

Adaptive Re-Use Principles in Historic Hotel Buildings in Melaka And George Town

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Abstract: Adaptive re-use of historic buildings is a process of changing the original function of the historic buildings to another function that can optimise the use of existing historic buildings. The selection of appropriate new function is an important factor in determining the success of adaptive re-use of historic buildings. However, adaptive re-use work done on historic buildings on the World Heritage Site is not an easy task due to rules and principles outlined by local and international charters that must be abide by. This research is conducted to gather the true picture of applied adaptive re-use principles that has been done on heritage hotels available in Melaka and George Town World Heritage Sites. This research is started with an inventory that led to the discovery of 35 hotels which applied the principle of adaptive re-use of historic buildings. Based on this finding, 4 historic hotels from adaptive re-use applications have been selected as the case studies. Results of the case studies carried out show that the level of conservation of heritage hotel is moderate and measures of control should be taken to ensure the privileges of heritage hotel. As a result of this research, a number of suggestions are made to ensure that adaptive re-use work done in the future will be conducted as optimum as possible according to the adaptive re-use and conservation principles.

1 Introduction

Adaptive re-use is broadly defined as any building work and intervention to change its capacity, function or performance to adjust, reuse or upgrade a building to suit new conditions or requirements (Douglas, 2006). Adaptive re-use is a wise move to ensure that a building restored, given new impetus and should be used with. Orbasli (2008) stated that adaptive re-use works is a process in which the building has been modified for the new use and so leave the usage of time.

Adaptive re-use work involve works such as conservation, modification, repair, maintenance and consolidation (Australia ICOMOS, 2002). Bullen (2007) stated that although there are many qualifying factors, the concept of adaptive re-use has significantly support a positive strategy to make the built environment more sustainable.

2 Adaptive Re-Use of Historic Buildings

Adaptive re-use of historic building is one of the best methods that can help a historic building keeps well conserved (Ahmad and Badarulzaman, 2003). Adaptive re-use work involve works such as conservation, modification, repair, maintenance and consolidation (Australia ICOMOS, 2002). Bullen and Love (2011)

stated that the change of use may require refurbishment and/or complete renovation of existing buildings or structures. It's part of the rules that have the effect of protecting historical buildings from collapsing (Ashurst, 2006). According to Ashworth and Larkham (1994) when a historic building collapsed, the history that was recorded in the same building also died and disappeared without being remembered by future generations.

Adaptive re-use works on a historic building that has been listed as a National Heritage Building should be done in accordance with the principles of conservation which have been set out in the National Heritage Act 2005 and also conservation guidelines provided by the local authorities of the city in which it is located. In addition to the acts and national guidelines, the owner of historic buildings also have to comply with international charters in conduct of adaptive re-use of historic buildings (Department of National Heritage, 2007).

Adaptive re-use of historic building as a hotel in the UNESCO World Heritage Site of Melaka and George Town are not only able to make historic buildings prevail, but it also has a greater impact, extensive and profound. These buildings may also become important assets to develop a local tourism industry (Pedersen, 2002). Orbasli (2000) concurred that the tourism sector is a significant contributor to the economy of the city or the historical center. Adaptive re-use of historic buildings to a hotel will meet the needs of the tourism sector which

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can provide a good return to the hotel, shops, businesses and positively support the country's tourism sector.

3 Objectives of Research

The main objectives of this research are:

- i. To identify the common buildings element that had been renovated and maintained in adaptive re-use of historic building as a hotel in UNESCO World Heritage Site of Melaka and George Town.
- ii. To assess the adaptive re-use of historic building practice level as a hotel based on the principles of conservation in the UNESCO World Heritage Site of Melaka and George Town.
- iii. To propose basic guidelines for assessing the level of adaptive re-use of historic building as a hotel based on the principle of conservation of UNESCO World Heritage Site.

