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Authors	Abdelrazik, Ahmed;Moustafa, Aseel
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Accounting for Neurodiverse Users in the Practice of Interior Design: A Case for User-Friendly Hotels

Dr. Ahmed M. Abdelrazik

Assistant Professor

Design Department, College of Architecture and Design, Effat University, KSA

Interior Design and Furniture Department, Faculty of Applied Arts, Helwan University, Egypt

<https://orcid.org/0000-0002-4724-776X>

aabdelrazik@effatuniversity.edu.sa

ahmed-abdelrazik@a-arts.helwan.edu.eg

abdelrzik2005@yahoo.com

Aseel Moustafa

Senior student, Design Department, College of Architecture and Design, Effat University, KSA

asamoustafa@effat.edu.sa

Abstract:

In an ever-changing world where people seek new and compelling experiences, hospitality, commerce, and entertainment are joining forces to create extraordinary destinations. People vary between adventure seekers, moderate behavior, and introverted individuals searching for independent, varied experiences and leisure activities without extensive social interaction. The facilities designed and provided for introverted individuals are usually challenging and require an in-depth understanding of their attitudes, needs, expectations, and reactions.

This paper aims to go beyond the traditional constraints in the interior design of mixed-use hotels, where the researcher studies introverted individuals' behavior as essential knowledge to guide the design process of these unusual hotels.

In addition to the literature review, in-depth research was applied using a qualitative approach. Well-selected case studies were analyzed and evaluated considering international standards to give a recommended approach that enhances the interior design environment and reflects the positive impact of applying suitable interior design aspects, as well as a survey study was conducted to investigate the Saudi people's requirements, preferences, and desires.

Keywords:

Introvert individuals, mixed-use hotel, interior design, user experience, design impact.

Introduction:

In today's world, people seek new experiences, and hospitality, commerce, and entertainment are combining forces to create extraordinary destinations. This meaning is in harmony with the interior design goal, which works to develop a ground-breaking holistic hotel experience that responds to the dynamic shifts brought about by the COVID-19 pandemic, providing year-round enjoyment for introverted individuals searching for independent shopping experiences and leisure activities without extensive social interaction.

The focus of this paper is to go beyond the traditional interior entertainment settings, reaching an understanding of the user requirements and how to enhance his/her experience in this specific type of hotel. Through the literature review, the paper briefly begins by highlighting the hospitality and hotel history, clarifying the kind of Mixed-use hotel.

On one side, it discusses the benefits of mixed-use hotels for introverts, especially after the COVID-19 pandemic, and how there has been an increase in the number of introverts worldwide. On the other hand, the paper presents some facts about the growth of tourism in Saudi Arabia, how this industry developed, and the need for Mixed-Use Hotels.

Indeed, designing an interior space where introverts are not just accommodated but celebrated, a place that caters to their distinct preferences for minimized social interaction while delivering a range of services controlled through contactless engagement principles through the innovative use of unmanned technologies, such as unmanned stores, cafés, and other leisure activities all in one hotel for an all-inclusive, introvert-friendly experience where safety, comfort, and peace is paramount.

The study employs a mixed-methods approach, combining qualitative literature reviews to understand introverted individuals' preferences and societal trends. In addition, various case studies were assessed, encompassing both hotels that have already embraced comparable concepts, such as mixed-use hotels and unmanned facilities, in response to the issues raised by the epidemic. Moreover, the study surveyed diverse demographics to assess desired styles and atmospheres for the capstone project, aiming to determine popular preferences and guide the selection of appealing design options. The case study analysis was conducted by selecting two varied examples and the survey study was done to investigate the Saudi people's opinions on whether they have or need this kind of hotel.

The central hypothesis that was examined in this paper is that designing an all-inclusive hotel with a focus on contactless interactions and introverted preferences could revolutionize the hospitality industry. Potential benefits include improved well-being, safety, and economic contributions to initiatives like Saudi Arabia's Vision 2030.

Literature Review:

People in this world are classified as either introverts or extroverts, terms established by the well-known German psychologist Carl Gustav Jung in the twentieth century.

Akkayagorn (2023) highlights the distinction between the two personalities, based on Carl Gustav Jung's theory of energy gain and storage in different settings. Jung's theory suggests that extroverts thrive in social interaction, while introverts find recharge in solitude, security, and peaceful environments. Akkayagorn (2023), a psychiatrist, argues that introversion and extroversion are not diseases or abnormal behaviors, but Introverts are often stereotyped and undervalued by society, As stated by Al-Naami (2022), they are usually viewed as second-rate personality types and often struggle to establish their value due to the exclusive design of facilities and institutes for extroverted individuals, leaving no room for introverts.

According to Al-Naami's (2022) observations, society has traditionally regarded introverted people as second-rate personality types, frequently attributing their introversion to disease or personality disorder. Notably, most spaces and institutes are primarily designed to appeal to extroverted individuals' demands and characteristics. As a result of this prejudice, introverts frequently feel misfit, seeking a place of belonging that is frequently overlooked.

When COVID-19 hit, the world economic diversification policies were impacted negatively. People had to start thinking of different methods to adjust to the new lifestyle. The epidemic has highlighted the need to accommodate a wide range of personalities, especially in an era where social distance and virtual contact have become the norm. This has led to the need for an all-inclusive interior design solution that integrates the introvert's inner world into a solid, real-world experience.

According to Whitcher's (2017) observations, popular opinions of introverts and extroverts are frequently constrained to narrow stereotypes, ignoring the complexity of these personality types. The ratio of introverts to extroverts in society varies, ranging from a 50:50 split to one-third introverts and two-thirds extroverts. This variety illustrates the need to design a space that fulfils the needs of the introverts' complex personality.

Moreover, The COVID-19 epidemic has highlighted the complexities of these personality qualities, questioning existing assumptions about introverts' ability to adapt to solitude. Contrary to common belief, the epidemic has demonstrated that, while introverts may like being alone, prolonged isolation has a greater negative influence on their mental health than extroverts, as stated by Shokrkon (2021).

This emphasizes the importance of designing spaces for introverts by minimizing social interaction and using unmanned technology for contactless services, particularly during the COVID-19 pandemic, to provide an all-inclusive, introvert-friendly hotel experience.

Hospitality and hotels:

The term "hotel" originates from the French word "hôtel" and refers to an establishment providing lodging, food, beverage, and recreational facilities. Its importance, as described by the book 'Scope and Nature of Hotel Management,' can be traced back to its long history of expansion and its diverse size and scale.

The development of innkeeping and hospitality in Europe dates to the fifth century BC, with the Industrial Revolution paving the way for modern hotel concepts. The history and growth of the hotel sector may be divided into three periods. As mentioned by Tourism Notes (2018). The Ancient Era saw modest facilities in Greece, while the Grand Tour Era saw the rise of the industry among wealthy British families. Finally, the modern Era saw advancements in transportation, motels, and budget hotels, leading to the rise of national and international hotel chains.

Benefits of Mixed-Use Hotels in accordance with introverts:

According to Valtr (2023), mixed-use real estate, combining residential, business, and commercial amenities, is gaining popularity due to its pedestrian-friendly design. As cities become congested and work-life boundaries blur, hotels lead the way in this paradigm, benefiting public health, society, and the environment. (The Iqbal Institute of Policy Studies,2023).

The Iqbal Institute of Policy Studies (2023) highlights the advantages of mixed-use buildings for introverts, including convenience, accessibility, variety of experiences, and improved security. These buildings offer a one-stop-shop experience, combining hotels with restaurants, health centers, co-working spaces, offices, and residential areas. The growing popularity of mixed-use buildings in Saudi Arabia is expected to continue, providing an all-inclusive living experience combining shopping, entertainment, and

healthcare services. The real estate industry plays a crucial role in the country's economy.

Tourism in Saudi Arabia:

Saudi Arabia is one of the mega Middle Eastern countries with a robust developed economy and a futuristic vision. For "Savills", the Middle East's leading real estate services provider (2023), Saudi Arabia's tourism sector thrives due to leisure, pilgrim, and corporate travel demands. According to the most current yearly figures, travel and tourism account for 9.4% of the country's financial resources, with traveler spending increasing by 10.5% annually.

