations in the building as pointed out by B4; "complaints from guests due to noise in the demolition works especially during our night shift". Respondents encountered the issue of lack of as built drawings and site information. Respondents also pointed out about the insufficient safety precautions on site. Among the other challenges, the difficulty of reusing existing material and equipment due to damages in the dismantling and storing is noteworthy. Lack of coordination and communication among project participants was challenging. According to A2, "because of involvement of few foreign entities and they work in their native countries, the coordination between the parties was a big hurdle in the progress of design". C1 also pointed out; "documentation of tenders with several specialist contractors/sub-contractors was a burden". Lack of secured places in the site to store construction equipment was challenging for the project team. A4 stated; "there were no secured spaces within the hotel premises for us to store most of the procured kitchen and laundry equipment and contractor had to hire warehouse outside the Colombo, and store the equipment". In addition, lack of standardised testing and commissioning of the building services and equipment was also noted. B3 pointed out; "contractor's lack of knowledge about the standard test requirements delayed the completion and smooth handover of the project".

All the contractors involved in the project complained that traditional procurement method restrained the contractor's input to design alternatives. Moreover, all the design consultants experienced the challenge of identifying client's requirement properly. Lack of a proper isolation strategy to systematically assign the areas in the building for the refurbishment, while the other areas are in operation was a notable challenge. According

to A1, "in the isolation plan submitted by the lead consultant by identifying the areas that can be allocated for part by part refurbishment, cold room was missing and the project execution plan formulated based on it had to be revised twice". Lack of supervision during the demolition and construction stage was challengeable for Case B. The respondents of Case C claimed that existing building was subjected to legislative constraints. C3 expressed; "achieving ISO certifications and being compliant to waste disposal as per municipal regulations made us to limit choosing some material which we initially decided".

In a summary, all aforementioned challenges can be classified in to two categories as challenges resulted by the existing building and the challenges resulted by the project team.

Challenges resulted by the existing building	Challenges resulted by the project team
<ul> <li>Time overruns due to refining designs to cater unanticipated building conditions</li> <li>Limitations to introduce changes to the existing building structures</li> <li>Lack of as built drawings and site information</li> <li>Lack of secured places in the site to store construction equipment</li> <li>Existing buildings are subjected to legislative constraints</li> <li>The difficulty of reusing existing material and equipment due to damages and non-suitability</li> </ul>	<ul> <li>Budget overruns due to superficial designs and construction activities</li> <li>Interruptions to building occupants due to simultaneous operations</li> <li>Lack of coordination, communication of project participants and lack of supervision</li> <li>Insufficient safety precautions on site</li> <li>Lack of standardised testing and commissioning of the building services and equipment</li> <li>Traditional procurement method restrained the contractor's input to design alternatives</li> <li>Inadequate identification of client's requirements</li> <li>Absence of a proper isolation strategy to systematically assign the areas in the building for the refurbishment, while the other areas are in operation simultaneously</li> </ul>

 Table 2: The Classification of the Challenges

As per the above classification, majority of the challenges in hotel refurbishment projects in Sri Lanka are resulted by the project team. Although the challenges are termed differently, respondents opined that they are constricted to cost and time overruns, quality impairments, dissatisfaction of hotel customers and lack of sustainability. Therefore, all the respondents endorsed the view that aforementioned challenges contributed adversely in achieving value for money.

#### 5. CONCLUSIONS AND RECOMMENDATIONS

Previous studies have failed to offer a precise definition for refurbishment and certain terminologies are in use interchangeably (Vilches, et al., 2017). This study has substantiated that hotel building refurbishment encompasses the terminologies such as renovation, retrofitting, modifications, repairing, upgrading, restoration and extension to the existing buildings. However, present study has suggested that refurbishment of hotel buildings is primarily focussed on upgrading and modifying the elements and services of existing buildings. Athapattu and Gunawardena (2010) highlighted the grooming interest for refurbishment in Sri Lankan hotel sector after the tsunami disaster and also with the growth of tourism. Findings of this study have further corroborated the above claim by revealing that refurbishment of hotel buildings in Sri Lanka are higher compared to other building types, since refurbishment provides avenues to upgrade and modify buildings for enhancing tourist attraction. Findings about the challenges in hotel building refurbishment projects in Sri Lanka are consistent with those of Arain (2005); Egbu et al., (2002) and Rahmat and Ali (2010), which suggested that challenges are peculiar to existing buildings. Among such challenges limitations to introduce changes to existing structure, lack of drawings and design information, interruptions to building occupants due to simultaneous operations in the building are prominent in the hotel building refurbishment projects in Sri Lanka. As speculated by many researchers, cost and time overruns seem inevitable for the hotel building refurbishment projects too, because the results of the current study also have pointed out budget overruns and time overruns as two of the top ranked challenges. A possible explanation for this could be the high stakes of hotel industry on cost and time.

Rahmat and Ali (2010) deduced that challenges in refurbishment projects are peculiar to existing buildings and these challenges could result in subverting value for money. The challenges that were identified through the current study, were categorised as challenges resulted by the existing building and the challenges resulted by the project team. It was found that majority of the challenges in hotel refurbishment projects in Sri Lanka are resulted by the project team. It can be further concluded by the present study too that the aforementioned challenges affect adversely in achieving value for money for the refurbishment projects. Moreover, previous studies have claimed that achieving value for money is the final outcome of all construction projects (Emmitt et al., 2005; Martinsuo and Killen, 2014) and value has been interpreted in terms of function, guality, cost and time (Potts & Ankrah, 2013; Yan, 2012). The present study has shown that challenges encountered in hotel building refurbishment projects in Sri Lanka are constricted to cost and time overruns, quality impairments, dissatisfaction of hotel customers and lack of sustainability. These challenges have thus led to reduce value for money. Accordingly, this study has offered some insight in to the necessity of value enhancement approaches in refurbishment projects to overcome the challenges. However previous researchers have also contended that there seems a lack of empirical evidence on the approaches to enhance the value performance of refurbishment projects (Chau et al., 2003). An implication of this study is that further research should therefore concentrate on the investigation on value enhancing approaches to deliver value for money in refurbishment projects by overcoming the challenges.

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