

## Planning and Construction of 3 Star Hotels

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**Abstract:** The purpose of this study was to identify current research trends and clarify the changing direction of studies on Star hotels. Scholarly studies published between 1994 and 2014 were examined through content analysis, using such keywords as “Star hotels”, “deluxe hotels”, “upscale hotels”, “high-end hotels”, and “four- or five-star hotels”. The contributions were then screened to focus on Star hotel-centered topics. The search revealed 70 qualified scholarly research articles. Conceptual studies were limited, with empirical studies representing a majority of the Star hotel researches. The Star hotel researches that were identified were categorized into nine groups by research themes: marketing, human resources (HR), finance, strategic management, technology, service quality, food science, tourism and others, with marketing, HR and technology being the most popular research themes. Analysis of methodological trends in Star hotel research indicated that the majority of the researchers utilized quantitative methods

employing various statistical analysis techniques. Overall, Star hotel research is still limited in the number of publications and diversity of research topics. This study was the first comprehensive content analysis on Star hotels conducted to date. The findings of this study may provide future researchers and academicians with new insights based on past study as well as ideas for future research. It is hoped this study will contribute to the development of a reliable knowledge base from which practitioners may inform plans and action regarding future Star hotels.

### 1. INTRODUCTION

All of us well known that Cities is rapidly urbanizing, and it is the time to construct a star hotel to cater the need of all people near and around Cities by considering Cities as Zone-3. A commercial establishment providing lodging, meals, other guest rooms and bed rooms are necessary. Star hotel contains lobby, Restaurants, Bar, Banquet halls, Conference halls. The dimensions of the interior rooms are fixed as per the

guidelines of national building code. Sufficiently large doors and windows in good number are provided for better ventilation. A special feature of this building is the provision of ventilation from all sides as possible. Each room has got main entrance from a common corridor thus take care not to isolate any flat as a protection against burglary. The building is provided with a spacious staircase to avoid overcrowding.

The building is designed as a framed structure with brick walls as infill walls. All the exterior walls are one brick-wall while all the partition walls are half brick walls. We propose use  $M_{20}$  concrete and  $Fe_{415}$  bars for all structural components like slabs, beams columns and Foundation.

Coming to the structural features, they are rectangular buildings. All the columns are arranged in such a way that they form typical frames in length and width direction. The transverse frames are analysed by using the Portal method of analysis. The limit state method of collapse using IS: 456-2000, and SP-16 have been adopted for the design of all structural components like slabs, beams, columns and foundations. We have compared the manual analysis results with the results obtained by using the STAAD Pro Software. We have used the AUTO CAD for effective representation of the plans.

## **II. Overview of the Global Luxury Hotel Industry**

### **Market segmentation**

The lodging industry sector is generally classified into six categories: luxury hotels, upper-upscale, upscale, upper-midscale, midscale and economy (Miller et al, 2013). The current study examined the luxury hotel segment, which can be further divided into luxury major, luxury exclusive and upper upscale (The World Luxury Index, 2013).

Luxury major refers to luxury brands of a major integrated chain, examples including Sofitel, Ritz Carlton, and many others. Luxury exclusives are luxury brands of a small/ medium sized exclusive luxury hotel chain, such instances being Four Seasons, Kempinski, Mandarin Oriental, etc. (The World Luxury Index, 2013).

Upper upscale brands are primary segments from integrated chains such as Hilton, Hyatt and Sheraton. Bobby Bowers, Senior V. P. of Smith Travel Research, stated, “Upper upscale hotels are among the most challenging to finance, develop, and operate. These properties involve significant risk, barriers to entry are often formidable, and development and construction time is lengthy” (Miller et al, 2012). Upper upscale is also included as part of luxury category due to the fact that “luxury” is a

very subjective notion and no single criteria could comprehensively define whether a property is luxury or not. Hotels like Hilton and Hyatt are obviously luxury in a lot of people's eyes even they are specifically categorized as upper upscale in the academia of hospitality management.

### **Branding of luxury hotels**

To better understand luxury hotel segmentation, the current author selected one brand from each segment of luxury hotels to explain its characteristics and brand focus. Hilton, No.1 Upper Upscale Chain hotel brand (in all categories) with 22.8% of Global demand, operates more than 550 Properties with a total of 193,064 Rooms in 80 countries in 6 Continents (World Luxury Index, 2013). Hilton brand enjoys strong brand awareness and brand recall in most of its key markets where it operates, including U.S. (87%), Mexico (90%), Europe (91%), and Asia Pacific (90%). In addition, Hilton has a diverse profile of Convention Center Hotels, Resorts, Airport Hotels and Casino Hotels with a global sales mix: 34% Leisure, 32% Business, and 34% Group (Miller et al., 2013).

Representative in the category of luxury exclusive, Four Seasons is the top sought after exclusive hotel brand, with 4.8% of

global demand. The fastest growing market of Four Seasons is in the U.K., with a growth rate of 12.4% (World Luxury Index, 2013). Four Seasons manages the operations of 90 hotels in 36 countries and is only targeted at the luxury segment of the global marketplace. Four Seasons derived 69% of its sales from business travelers and groups and 31% from the leisure sector (Timetric, 2013).

The top hotel in luxury major category is Ritz- Carlton, which embraces 4.6% of global demand. Ritz-Carlton has become a leading luxury hotel brand by rigorously developing and implementing unique standards. One of its remarkable policies is to permit every employee to spend up to \$2,000 to respond to guests' wishes and making any single guest satisfied (World Luxury Index, 2013)

Thus we feel that structure fulfils the basic requirements of good designing and planning by using effectively every inch of space available and also justifies its name by increasing the beauty of landscape.