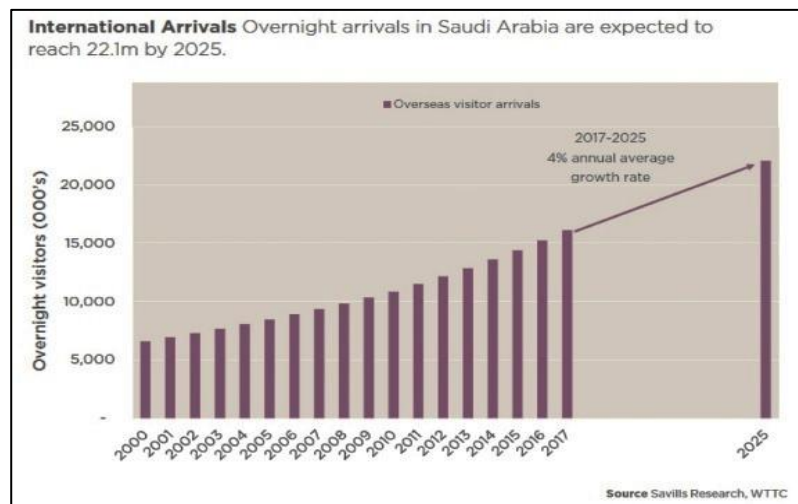


Figure 4.1: Expected Increase in the number of visitors to Saudi Arabia (Source: Savills Research, WTTC, 2024)

Statistics done by Al-Masha (2022) show that the country's hotel industry is expanding, with 12,000 rooms opening in 2022 and 48,000 being built in 2023 (Figure 4.1). This growth highlights the need for a wider variety of hospitality projects to meet the increasing demand for hotel rooms.

Tourism sector reached new high in 2022 with 12,000 hotel room openings, highest in hospitality industry. According to Knight Frank, Growth expected to reach 403,000 rooms by 2030 increasing by 215% (Figure 4.2).

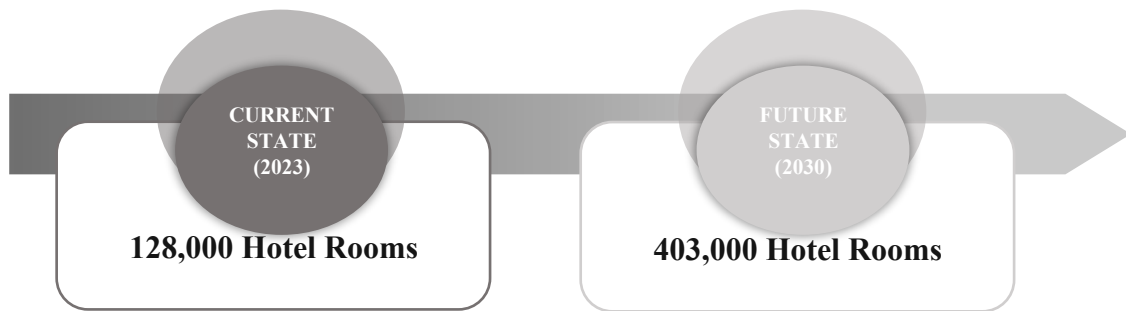


Figure 4.2: Shows the expected increase in the number of hotel rooms (source: created by the authors)

The impact of COVID-19:

One of the most significant sectors in the world is the hospitality industry. According to Alotaibi (2022), it employs millions of people. However, it has been severely impacted by the COVID-19 pandemic, leading to millions of job losses and billions of dollars in revenue loss. According to Century21 (2020), the sector was particularly affected in Saudi Arabia, with a significant drop in occupancy rates, dropping from 60% in 2019 to 37% in 2020.

This has led to a substantial impact on the industry globally. Figures 4.3 & 4.4 show a comparison of hotel performance in Riyadh and Jeddah from 2015 to 2020.

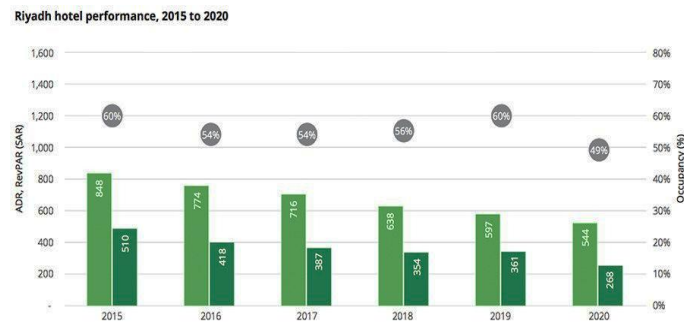


Figure 4.3: A comparison of hotel performance in Riyadh from 2015 to 2020 (source: STR Global, 2024)

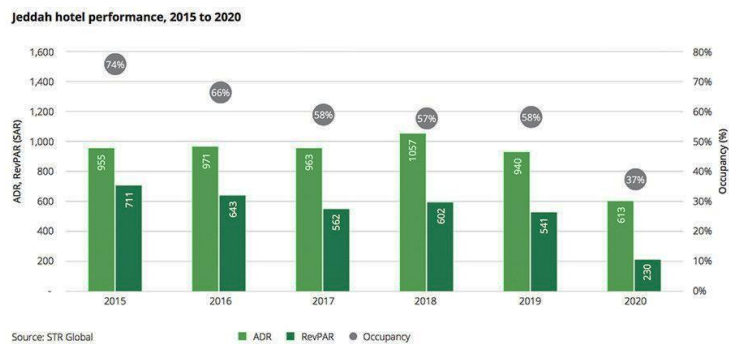


Figure 4.4: A comparison of hotel performance in Jeddah from 2015 to 2020 (source: STR Global, 2024)

The impact on Introverted Individuals:

The COVID-19 pandemic has significantly impacted introverts, who often find it easier to survive in isolation. According to Anahita Shokrkon (2021), extroverts, who find ways to connect, have better mental health, happiness, and relationships, while introverts struggle to maintain their social connections. However, Susan's best-selling book "Quiet: The Power of Introverts in a World That Can't Stop Talking" (2012), states that when given the right environment, introverts can thrive in the presence of extroversion. The increase in contactless interactions presents an opportunity for the hotel industry to develop services and meet the growing demands of introverted clients.

The number of Introverts worldwide:

The world's population combines introverted and extroverted traits, making people 100% ambiverts. Research shows that 40% of the global population is more introverted than extroverted (Figure 4.5), with the COVID-19 pandemic increasing this trend. This study highlights the importance of accommodating and celebrating introverted traits in various societal contexts. (Kotchounian, 2022).

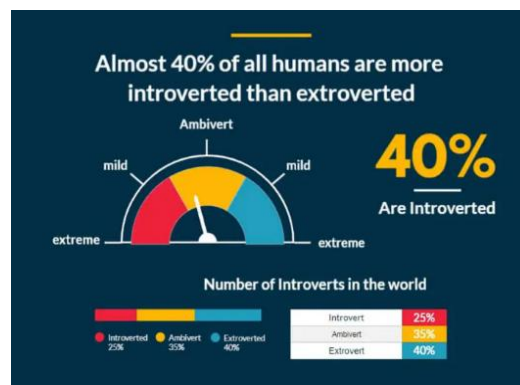


Figure 4.5: A graph depicting the ratio of introverts versus extroverts. (source: Kotchounian, 2022)

The use of AI in the hotel sector:

The COVID-19 pandemic has led to the adoption of contactless technology for smart-mobility, reducing the transmission of infection. Smart cards, fingerprint identification, and code-based access are becoming more popular, with artificial intelligence sensors becoming increasingly popular. (Hiremani, 2022).

AI is also used in hotels to cater to introverted visitors' needs and offer benefits.

According to Axis Room (2022), it includes streamlined operations, personalized communication, data analytics, and multilingual booking experiences. AI-powered tools

can provide smooth and rapid responses to guests' inquiries, addressing language barriers and fostering concise conversations. This approach not only addresses the needs of introverted customers but also improves operational efficiency and guest satisfaction.

The Saudi Population and the use of AI:

According to Axis Rooms (2022), artificial intelligence (AI) has become a crucial tool in the hospitality industry, enabling hoteliers to gather and analyze client information, optimize customer service, and increase efficiency. It allowed for improved revenue, reduced time and effort, and increased profits, enabling the sector to compete with leading competitors.