4 Research Methodology

For this research, qualitative methods was used in the study. The inventory has been carried out around Melaka and George Town World Heritage Site and as a result have led to the discovery of 35 hotels with application of adaptive re-use principles. 7 hotels are located in Melaka and 28 hotels located in George Town. The hotels have been screened to identify the four historic hotels that suitable as a case study for this research based on several criteria to represent another 31 hotels. These criteria are:

- i. The application of the adaptive reuse principles and the historic buildings located within the conservation zone of world heritage sites.
- ii. Heritage Hotel.
- iii. The legacy that has interesting historical background.
- iv. The heritage design which has interesting architecture value.

For this research, four ideal hotels were identified as samples for case studies:

- i. Hotel Puri in Melaka World Heritage Site.
 - ii. Heeren House in Melaka World Heritage Site.
 - iii. Cheong Fatt Tze Mansion in George Town World Heritage Site.
 - iv. Hutton Lodge in George Town World Heritage Site.
- Two approaches have been used throughout this case study:

- i. Observation – observation of architectural elements based on the application of the adaptive re-use and conservation principles in heritage hotels
- ii. Interviews – Interview with hotel owners and employees to identify the application level of adaptive reuse and conservation principles used.

5 Analysis of Case Study

Analysis of adaptive re-use work and conservation done for four case studies are as follow.

Table 1: Case study 1 – Hotel Puri at Banda Hilir, Melaka

| Case Study 1: | Detail |
|---|---|
|  | Name: Hotel Puri, Melaka. |
| | Location: Core Zone. World Heritage Site, Melaka. |
| | Address: No.1, Jalan Tun Tan Cheng Lock, 75200 Melaka. |
| | Hotel type: Boutique hotel. |
| | Existing function: 3 storey shop houses. |
| | No. of rooms: 82 nos. Owner: Drs. T.S. Tan |
| Element | Description |
| 1. Facade:  | <ul style="list-style-type: none"> The facade of the hotel has been preserved as the original. |
| 2. External wall:  | <ul style="list-style-type: none"> The hotel retains its original external walls The walls were badly damaged and cannot be repaired, a new wall was built according to the specifications of the original wall. While on the damaged wall, the repair works were done carefully, especially on the plastering of the walls. |
| 3. Internal wall:  | <ul style="list-style-type: none"> Internal wall or wall divider is the largest element modified in Hotel Puri. New partition wall constructed according to new floor plan to create guest rooms. A dividing wall was built in every room to create a toilet and a bathroom in the room for the convenience of hotel guests. Many adjustments had to be made to internal wall to meet the new function as a hotel. |
| 4. Ground Floor:  | <ul style="list-style-type: none"> The existing cement floor was maintained and repair works done on the damaged floor which patch the potholes and cracks. |
| 5. Upper Floor: | <ul style="list-style-type: none"> A lot of damage has occurred on the upper floor as timber was used for the element. Conservation work has been |

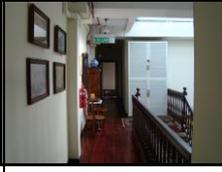
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|  | done to repair the damaged floors and replace the flooring with timber which bears the same characteristics as the original. |
| 6. Column: | |
|  | <ul style="list-style-type: none"> Hotel Puri still used the original column as the elements which are still in good condition. The damaged part were repaired and painting work done to restore the color of paint that had faded. |
| 7. Staircase: | |
|  | <ul style="list-style-type: none"> There are 2 existing staircases in Hotel Puri and 2 new staircases were built in the annexe building for hotel guests. |
| 8. Roof structure: | |
|  | <ul style="list-style-type: none"> Repairs and conservation of the roof structure has been carried out mainly on the damaged parts. Timber structures that had been damaged and decayed were replaced with new timbers as the original one. |
| 9. Door: | |
|  | <ul style="list-style-type: none"> Hotel Puri still retains the main door at the entrance of the hotel. Similarly, there are many original doors in existing buildings. Damage door was repaired and the badly damaged door have been replaced with new doors but using the same materials and design as the original door. |
| 10. Window: | |
|  | <ul style="list-style-type: none"> External windows still remains the original window. The damage occurred on the windows repaired as soon as possible in accordance with the principles of conservation. For additional buildings, the design of the windows was built according to the design of the original windows of Hotel Puri. |
| 11. Roof Finishes: | |
| | <ul style="list-style-type: none"> Roof finishes of Hotel Puri were maintained as they were derived using China tiles. China tiles has a different pattern with tiles that are available today. |