### **III.COMPONENTSOF ABUILDING:**

#### **Foundation: -**

It is the lowest part of a structure below the ground level which is direct

contact with ground and transmitted all the dead, live and other loads to the soil on which the structure rests.

**Plinth: -**

The portion of a building and the top of the floor immediately above the ground is known as plinth. The level of the surrounding ground is known as formation level of the ground floor of the building is known as plinth level.

**Walls: -**

Walls are provided to enclose or divide the floor space desired pattern in addition wall provided privacy security and give protection against sun, rain, cold and other undesired effect of the weather.

**Column: -**

A column may be defined as an isolated load bearing member, the width of which is neither less than its thickness. It carries the axially compressive load.

**Floors: -**

Floors are flat supporting elements of a building. They divided a building into different levels. There by creating more accommodation on a given plot of land. The basic purpose of a floor is to provide a firm and other items like stores, furniture, equipment etc.

**Doors, Windows and Ventilators: -**

A door may be defined as a barrier secured in an opening left in a wall to provide usual means of access to a building, room or passage. Windows and

ventilators are provided for sun light, fresh air and ventilation purposes.

**Roof: -**

It is the uppermost component of a building and its function is to cover the space below it of a room and protect it from rain, snow, sun, wind etc.

**Buildings Finishes: -**

A building is considered incomplete till such time the surface of its components is given appropriate treatment

**IV. DESIGN OF SHEAR WALLS**

**Design:**

Total lateral force on the structure = 566kN

The load is increased to 25% for the design =  $566 + 0.25 \times 566$

= 710kN

In order to safeguard buckling in the potential plastic hinge region of walls, the minimum thickness of shear wall should be 150mm.

Hence, assume the thickness of wall as 250mm.

Overall dimensions of the shear wall are 0.25mX3.5mX5.4m

**Check for shear:**

Total lateral force  $V_u = 710\text{kN}$

Nominal shear stress  $\tau_v = V_u / 2 \times$

$T_w \times L_w$

Where,

$T_w$  = Thickness of wall = 250mm

$L_w$  = Effective length of wall =  $0.8 \times 5400$   
= 4320mm

Hence,

$$\tau_v = 710 \times 10^3 / 2 \times 250 \times 4320$$

$$= 0.33 \text{ N/mm}^2$$

For  $M_{20}$  grade concrete and  $Fe_{415}$  steel

Permissible shear stress =  $0.3 \text{ N/mm}^2$

Maximum Permissible shear stress = 0.25

(square root(20))

$$= 1.118 \text{ N/mm}^2$$

Hence safe

But,

Permissible shear stress is less than  
developed shear stress

So, shear reinforcement is required.

Shear force required for shear

reinforcement  $V_{us} = (\tau_v - \tau_c) \times \text{area}$

$$= (0.36 - 0.3) \times 250 \times 4320$$

$$= 32.6 \text{ kN}$$

Assume 8mm diameter bars

Spacing between the bars  $S_v = 0.87 \times f_y \times$

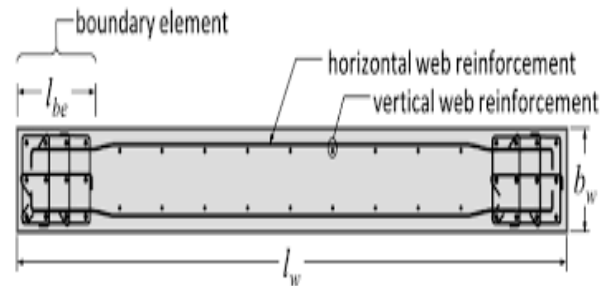
$A_h \times d_w / V_{us}$

$$= 0.87 \times 415 \times 100 \times 4320 / 32.6 \times 10^3$$

$$= 478.4 \text{ mm}$$

But, the maximum spacing should not be  
greater than 450mm

Hence, provide 8mm diameter bars at  
250mm c/c spacing in two curtains as  
horizontal and vertical reinforcement.



**Fig 1: reinforcement distribution in shear wall**

## V.CONCLUSION

- Planning of the star lodging has been done according to the particular given in NBC
- AUTO CAD 2010 is utilized for building up the plans.
- Manual investigation utilizing entryway outline technique has been done and contrasted these outcomes and results acquired from the product of STAAD Pro.
- It was watched that the bowing minute esteems acquired from manual count is vary most extreme of 5 percent of the twisting minute esteems got from STAAD Pro.
- IS 456-2000, SP-16 and IS 1893-2002 codes are utilized for the planning of auxiliary components.

- M20 review concrete, Fe415; steel are utilized as a part of the present examination.

## References

1. Phillip Kotler, & Gary Armstrong.(2003). *Principles of Marketing*, New Delhi: Prentice Hall of India Private Limited, 53.
2. Phillip Kotler, *et al.*,(2005). *Marketing of Hospitality and Tourism*, Delhi: Pearson Education,26.
3. Tom Powers. (2004). *Marketing of Hospitality and Tourism*, New Jersey: John Wiley and Sons, 170.
4. Raymond Corey, E., Frank, V.Cespedes, & Rangan,V.K. (1989). *Go in to Market*, Boston: *Harward Business school Press*, XXVii
5. Louis, W. Stern., & Adel, I.E.I.Hansary. (1988). *Marketing Channels*, New Delhi: Prentice Hall, 3.
6. Melvin Greene.(1989). *Marketing Hotels and Restaurants in the 90's*, London: Heinemann Professional Publishing,160-162 & 264.
7. Zenithal. & Bitner.(2003). *Services Marketing*, New Delhi: Tata Mc Graw Hill, 387-392.

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