The hotel industry must adapt to the changing demographics of millennials and Gen Z to ensure its success. Stephan (2018) states that these generations seek experiences and connections beyond traditional services. Hoteliers must forecast the needs of these generations and provide a digital experience that fosters engagement and contentment. Mobile technologies are crucial for interaction, as they thrive on the digital platform, making it essential for hotels to cater to their needs and preferences. (Ramgade, 2020). As stated by the General Authority for Statistics (2023), figure 4.6 shows that Saudi Arabia's millennial population comprises 52.75% of the country's population, presenting a unique opportunity for AI integration in hotel design. As the travel and tourism industry evolves, incorporating new technologies for customer engagement is crucial. AI plays a significant role in the hotel industry, assisting organizations in making informed decisions and delivering superior guest experiences (Grant Thornton,2023).

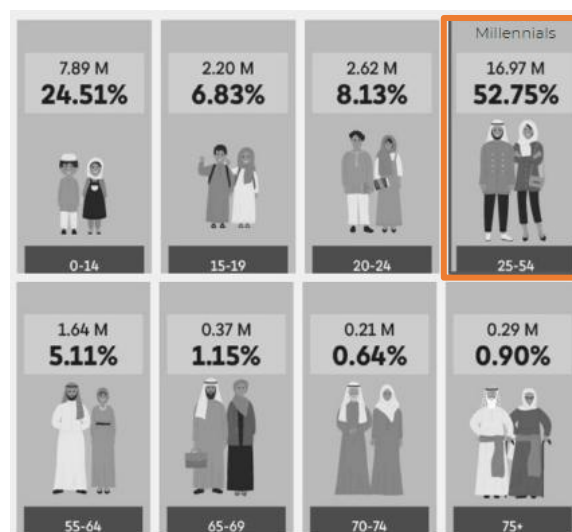


Figure 4.6: Millennials make up 52.75% of Saudi Arabia population.
(source: GMI Research Team, 2024)

Case study (1): CityHub Copenhagen

background:

“CityHub” Hotels was founded in Amsterdam in 2015 by Pieter van Tilburg and Sem Schuurkes, aiming to provide unique, affordable, and connected accommodation for modern travelers. The concept, which focuses on technological integration, social connectedness, and comfort, has expanded to other cities like Rotterdam and Copenhagen. CityHub's innovative approach includes RFID wristbands as room keys and a hotel app for guest communication and city information.

Project Information:

Project Name: CityHub Copenhagen	Number of Floor Levels: One Floor
Location: Vesterbro, Copenhagen, Denmark	Project Completion: September 2020
Total Area: 2787.0228Sqm	Designer: SPACON & X

Target Audience:

“CityHub” Copenhagen offers a diverse range of accommodations, catering to both introverts and extroverts, with its inclusive design and advanced technology, ensuring a personalized and engaging stay in the city's heart.

Site and location:

“CityHub” Hotel is located on H.C. Andersens Boulevard, offering easy access to Copenhagen's attractions, facilities, and transit options. It is close to Tivoli Gardens, City Hall Square, and Stroger, with Copenhagen Central Station and bus stops nearby. The hotel offers a variety of dining options, including traditional Danish and international cuisine, and offers amenities like convenience stores and pharmacies. It also provides services like a common lounge, 24-hour reception, bike rentals, and partnerships with local businesses.

Plan Analysis:

The floor plan layout of “CityHub” Hotel is meticulously planned to maximize space and smooths flow for guests. It features 215 compact hub zones, each meticulously designed to provide visitors with a cozy and tech-savvy retreat. These hubs serve as the hotel's primary accommodation units (Figure 4.7).

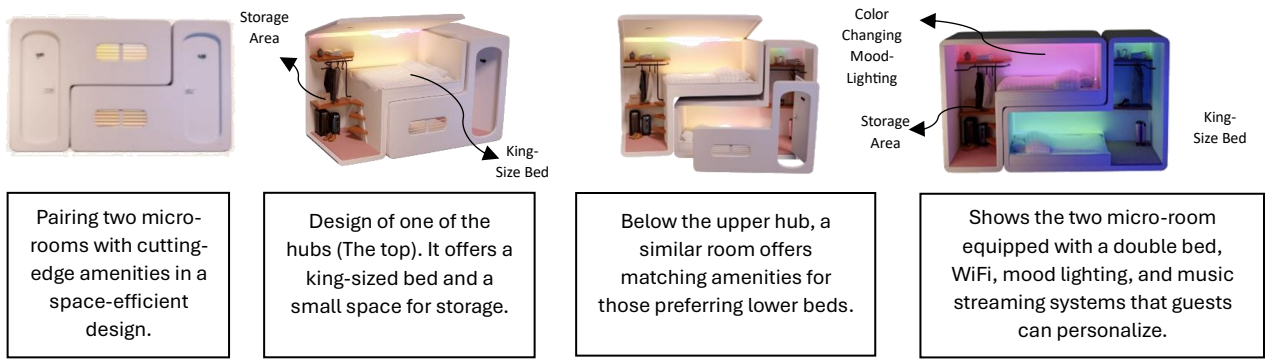


Figure 4.7: The hub analysis (source: CityHub Copenhagen website)

CityHub Floor Plan:

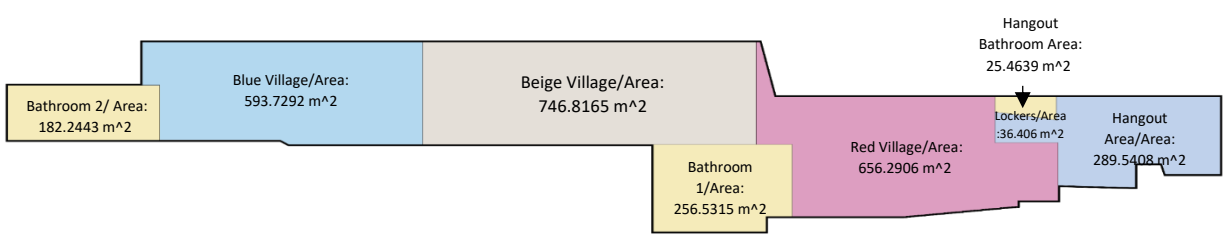


Figure 4.8: CityHub floor plan (out of scale) (source: CityHub Copenhagen website)

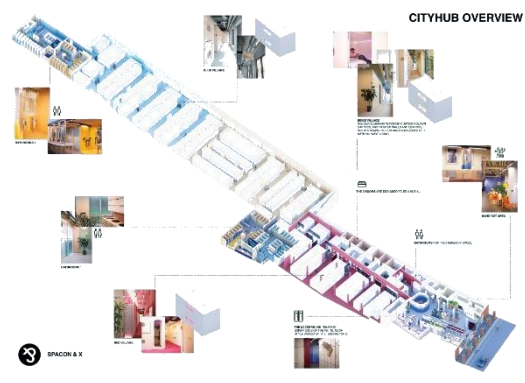


Figure 4.9: Overview of CityHub and its main components (source: CityHub Copenhagen website)

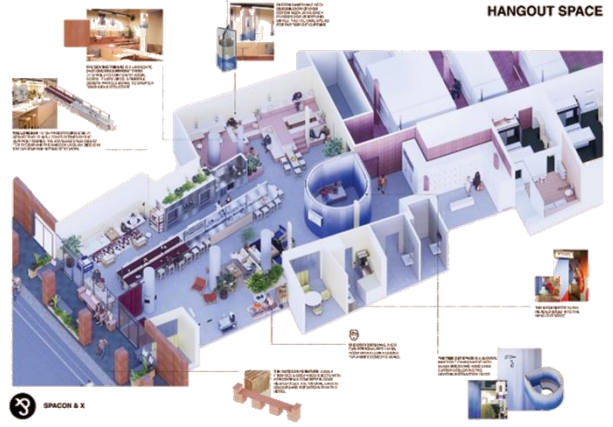


Figure 4.10: Overview of CityHub hangout space and its main components (source: CityHub Copenhagen website)

The CityHub's floor layout focuses on efficient circulation channels, ensuring guests can easily transition between private and shared areas. Clear routes and color changes guide guests, while RFID entry points ensure secure movement.