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|  | <ul style="list-style-type: none"> China tiles that has been broken and damaged, were replaced with China tiles purchased from nearest building owners which no longer use Genting China on their own building. |
| 12. Ceiling Finishes: | |
|  | <ul style="list-style-type: none"> The top floor still retains its old ceiling finishes. Repair works were only carried out on the damaged and peel par. A new type of plaster finish ceiling fans have been installed in the hotel lobby to provide more attractive finish to the ceiling finishes of the hotel. |
| 13. Wall Finishes: | |
|  | <ul style="list-style-type: none"> Hotel Puri maintains the existing wall finishes, especially in the hotel lobby. Most of the existing wall finishes at the hotel was damaged and uprooted. Repairing works have been done to the wall finishes to follow the originals. |
| 14. Floor finishes: | |
|  | <ul style="list-style-type: none"> Floor finishes at Hotel Puri are also almost entirely broken and uprooted. The floor finish has been replaced by a similar packaging with original tile specially imported from England. |
| 15. Building facilities: | |
|  | <ul style="list-style-type: none"> To ensure Hotel Puri provides maximum comfort and security to its guests, building facilities such as air conditioning systems and fire fighting system have been installed throughout the building. Although these building facilities crippled authenticity of Hotel Puri, building services is an important element that needs to be in a hotel. |
| 16. Architectural decoration: | |
|  | <ul style="list-style-type: none"> No additional architectural decoration done to the existing ones because they are quite interesting and has a value of its own. There are many architectural jewels plastered, remain on the external walls of Hotel Puri. These decorations have a |

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| | natural backdrop, like the decoration of plants and animals that are hard to find in other buildings. |
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Table 2: Case study 2 - Heeren House at Banda Hilir, Melaka

| Case Study 2: | Detail |
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|  | Name: Heeren House, Melaka. |
| | Location: Core Zone. World Heritage Site, Melaka. |
| | Address: No.1, Jalan Tun Tan Cheng Lock, 75200 Melaka. |
| | Hotel type: Guest House. |
| | Existing function: Double storey shop houses. |
| | No. of rooms: 6 nos. |
| | Owner: Mr. Bernard. |
| Element | Description |
| 1. Facade | |
|  | <ul style="list-style-type: none"> The facade of the front, back and sides of Heeren House still stands as the original. |
| 2. External wall: | |
|  | <ul style="list-style-type: none"> The external walls of Heeren House remained as the original wall of the house. No changes or modifications made on the external wall of Heeren House. |
| 3. Internal wall: | |
|  | <ul style="list-style-type: none"> Renovations have been done on internal walls of Heeren House to ensure that guests can be served comfortably. The additional wall was built in each guest room to provide toilets and bathrooms in each room. Renovations have been made to the wall in order to ensure Heeren House can be serve as a hotel. |
| 4. Ground floor: | |
|  | <ul style="list-style-type: none"> The existing ground floor was maintained. Most of the broken and damaged floor tiles was replaced with new floor tiles. |