The hotel's strategic positioning balances solitude and social engagement, with private hubs providing a calmer environment and communal zones stimulating socialization. This design enhances the overall guest experience.

Communal zones: including the Hangout area, are strategically located throughout the property, promoting social engagement and relaxation, fostering interactions and discussions during the CityHub experience.

Interior Programming:

	User	Name	Quantity	Total Space	Percentage
Entrance					
Public	Clients	Hangout Area	1	289.5408m ²	10.38889241%
Services					
Public	Clients	Lockers	1	36.4060m ²	1.306268467%
		Hangout Bathroom	1	25.4639m ²	0.913659551%
		Hubs' Bathroom	2	438.7758m ²	15.74353105%
Guest Rooms					
Private	Client	Blue Village	69	593.7292m ²	21.30334922%
		Red Village	72	656.2906m ²	23.54808866%
		Beige Village	74	746.8165m ²	26.79621064%
Total Area: 2787.0228m²					

Table 4.1: Programming-case study 1 (source: created by the authors)

Interior Analysis:

In addition to studying the interior layout, programming, and the circulation, it is essential to highlight the used interior design elements by investigating each item such as flooring, ceiling, walls, lighting, color and furniture ...

Flooring:

CityHub's flooring is both visually appealing and functional, serving as a navigational aid, enhancing the guest experience as they navigate through different zones.

The Hub Zone



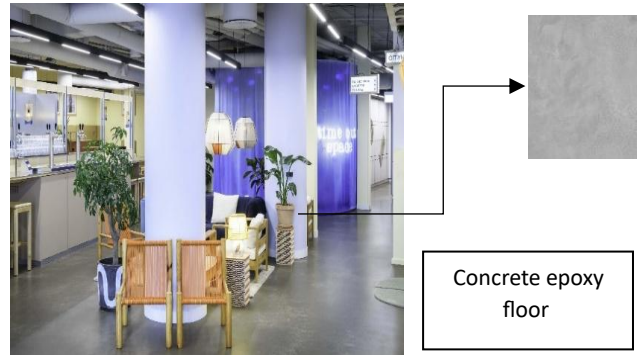
Blue Village- Blue Carpet

Red Village-Red

Beige Village- Beige Carpet

The hotel uses colored carpets to create distinct hub zones, resembling individual villages. The "Blue Village" has blue carpeting, the "Beige Village" has beige carpeting, and the "Red Village" has red carpeting guiding visitors through the space, creating a visual map.

The Hangout Area

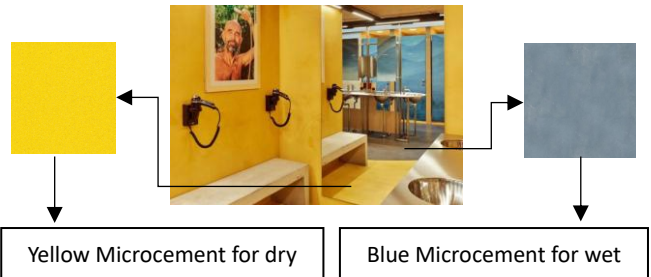


Concrete epoxy floor

The primary hangout area features concrete epoxy flooring for durability, contemporary feel, and ease of maintenance, making it an ideal space for socializing and meeting.

The Bathroom Zones

Bathrooms use colored concrete floors for functional and aesthetic purposes, dividing wet and dry spaces, enhancing navigation, and providing a visually engaging and easy-to-navigate setting.



Yellow Microcement for dry

Blue Microcement for wet

Ceiling:

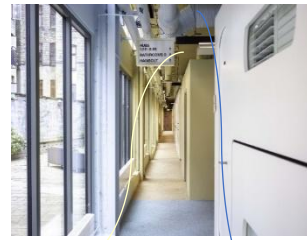
The Hangout Area



Hangout Area- Exposed Ceiling Design

CityHub Copenhagen's ceiling design features an industrial style with exposed elements, enhancing the hotel's contemporary ambiance and creating a spacious feel in its interior spaces.

The Hub Zone



The Hub Zones- Color Coded Exposed Ceiling Design

The hubs' ceiling design are like the flooring features color-coded zones, with each village having a corresponding-colored ceiling, creating a unified visual language, and emphasizing its character.

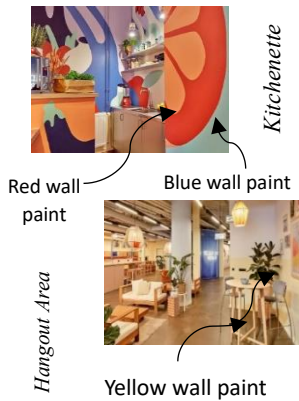


The Bathroom- Wood wool acoustic panels

The bathrooms use unique wood wool acoustic panels. According to EarconsAcoustic, these panels made of wood and magnesite, have moisture-absorbing and emission characteristics, making them perfect for wet environments like bathrooms and swimming pools, providing practical, functional, and warmth-enhancing acoustic comfort.

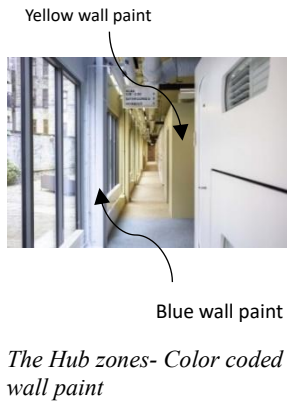
Walls:

The Hangout Area

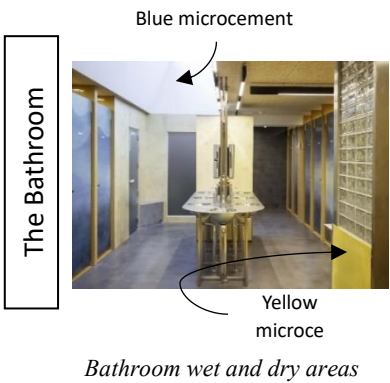


The hangout area features red locker walls, tiered seating walls painted beige, the remaining space adorned with blue walls, and a creative kitchenette mural, adding a touch of mood to the space.

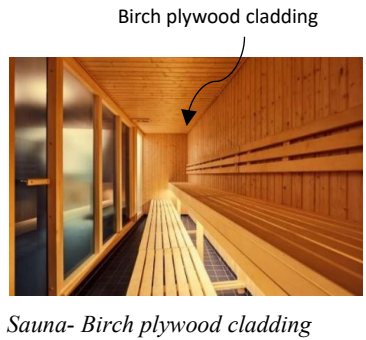
The Hub Zone



The hub zones' walls, like the ceiling, are color-coded, with Blue Village, Beige Village, and Red Village featuring blue, beige, and red paints, providing a cohesive visual identity for guests.

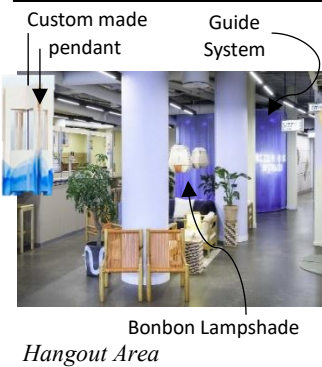


CityHub's modern design features and practicality are showcased through color-coded walls, artistic murals, and diverse materials, creating a visually appealing and cohesive environment for guests.



Lighting:

The Hangout Area

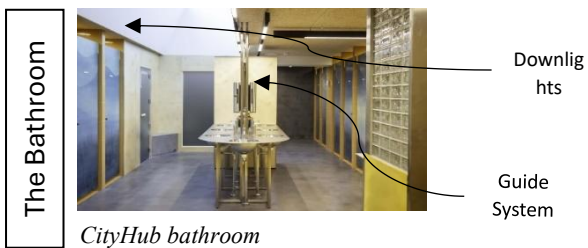


CityHub Hotel Copenhagen features an industrial-style ceiling with a guiding system of lights, providing discreet illumination assists in navigating, enhancing functionality and comfort for various activities.

The Hub Zone



The hubs feature adjustable lighting, allowing guests to adjust brightness levels and create their desired mood, enhancing comfort and personalization in the room.



Guide systems in bathrooms blend practical and ambient lighting, while downlights are used in shower cubicles and sauna areas for a quiet, relaxing experience.

Furniture:

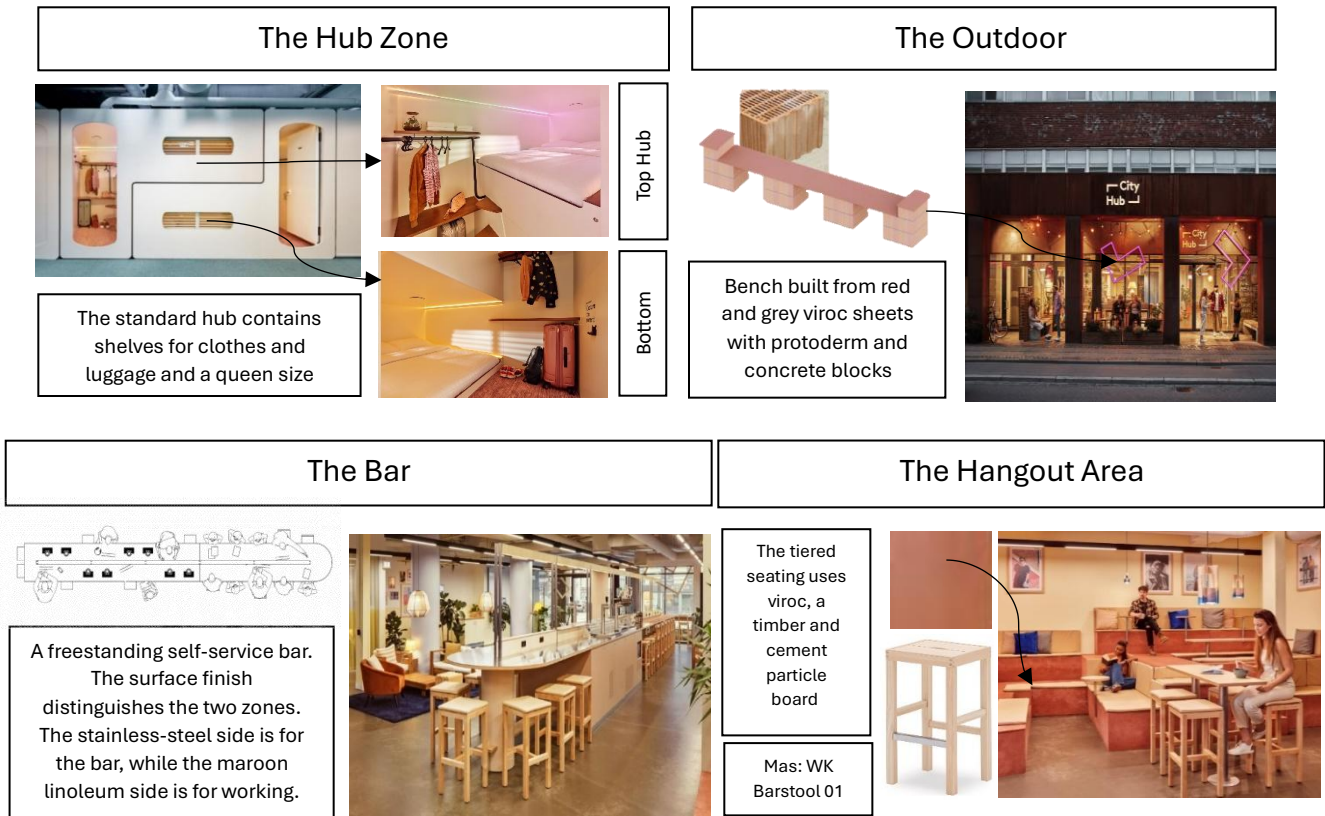


Figure 4.11: Interior design elements analysis: flooring, ceiling, walls, lighting and furniture (source: CityHub hotel website, analysis by the authors)

Materials and Color Scheme:

CityHub's contemporary hotel offers a pleasant experience through a balance of materials and a uniform color scheme. The Hangout Area features a freestanding self-service bar that combines stainless steel for the bar surface and maroon linoleum for the working space. The tiered seating is made of Virco, timber, and cement particle materials, providing a continuous structure, while the Hub Zone is divided into three distinct zones with unique colors. Finally, the bathroom zones use stainless steel, glass bricks, Portuguese tiles, and birch plywood for functionality and visual appeal.

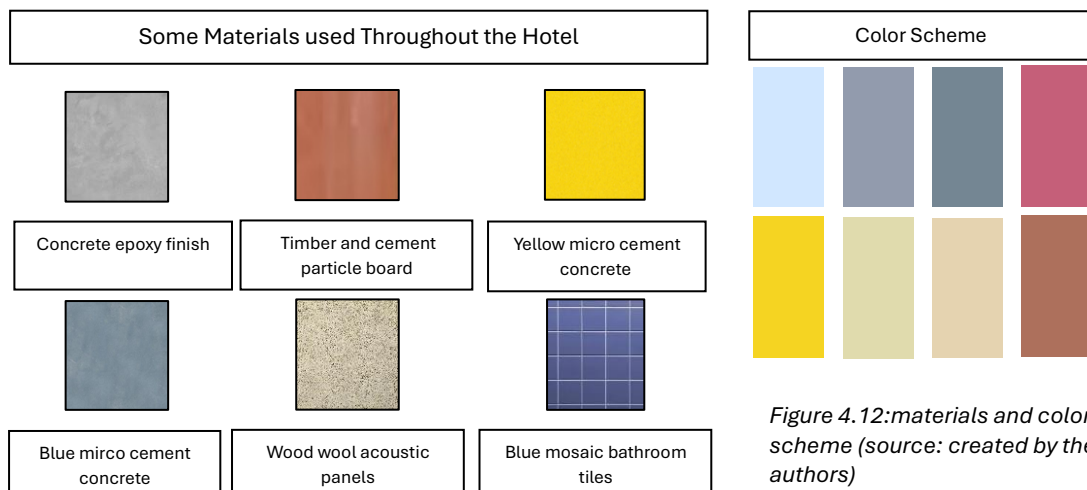


Figure 4.12: materials and color scheme (source: created by the authors)

Case study (2): Yotel New York Hotel

Project Name: YOTEL New York at Times Square West

Location: 570 10th Avenue, New York, NY 10036

Total Area: 21367.69Sqm

Number of Floor Levels: Public Space – 2 levels; Guestrooms – 19 levels

Project Completion: June 2011

Designer: Softroom and Rockwell Group

Background:

YOTEL, a globally recognized tech-driven hospitality company that consists of three unique brands—YOTEL, YOTELAIR, and YOTELPAD—reinvents hotel experiences by maximizing space and time via smart design and technology. The combination of cutting-edge technology and design to provide smooth, efficient, and luxurious stays is at the core of YOTEL's concept. YOTEL's cabins, inspired by first-class air travel, combine elegance and productivity, with unique Smart-Beds and high-tech facilities like SMART TVs and fast Wi-Fi.

The origins of YOTEL may be traced back to the airline sector, with the richness of first-class air travel serving as inspiration. This impact may be seen not just in the hotel's design but also in the way it approaches its employees, identified as "crews." Its self-service kiosks and cabin-inspired rooms are technologically driven spaces that cleverly maximize functionality without sacrificing comfort. and a future app will speed check-ins, giving guests more time to explore. (Prulhiere, 2020).

Target Audience:

According to Prulhiere (2020), YOTEL targets Millennials, which includes people in their twenties and thirties who enjoy seamless digital interactions, social connectivity, and a balance of productivity and leisure. Nevertheless, YOTEL, stays inclusive, welcoming guests from various demographics, and strives to provide unforgettable experiences that integrate creativity and innovation while ensuring customers' desire for future visits.