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| 5. Upper floor: | |
|  | <ul style="list-style-type: none"> The existing upper floor of the building was maintained. The damaged timber floor was repaired while the rotted timber was replaced as the original one. |
| 6. Column: | |
|  | <ul style="list-style-type: none"> Heeren House is still using the original column structure as the existing structure is still strong. Existing column was repaired on parts which are broken or perforated. |
| 7. Staircase: | |
|  | <ul style="list-style-type: none"> The Heeren House retains the existing structure of timber staircase. Repaired work has been carried out for staircase and wooden handrails which have been damaged. Revarnish of staircase and handrail had been done to restore the beauty of the existing timber. |
| 8. Roof structure: | |
|  | <ul style="list-style-type: none"> The conservation work of existing timber roof structure was conducted by repair and replacement of defective and rotten parts of timber. |
| 9. Door: | |
|  | <ul style="list-style-type: none"> The main door of Heeren House is still using the original door but was repaired without referring to the original door. A new door was installed in all guest rooms and also on toilet doors in the living room. |
| 10. Window: | |
|  | <ul style="list-style-type: none"> Many of the original buildings have been damaged and need new replacement windows. All external windows have been replaced with new windows that have a design similar to the original window design. |

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| <p>11. Roof finishes</p>   | <ul style="list-style-type: none"> • Heeren House still maintains China tiles which are specially brought from China as the finishing for roof. Damaged tiles were replaced with the same building materials obtained from the owners of adjacent buildings that are no longer used by them. |
| <p>12. Ceiling finishes:</p>  | <ul style="list-style-type: none"> • Ceiling Finishing on the top floor of Heeren House still uses the original ceiling molding. • Conservation and repairing works have been done on the damaged section of the ceiling. |
| <p>13. Wall finishes:</p>  | <ul style="list-style-type: none"> • Most of the walls were preserved. • New wall finishes have been installed in the bathroom / toilet in the room guests only. |
| <p>14. Floor finishes:</p>  | <ul style="list-style-type: none"> • Installation of the new floor finish has been done in the ground floor of Heeren House. Floor tiles were installed on a sidewalk in front of the guest house, a gallery and a cafe. • The new floor finishes looks like the original floor of the historic building. • In addition, new floor finishes are installed in the bathroom and toilet in the guestrooms. • A gallery and café was fitted with a new floor finish. |
| <p>15. Building services:</p>  | <ul style="list-style-type: none"> • Building services such as air conditioning systems have been installed in each room individually to ensure guests comfortable stay in the hotel. • New building services such as fire extinguishing systems have been installed to meet the requirements of the Fire Department. |
| <p>16. Architecture decoration:</p>  | <ul style="list-style-type: none"> • The architectural decoration of the Heeren house is maintained as the original. • Heeren House does not have outrageous architectural decoration which needs any adjustment to be made. |

Table 3: Case Study 3 - Cheong Fatt Tze Mansion at George Town, Pulau Pinang

| Case Study 3: | Detail |
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|  | <p>Name: Cheong Fatt Tze Mansion, George Town</p> <p>Location: Buffer Zone. World Heritage Site, George Town.</p> <p>Address: No. 14, Lebu Leith, 10050 George Town, Pulau Pinang</p> <p>Hotel type: Boutique hotel</p> <p>Existing function: Mansion</p> <p>No. of rooms: 16 nos</p> <p>Owner: Mr. Laurence Loh</p> |
| Element | Description |
| <p>1. Facade:</p>  | <ul style="list-style-type: none"> • The facade of Cheong Fatt Tze Mansion is preserved as the original. The beauty of the facade and small ceramic ornaments that characterize this building facade was preserved. |
| <p>2. External wall:</p>  | <ul style="list-style-type: none"> • Cheong Fatt Tze Mansion retains the original exterior walls. • The damaged parts of the wall repaired in accordance with the specifications of the original wall. Repair work on the damaged parts of the wall, done carefully, especially on the dated plastered walls. • The external walls were painted with indigo blue as can be seen today. |
| <p>3. Internal wall:</p>  | <ul style="list-style-type: none"> • Conservation work has been done to repair the damaged parts of the wall. For the purposes of adaptive re-use, many parts of the wall modified to be used as a guest bedroom is inherent in the mansion. • Some renovation work has been done to the internal wall of the Cheong Fatt Tze Mansion to ensure that each guest room has a divider wall between the living room and a separate toilet / bathroom. |
| <p>4. Ground floor:</p> | <ul style="list-style-type: none"> • The ground floor used today is the existing floor of Cheong |