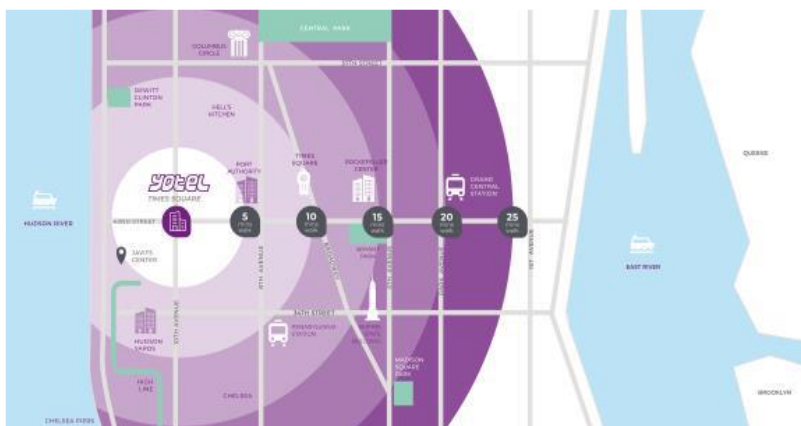


Figure 4.13: A map showing the site of Yotel newyork (out of scale)
(source: Yotel hotel website)

Yotel New York is situated in Midtown Manhattan, notably in Hell's Kitchen. This places it close to some of the city's most popular attractions, such as Times Square, Broadway theatres, and Hudson Yards. Due to its central position in the bustling core of New York City, the site serves both leisure and business travelers.

The hotel's nearby surroundings feature a mix of commercial and residential sectors. Hell's Kitchen is well-known for its numerous food options, lively nightlife, and a mix of historic and modern architecture. The proximity of the Yotel to restaurants, entertainment venues, and shopping offers visitors several options for exploration and convenience.


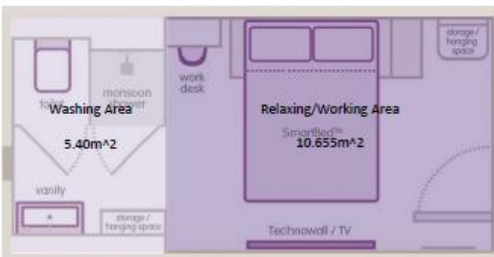
Accessibility is critical for any hotel, especially in a metropolis like New York. Yotel New York is strategically positioned near major transit hubs such as Penn Station and the Port Authority Bus Terminal, making it easy to reach for visitors coming by train or bus. Furthermore, its central location provides easy access to subway lines, facilitating movement around the city.


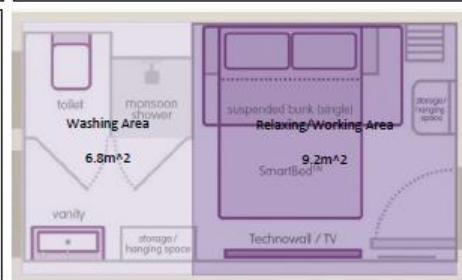
Yotel New York's central location and accessibility positively impact its operations by generating a regular flow of customers and assuring high occupancy rates. The lively surroundings enhance the visitor's experience by providing a taste of New York City's unique culture, food opportunities, and entertainment. However, the area's bustling nature may bring issues like high noise levels or increased traffic, affecting visitor comfort. The hotel's architecture, which includes soundproofing and creative room amenities, could mitigate these challenges, ensuring guests have a comfortable stay.

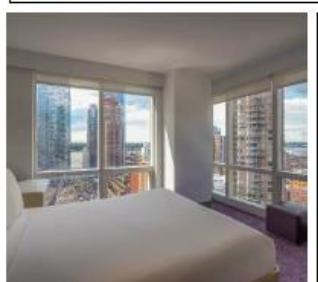

Plan Analysis:

According to Frearson (2011), Yotel New York has 669 luxurious cabins. It differs from other Yotel locations in that it has a larger room variety, including 19 First Class Cabins, 3 VIP Cabin Suites, and regular Premium Cabins. The hotel has 18,000 square feet of adjustable public space, which includes a bar, restaurant, gym, event studio, cinema, and a stunning 4,000-square-foot outdoor terrace (New York City's largest hotel terrace). This analysis will look at the various rooms and key public areas at Yotel New York, examining their configurations and spaces to reveal the strategic use of square footage for an exceptional guest experience.

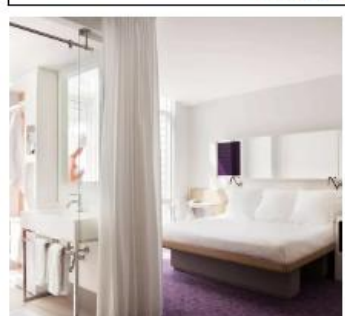

The various rooms available:

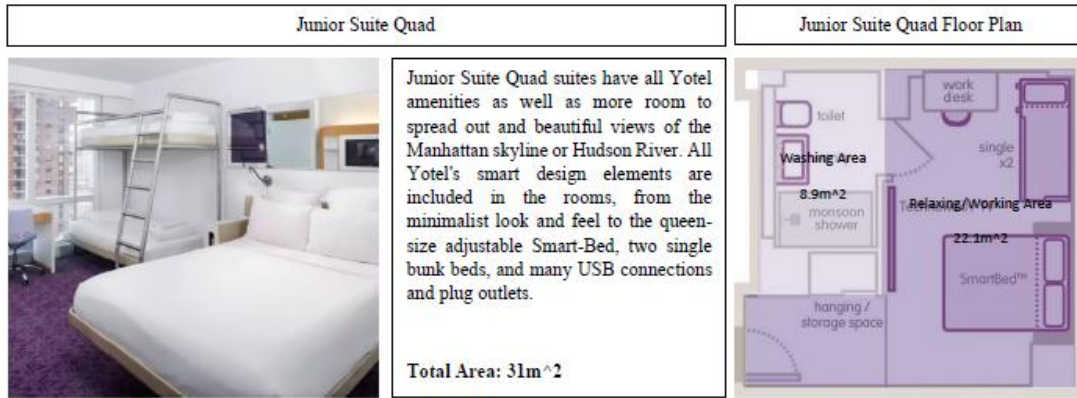
Premium Queen Room	Premium Queen Room Floor Plan
	<p>Yotel's stylish Queen rooms feature a smart minimalist design to maximize space for up to two guests with a compact work desk, multiple USB ports, mood lighting, and a fully-adjustable Smart-Bed for relaxing, working, or sleeping, with luxurious amenities provided by Urban Jungle.</p>
	

Premium Triple Room	Premium Triple Room Floor Plan
	<p>The Triple room at Yotel features a work desk, smart HDTV, flat bed, and Smart-Bed for two people, transforming from a couch to a comfortable bed at the touch of a button. The room also includes a bunk bed overhead for a third person. Clever design packs a lot into the neat room.</p>
	

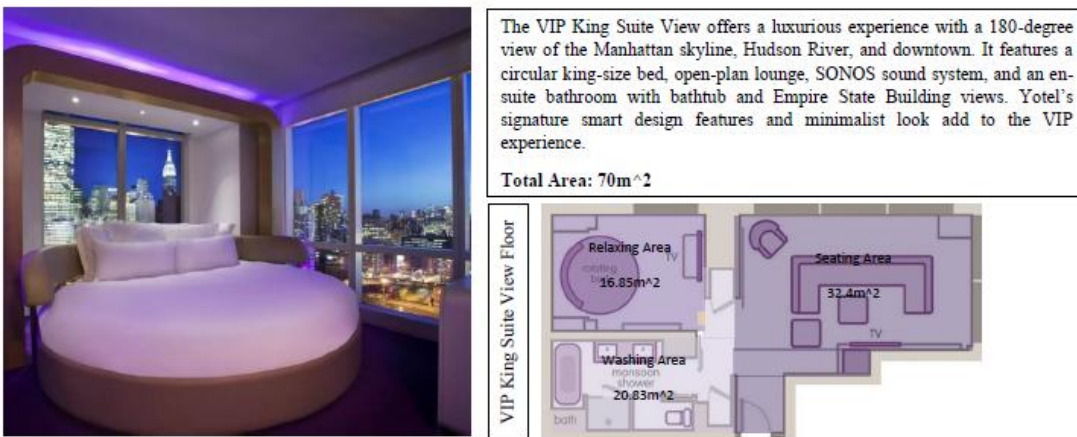
Corner Queen Room	Corner Queen Room Floor Plan
	<p>Corner Queen rooms offer the clever space-saving features of a Premium Queen with Manhattan skyline or the Hudson River views. A work desk, multiple USB ports, mood lighting, and Yotel's signature Smart-Bed are carefully crafted for relaxing, working, or sleeping.</p>
	