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|  | <p>Fatt Tze Mansion.</p> <ul style="list-style-type: none"> The holes and cracks were repaired with suitable floor finishes. No renovation work done on the ground floor of Cheong Fatt Tze Mansion. |
| <p>5. Upper floor:</p>  | <ul style="list-style-type: none"> A lot of damage has occurred on the upper floors of Cheong Fatt Tze Mansion. Floors that were destroyed had been replaced with a new floor by substituting timber that has similar characteristic to the original timber. The timber floor was varnish to make it more durable and look more attractive. |
| <p>6. Column:</p>  | <ul style="list-style-type: none"> There are two types of columns in the Cheong Fatt Tze Mansion, which is a column of wrought iron and concrete. Specially patterned wrought iron pillars which can be seen clearly in the air well are among the attractions in Cheong Fatt Tze Mansion. The wrought iron columns remained in use as the elements are still in good condition. The structure of the damaged concrete pillar was repaired and the painting work has been done to restore the faded color. |
| <p>7. Staircase:</p>  | <ul style="list-style-type: none"> There are seven existing staircase in the Cheong Fatt Tze Mansion Two of the seven staircases are spiral staircases made of wrought iron with interesting patterned on. |
| <p>8. Roof structure:</p>  | <ul style="list-style-type: none"> Cheong Fatt Tze Mansion still use the existing roof structure. However the repairing work have been done to the damage part. Structure that was damaged and rotting was replaced with a new building materials as the original timber. |

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| <p>9. Door:</p>  | <ul style="list-style-type: none"> Cheong Fatt Tze Mansion still preserves the original main door at the entrance of the hotel similar to the other doors in the mansion. At one time this old mansion was abandoned and not maintained, then many doors that have been damaged. The door, which suffered severe damages have been repaired and repainted as the original door. |
| <p>10. Window:</p>  | <ul style="list-style-type: none"> There are two types of windows in the Cheong Fatt Tze Mansion. Windows with wooden barrel design 'gothic' and a window framed with glass panels. Replacement of defective wooden barrel with similar timber has been carried out, followed by re-painting wooden windows using traditional organic methods. Repair work to the wooden frames have been made and broken glass panel has been replaced with a new glass panel which was customized as the original pattern. |
| <p>11. Roof finishes:</p>  | <ul style="list-style-type: none"> Cheong Fatt Tze Mansion's roof has a very unique design that is hard to find on another building. Conservation work was carried out by replacing the broken and damaged tiles purchased from the nearby building that used same type of tiles. |
| <p>12. Ceiling finishes:</p>  | <ul style="list-style-type: none"> Cheong Fatt Tze Mansion still preserves the original ceiling moldings made of pieces of boards that have attractive ornamental geometric pattern on it. Work on repair and rehabilitation of existing ceiling moldings have been made especially for the opening lap which damaged due to age factor. The ceiling was repainted to ensure that the ceiling look |