Solo Room	Solo Room Floor Plan
	<p>Solo rooms are compact yet stylish ideal for solo traveler. They can work comfortably in Yotel's minimalist rooms, equipped with multiple USB ports and mood lighting, perfect for relaxing, working, or sleeping.</p> <p>Total Area: 10.5m²</p>
	

First Class King Junior Suite	First Class King Junior Suite Floor Plan
	<p>First Class King Junior Suite offers all the YOTEL elements with more room to spread out. Rooms include all Yotel's smart design features, from the minimalist look and feel to the queen-size adjustable Smart-Bed, multiple USB ports and plug sockets.</p> <p>Total Area: 30m²</p>
	



VIP King Suite View



Penthouse King Suite



*Figure 4.14: The various available rooms
(source: Yotel hotel website, analysis by the authors)*

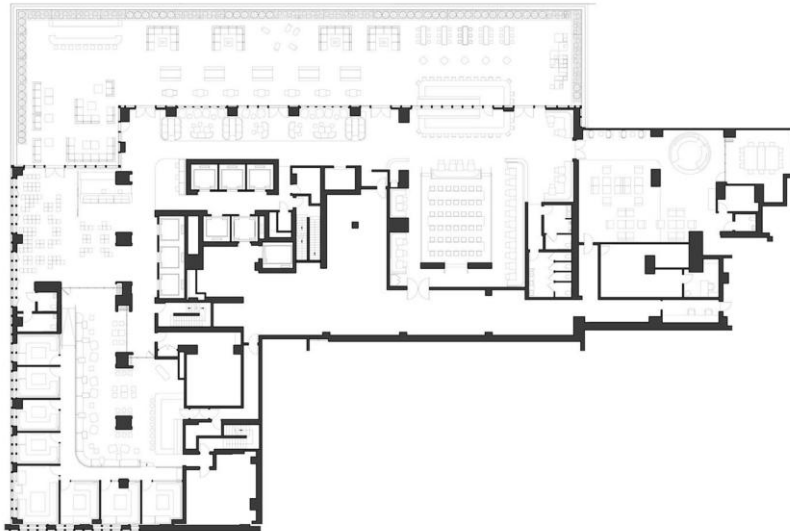


Figure 4.15: Floor plan of Yotel (out of scale)
(source: Yotel hotel website)

Interior programming:

	User	Name	Quantity	Total Space	Percentage
Services					
Private	Staff	Back of House	2	101.78m ²	0.95%
Public	Clients	WC	6	57.06m ²	0.50%
	Client-Staff	Stairs/ Elevator	9	247.65m ²	2.30%
Outdoor					
Public	Client-Staff	Terrace Bar	2	34.93m ²	0.30%
		Terrace Seating	6	336.43m ²	3.16%
Lounge					
Private	Client-Staff	Mission Control	1	90.64m ²	0.80%
		The Green	1	46.06m ²	0.42%
		The Club	3	124.54m ²	17%
		Dohyo	3	229.53m ²	2.10%
Private	Client	The Studio	3	122.49m ²	10%
		Private Cabin	8	88.04m ²	0.80%
Guest Rooms					
Private	Client	Premium Queen Cabin	216	3456m ²	32.0%

	VIP Suite	3	3066m2	28.0%
	First Class Cabin	19	570m2	5.40%
	Solo Cabin	216	2268m2	21.00%
Total Area (around): 10658.69 m2				

Table 4.2: Programming-case study 2 (source: created by the authors)

Exterior Analysis:

The Yotel New York facade has a stunning visual identity that radiates modernity and luxury. The hotel makes a dramatic statement as visitors approach the main entrance along 10th Avenue, thanks to striking architectural aspects. The custom-designed white concrete cladding system that covers three levels of the podium is one such element. This distinctive cladding, created as enormous low-relief tiles, evokes the famous lozenge-shaped YOTEL brand identity, evoking abstract depictions of the Yotel "cabin" (Frearson, 2011). This bold intervention into the building's façade not only functions as an aesthetic manifestation, but also communicates to passersby the brand's ideals of cleanliness, simplicity, and sophistication (figure 4.16).



Figure 4.16: Yotel Newyork Exterior
(source: Yotel hotel website)

Furthermore, the hotel's entrance is encompassed by a curving, edge-lit white sculpted canopy in the shape of a lozenge. This canopy, with its elegant lines and lit presence, adds to the hotel's uniqueness. Additionally, an oversized illuminated version of the YOTEL logo, meticulously designed by London-based consultancy GBH, brings attention to the facade, signaling Yotel's undeniable presence along 10th Avenue. These purposeful design gestures work in unison to communicate fundamental components of the YOTEL's identity, providing a visual story of modernity and sleek elegance to those who encounter the hotel's exterior (figure 4.17).



Figure 4.17: Exterior materials used.
 (source: Yotel hotel website, analysis by the authors)

Interior Analysis:

In addition to studying the interior layout, programming, and the circulation, it is essential to highlight the used interior design elements by investigating each item such as flooring, ceiling, walls, lighting, color and furniture ...

Flooring:

Yotel New York's flooring exemplifies a combination of efficiency, style, and comfort, contributing to the hotel's contemporary setting. The flooring design is consistent with the brand's dedication to modernism and efficiency in a variety of settings, including cabins, public spaces, and entertainment zones.

The flooring in the cabins blends functionality with a stylish design. These rooms are graced by a freely flowing timber floor and a purple shagpile rug, which provide durability while maintaining a cozy atmosphere. The flooring materials were chosen carefully to create a welcoming environment that fits the rooms' sleek design, while in common areas, such as lounges, dining areas, and the gym, is both durable and visually beautiful. These areas use polished hardwood, which provides a smooth and easy-to-maintain surface for high foot traffic while also lending a touch of refinement to the spaces.

Furthermore, the flooring of Yotel New York's public areas, such as the reception and event spaces, as well as the cabin bathrooms, is made of high-quality polished concrete. These decisions not only improve the visual attractiveness of the hotel but also correspond with its contemporary design concept, which emphasizes clean lines and a modern aesthetic.



Figure 4.18: Flooring materials used (source: Yotel hotel website, analysis by the authors)

Ceiling:

The ceiling design of Yotel New York is a clever mix of architectural features, lighting, and materials that create diverse atmospheres across the hotel's various areas. A hanging timber canopy descends from the ceiling in the lobby, serving as a unique focal point and adding a sense of natural warmth and organic elegance to the contemporary design. The fourth-floor club lounge features an enthralling array of computer-controlled color-changing lightboxes that animate the room. Custom suspended acoustic ceiling 'clouds' by Armstrong are strategically positioned throughout the public rooms to complement this dynamic lighting concept. These creative ceiling features contribute to a welcoming and comfortable atmosphere. These ceiling 'clouds' cleverly generate a relaxing artificial sky throughout the day, enhancing the ambiance for guests (Figure 4.19).



Figure 4.19: Different ceiling types used (source: Yotel hotel website)

Furthermore, the use of bamboo and oak timber for ceiling canopies adds a touch of natural charm to the hotel's setting. These wooden elements add warmth and earthy textures to the design, harmonizing with the modern look while providing a sense of coziness and comfort.

Walls:

YOTEL New York walls serve as canvases for modern design and practicality across the hotel's various spaces. The walls of the cabins have clean textures, muted tones, and innovative storage solutions. The layout prioritizes space efficiency, with walls intentionally designed to enable versatile components such as folding desks, integrated storage compartments, and minimalist décor. These features add to a clean, streamlined design that makes the most of the available space in the rooms.

The public zones in Yotel have walls embellished with contemporary artwork and murals complementing the hotel's modern and dynamic ambiance. These walls serve as displays for creativity and innovation, further improving the guest experience by including visually stimulating components across the communal zone (Figure 4.20).

Meanwhile, the design story continues to dazzle with meticulous attention to detail in the lobby. The entire east wall is covered with custom ceramics intricately exhibiting the signature Yotel lozenge motif. These custom tiles gracefully replicate the massive tiles that adorn the hotel's facade, establishing a seamless visual link between the exterior

and interior spaces. This creative addition underlines the hotel's brand identity within the main gathering zone.

Overall, the walls combine modern design features with practicality, improving the hotel's aesthetic while also providing practical purposes within each space.



Figure 4.20: Different ceiling types used (source: Yotel hotel website)

Lighting:

Lighting in Yotel is essential in setting the atmosphere, emphasizing the hotel's modern look, and assuring functionality. The lighting in the cabin is intended to be both comfortable and convenient. The lights provide adjustable illumination, and the color-changing mood lighting seamlessly transitions between warm white and calm purple tones. This attention to detail represents YOTEL's dedication to improving the guest's experience. The lighting controls are straightforward, providing the convenience of use without the trouble of looking for switches—putting everything at the guest's fingertips for an enjoyable stay.

The overall experience in social places such as lounges, restaurants, and public zones are enriched by the lighting design. Pendant lights, track lighting, 'Castore' floor lamps, and innovative installations add to the warm feel of these spaces. Lighting elements are employed to provide visual interest and a feeling of depth.

The lobby is highlighted by a mix of natural light coming through broad windows and skillfully controlled artificial lighting. This combination produces an inviting ambiance, which is enhanced by architectural lighting features such as the bespoke ceramics on the east wall, which are illuminated to highlight their intricate design (Figure 4.21).

Furthermore, the exterior lighting of YOTEL New York is outstanding. The hotel's front comes alive at night with edge-lit accents that highlight architectural aspects and the YOTEL logo. These lighting features not only acts as a beacon indicating the presence of the hotel.



Figure 4.21: lighting types (source: Yotel hotel website)

Furniture Used:












<p>The Green Lounge</p>	<p>The Bar</p>
 <p>Pearson Lloyd wingback parcs leather sofa</p> 	 <p>Ronan and Erwan Bouroullec bar-stool version of the 'Steelwood' chair</p> 
<p>The Studiyo</p>	
 <p>Leif Jorgensen "Other One" Lounge Chair</p> <p>circular custom-made daybed</p> 	 <p>meeting table can split in two and becomes a pair of pool tables</p>
<p>Mission Control</p>	<p>The Club Lounge</p>
 <p>Quinze & Milan Infinity chairs</p> 	 <p>Hitch Mylius HM 85 Solo Chairs</p> 

Figure 4.22: Furniture used (source: Yotel hotel website, analysis by the authors)

Material and Color scheme:

Yotel's overall palette is clean and simple, in keeping with the brand's principles. From the pre-cast concrete of the façade to the interior wall tiling of the lobby and the sheer curtains separating the sleeping and bathroom spaces of the cabins, pure whites are employed across a range of surfaces. Warm greys keep the concrete flooring in the public areas and cabin bathrooms looking elegant. Meanwhile, trademark purple tones are employed predominantly in upholstery and are mirrored in accent lighting in both public and cabin areas.

The use of bamboo and oak timber for ceiling canopies, wainscot wall paneling, custom trays in the cabins, and the 'Technowall' entertainment systems adds even more warmth. The palette's neutral tones are offset with greens, yellows, and red accents all throughout the furniture. The carpets in the cabin and corridors have custom graphics. Banquettes and cushions in the lounges and Dohyo are upholstered in Maharam's hardwearing but elegant 'Peep' fabric, and the same material has been uncommonly extended to form upholstered wall paneling for many of the hotel's structural elements, as well as incorporating the bar counters and desks of white solid surface material, with signature purple upholstery and timber below.

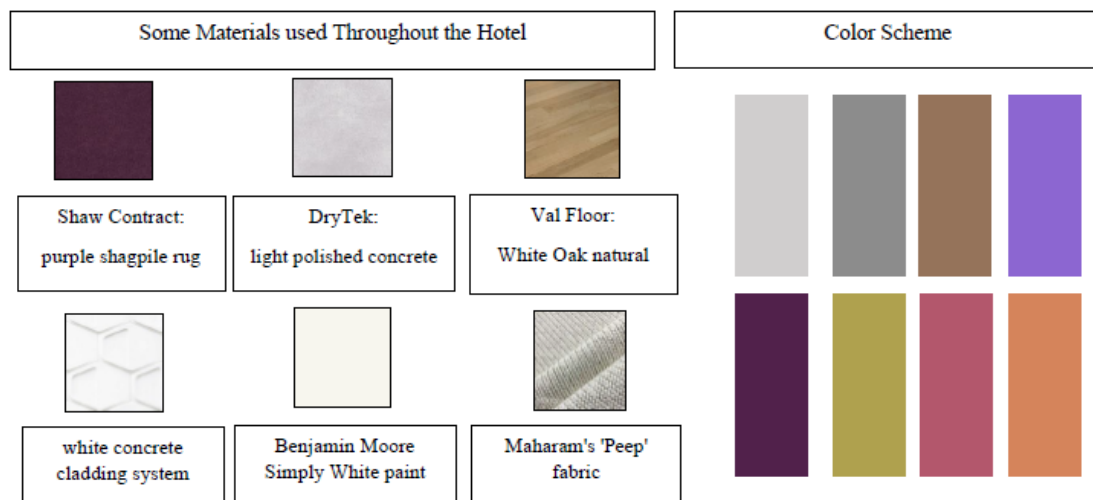


Figure 4.23: Materials and color scheme (source: created by the authors)

Summary and conclusion:

People are different and there is a globally increasing of introverts' population ... Those introverts are frequently subjected to prejudices and stereotypes, leaving them with the impression that they are an unfavored personality type. Considering the results of the COVID-19 pandemic, there is a need to design introvert-friendly spaces that use contactless technology.

Indeed, there is a recognizable influence of COVID-19 on introverts and the hospitality sector, which leads to the desire to establish mixed-use hotels worldwide and in Saudi Arabia.

Through designing the interiors of these hotels, there is a real to use "AI" and high technology to attract the majority of people, who are tech-savvy millennials, and to provide a setting catered to introverts' tastes, leading to a more inclusive and harmonious society.

As for the result of the two selected case studies, there are many items which can be summarized in the following points ...

CityHub Hotel

Indeed, there are variable advantages and disadvantages as the following:

Advantages	Disadvantages
Innovative Accommodation: For guests seeking contemporary, compact accommodation, unique hub-style rooms offer a tech-savvy and efficient stay.	Compact Space: While efficient, the small hub design may seem restricting to guests looking for more spacious accommodations.
Strategic Location: Located in the heart of the city, with easy access to main attractions, public transit, and active city life.	Limited facilities: Due to the hotel's design, it may offer fewer standard facilities than larger establishments.
Communal areas: celebrate both personalities, producing a lively environment in which extroverts and introverts may socialize or find personal space as needed.	Potential Noise: Due to the communal nature of the hotel, noise levels could affect those seeking a quieter environment.

Table 4.3: CityHub Hotel: Advantages and disadvantages (source: created by the authors)

Yotel Hotel

Advantages	Disadvantages
Space Efficiency: Compact cabins maximize space for modern travelers who prefer utility and comfort in a smaller footprint.	Limited Room Space: The compact design of the rooms may be restricting for visitors who prefer more spacious accommodations or longer stays, thus affecting comfort levels.
Technology Integration: High-tech amenities and smart room controls improve the visitor experience by providing ease and customization through features like changeable mood lighting and automated systems.	Potential for Limited Facilities: While economically planned, the tiny guestrooms may give an impression of fewer facilities or spaces to certain customers, thereby influencing their assessment of the hotel's value.

<p>Central Location & Accessibility: Located in the center of Manhattan, the hotel's accessibility to major attractions, transit hubs, and numerous eating options allows guests to explore the city with ease.</p>	<p>Noise Levels in an Urban Environment: Being in a busy neighborhood like Hell's Kitchen may result in greater noise levels from city streets, which could negatively impact the overall guest experience, especially for individuals who are sensitive to noise.</p>
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Table 4.4: Yotel Hotel: Advantages and disadvantages (source: created by the authors)

So, the creative interior design can positively enhance the visitor experience of this type of hotel through many aspects ... Innovative accommodation, accessibility, technology integration, creative variable facilities, a variety of super comfortable furniture, high-tech materials, mixing the natural and artificial adjusted lighting, good noise insulation, accent (pop) colors, as well as avoiding others direct communication are the critical elements of the successful Mixed-Use Hotels interiors.

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