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| | more attractive. |
| 13. Wall finishes: | <ul style="list-style-type: none"> Cheong Fatt Tze Mansion used 'fresco' formed from lime plaster in many parts of the living room. Most of it was damaged but conservation work done by using the grouting injection technique. The fresco repainted and 'fresco' line was repainted in black Chinese ink mixed with glue |
| 14. Floor finishes: | <ul style="list-style-type: none"> There are three types of floor finishes used in Cheong Fatt Tze Mansion. First, the floor tiles with geometric patterned which have been used in most of the space inside the mansion. Second, the terracotta floor finishes which have been used in most of the bedrooms. The third floor finishes is a piece of granite that was used on the pavement and air wells. Floor finishes at Cheong Fatt Tze Mansion also been severely damaged. The floor of the storage containers were washed and replaced with floor finishes as the original and specially imported from China. As for the broken granite slabs, they have been replaced with granite collected from nearby shop that no longer use in the building. |
| 15. Building services: | <ul style="list-style-type: none"> Cheong Fatt Tze Mansion was built hundreds years ago. No building services installed in the mansion at the time. Most of the existing building services are installed today after the owners decided to adaptive re-use of Cheong Fatt Tze Mansion as a hotel. Building services such as air conditioning have been installed to ensure hotel guests receive optimum comfort during the stay. Air conditioning has been installed in many parts of the Cheong Fatt Tze Mansion. |
| 16. Architecture Decoration: | <ul style="list-style-type: none"> Architectural decoration at the outer wall of Cheong Fatt Tze |

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|  | <p>Mansion has been carefully restored with the help of paid expert artisan.</p> <ul style="list-style-type: none"> The unique architectural decoration in Cheong Fatt Tze Mansion is made from ceramic glass taken from the broken bowls. The ceramics glass were permanently plastered with interesting patterns and colors in external and internal wall. The most widely used patterned are animal elements such as lion and dragon that reflects culture of the building owner. |
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Table 4: Case Study 4 - Hutton Lodge at George Town, Pulau Pinang

| Case Study 4: | Detail |
|---|---|
|  | Name: Hutton Lodge, George Town |
| | Location: Buffer Zone. World Heritage Site, George Town. |
| | Address: No. 17, Jalan Hutton, 10050 George Town, Pulau Pinang. |
| | Hotel type: Budget hotel |
| | Existing function: Mansion |
| | No. of rooms: 26 nos |
| | Owner: Choong Lye Hock Estat |
| Element | Descriptio |
| 1. Facade: | <ul style="list-style-type: none"> This building was involved in a fire back in 2003. The facade of the hotel has been managed to be preserved as the original because it was not burned and the outside walls still clearly visible. |
| 2. External wall: | <ul style="list-style-type: none"> The existing walls survived in the fire The external walls of Hutton Lodge which survived in the fire have been restored. The works of scraping old paint, plastering the walls, especially the hollow and repainting the walls with new paint were done. No modification is done to the external wall of Hutton Lodge. |

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| <p>3. Internal wall:</p>  | <ul style="list-style-type: none"> • The internal walls which survived in the fire have been restored while the reconstruction is done for the wall which was destroyed by fire. • Several additions have been made to the wall to ensure Hutton Lodge can meet new function as a hotel. • The existing walls have been modified according to the new floor plan to change the function of from bungalow to a hotel. |
| <p>4. Ground floor:</p>  | <ul style="list-style-type: none"> • The ground floor which survived the fire has been rebuilt to get stronger floor structure. |
| <p>5. Upper floor:</p>  | <ul style="list-style-type: none"> • The reconstruction was done on the upper floor which completely burnt the timber floor when the fire broke out. • Fire Department has banned the reuse of timber floors due to fire safety. • A new concrete floor was built to replace the timber floor. |
| <p>6. Column:</p>  | <ul style="list-style-type: none"> • The existing column is conserved and conservation work has been carried out on the damaged part due to the fire. • No renovation work done to the column of Hutton Lodge. |
| <p>7. Staircase:</p>  | <ul style="list-style-type: none"> • The existing staircase which destroyed in the fire has been replaced with a new staircase using concrete and wooden handrail. The staircase was built in its original position. • As for the annex building, a new concrete stairses was built for the convenience of hotel guests staying in rear wing of the hotel. |
| <p>8. Roof Structure:</p> | <ul style="list-style-type: none"> • The new roof structure was built using timber as the original structure was destroyed in the fire. |

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| <p>9. Door:</p>  | <ul style="list-style-type: none"> • Doors in the Hutton Lodge has been replaced with new doors as the existing doors were destroyed in the fire. • For the main front doors, rear doors and side doors, wood paneled doors with unique design and quality finishes have been used. While flush doors have been used for all hotel room doors. |
| <p>10. Window:</p>  | <ul style="list-style-type: none"> • The windows in the Hutton Lodge has been replaced with a new frame and shutters to replace all the windows which was destroyed in fire. • Window with wooden ram and casement has been used as external window. While the iron grille was installed at ground floor windows to prevent intruders from getting into the hotel. |
| <p>11. Roof finishes:</p>  | <ul style="list-style-type: none"> • The new roof finishes was build to replace the existing roof finishes that had been destroyed in fire. • The roof tile patterns are the same as the original clay roof tiles patterns. |
| <p>12. Ceiling finishes:</p>  | <ul style="list-style-type: none"> • New ceiling finishes were built to replace the original ceiling moldings that were burnt in the fire • Asbestos free ceiling are used in the reconstruction of upper level of Hutton Lodge. |
| <p>13. Wall finishes:</p> | <ul style="list-style-type: none"> • There's no wall finishes in existing Hutton Lodge. Adaptive |

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|  | <p>re-use work to change bungalow into a comfortable budget hotel floors needs wall finishes.</p> <ul style="list-style-type: none"> • Wall tiles measure 1 'x 1' used in the toilet in each of the room and also in the shared toilet used by guests staying at dormitari. |
| <p>14. Floor finishes:</p> | |
|  | <ul style="list-style-type: none"> • The new floor finishes was installed in Hutton Lodge due to the existing floor finish has been destroyed by fire in the past. • Almost the entire ground floor of the Hutton Lodge using cement as floor finishes. • However, in certain areas such as on the front porch and the porch edge Hutton Lodge has a floor tile to form a pattern on the floor. • The carpet was installed in the guest rooms for the comfort of hotel guests. • 1'x 1' sized floor tile has been used in the toilet |
| <p>15. Building services:</p> | |
|  | <ul style="list-style-type: none"> • The original building of Hutton Lodge does not have any building services. • Building services such as air-conditioning systems, cctv camera systems, fire protection, internet and television services have been installed for the comfort and safety of the guests. |
| <p>16. Architectural decoration:</p> | |
|  | <ul style="list-style-type: none"> • Architectural decoration in the Hutton Lodge is very simple and has been retained as before. |

6 Findings

The findings of this research will hopefully help people in gaining knowledge, understanding of data and information on adaptive re-use of historic building as a hotel and adaptive re-use principle that has been done based on the principles of conservation.

6.1 First Research Findings

The results of the study conducted found that most frequent element renovated building in the historic building as the hotel adaptive re-use frequency are the wall, a building, wall finishes, ceiling and floor finishes.

These five elements have of percentages modification exceeds 10% as compared to the other elements. Wall is an elements that has the highest percentages of modification in adaptive re-use work of historic building as a hotel. Frequent modification done is the addition of walls in order to form more areas for living rooms and toilets. Unfortunately, most of the walls are not built in accordance with the original building material as the original existing wall.

6.2 Second Research Findings

The results of the observations that have been made over 4 selected hotels have shown that only two from four hotels achieved adaptive re-use principles in accordance with the principles of conservation. As a result of this finding, it indicate that most hotel owners are not focused on conservation principles outlined by the local authorities in carrying out the adaptive re-use of historic building works as a hotel.

6.3 Third Research Findings

The proposed assessment method is not only suitable for adaptive re-use of historic building as a hotel but also can be used to evaluate the adaptive re-use of historical buildings with other functions. Simple formula introduced the number of architectural elements preserved which meets the principles of conservation will be divided by the total number of elements that are evaluated. Then multiply by one hundred to obtain the percentage level of adaptive re-use made by the historic buildings.

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