

Therapeutic architecture and tourism: exploring potential cross-disciplinary synergies: a Horizon 2050 paper

Abstract

Purpose: The paper aims to strengthen the connection between therapeutic built environments and tourism research and practice. While there is evidence in the importance of the Built Environment (BE) of cities, workspaces and healthcare facilities to health, the BE of facilities for tourism in relation to health remains relatively unexplored. **Design/Methodology/Approach:** We conduct an exploratory search on architecture and tourism BE and narrowed it down to a scoping review on wellness tourism and architectural health impacts from 2010 to 2024. This would highlight lessons learned from the field of medical architecture, i.e., a cross-disciplinary field combining BE research, public health and healthcare services research, to explore potential synergies of cross-pollination with the field of hospitality and medical architecture. **Findings:** Principles and theories of medical architecture can be incorporated into the BE of wellness hospitality, tourism for ageing and pandemic preparedness. **Originality/value:** We set the basis of a novel cross-disciplinary collaboration between therapeutic architecture and hospitality for increasing the societal impact of the latter. This is particularly important post – covid and an ageing society.

Keywords: therapeutic architecture, health tourism and hospitality, Covid-19, wellbeing, Built Environment, hospitality planning

Paper type: Research paper

1. Introduction

Interdisciplinary collaborations between hospitality and medical architecture could increase the impact of hospitality research and practice. The new thinking could target grand challenges such as the demographic change and pandemic preparedness. When medical architecture got inspired by hospitality in the 90s, it shifted from clinical aesthetics to more patient-friendly, enhanced-experience paradigms. Hospitals sought references to hotel aesthetics and affordances. Even in publicly funded health systems, such as England's NHS, the functionalistic and restrained typology of healthcare buildings (Francis *et al.*, 1999) got influenced by theories that added domestic references to formerly institutionalised healthcare typologies (Peace, 1998) or client-

focused influences for hospitals aiming to look like hotels, such as the Planetree hospitals in the US. Those were at large influenced by the hospitality sector (Malkin, 2002; Frampton *et al.*, 2008; Swan *et al.*, 2003; Goldman and Romley, 2008). Inclusion of both “Homelike” or “Hotel-like” features were promoted to enhance healing through stress reduction as hospital environments are associated with negative psychosocial responses, called in-hospital stress (Ford *et al.*, 2023). Towards the end of the 20th century, en-suite single rooms replaced hospital bays, hotel-like carpet-type finishes were introduced in patient areas and art was used even inside clinical areas (CW+, 2023), especially in better resourced, clinical centres of excellence (EGM, 2023; NHS, 2021) In the dementia village in the Netherlands, resort-like typologies and affordances inspired a novel architectural hybrid (Chrysikou *et al.*, 2016b). The influence of hospitality to healthcare has been reported by hospitality scholars (Suess and Mody, 2017), including the growth of hospital hotels (Majeed and Kim, 2023), and clinicians for the development of patient hotels (Holte *et al.*, 2018). These scholars focused mainly on the experience, either from the hospitality or the healthcare management perspective and less on the actual space.

Regarding tourism and its relationship to architecture for health and wellbeing, the value of the environment has been highlighted in the context of wellness tourism (Sachin and Dash, 2022; Han *et al.*, 2020). Wellness tourism mostly focuses on the added value it offers to health, i.e., salutogenesis (Antonovsky, 1979) - rather than facilitating the cure of a disease, i.e., pathogenesis. Moreover, the meaning of the environment in the hospitality publications is broader than its description and analysis by architectural and BE scholars. An direction that we consider beneficial for the tourism industry to explore, especially in its wellness segment would be that of medical architecture.

This paper explores links between hospitality and architecture, and in particular how medical architecture, under the prism of human health and wellbeing could support hospitality. This is critical, especially in a post covid, ageing society and is fully aligned with United Nations Sustainable Growth Goals three (healthy living), eight (decent work and economic growth), and eleven (sustainable cities and communities). It argues that post-covid BE for hospitality could a) implement some of the principles of medical architecture, especially in places and services that cater for older people or medical patients and b) become part of a supply chain that can be multi-purposed for public health benefits during public health crises.

2. Past developments 1946-2020

Evolution of Medical architecture concepts over the years.

Theories of BE in relation to health focus on evidence-based or psychosocial interventions, either for supporting health-promotion (salutogenesis) or disease-fighting mechanisms (pathogenesis). Since the 1980s, in the field of medical architecture, design has been suggested as an established means to improve patient and vulnerable people's wellbeing (Verderber, 1986; Ulrich *et al.*, 1991; Shepley *et al.*, 2009; Rubin *et al.*, 1998). Next, we will introduce some theoretical frameworks that link architecture –space and place—to theories linked to medical sociology, public health and sociological studies in general. This theoretical underpinning will enable us to communicate an overview of the discipline of space and place, i.e., architecture, and in particular therapeutic architecture, before its exploring potential benefits for hospitality.

First, the Generative Space paradigm, named as such by Ruga in the 90s (Ruga, 2008; 2010), suggested a dynamic potential of social and physical space to fulfil functional requirements that led to continuous health improvement. Ruga was very influential in the US through as a founder of the Centre For Health Design and the UK through his teaching at the Medical Architecture Research Unit in the nineties. Then, in the 2000s, medical architecture shifted towards Evidence Based Medicine and its translation to BE, i.e., Evidence Based Design. Concurrently, the salutogenic theory (Antonovsky, 1979) influenced medical architecture via Dilani (2008). Although Antonovsky did not engage directly with space, space was still considered part of the background (Hudson, 2013) that underpins the reinforcement of one's sense of cohesion (European Communities, 2010), which was the aim of his theory. In design terms, as translated by Dilani, salutogenesis referred to the synergies created by environmental interventions that are capable of increasing well-being by promoting a feeling of cohesion. The interdisciplinary and intercultural application of cohesion enhancement (Eriksson and Lindström, 2005) created a shared platform between health and architecture (Behbehani, 2013; Assali, 2016). In the BE disciplines though, the term of salutogenesis has often been used in a rather inclusive and less systematic way than the original theory. Finally, epidemiological theories linking health and the environment (Marmot 2015) and the socio-spatial theory of Space Syntax linking environment to society (Hillier and Hanson, 1998) were indirectly linked under the eco-psychosocial paradigm of therapeutic architecture (Chrysikou, 2016 a; b), which also bears references to the bio-psychosocial paradigm of Evidence Based Medicine (Engel, 1977). The eco and biopsychosocial perspectives draw an

ecosystem that recognises the physiological and perceptual changes associated with ill health and vulnerability (epidemiological) and spatial (through the psychosocial) theoretical constructs, deriving from the broader perception of vulnerability and ill health within society. These theoretical constructs, recognising the physiological and perception differences that occur because of ill health or disability, plus the burden that might occur from systemic parameters, such as the effects of stigma and social inequities, are core to a holistic approach of BEs for health. These concepts could be extended to the hospitality industry, especially its wellness segment. Such introduction would further support the wellness sector potential for equity, especially in relation to the spatial needs of vulnerable populations, including people who are not well physically or mentally.

There is a strong link between health and our built environment. However, such links have been mostly researched regarding cities (Vlahov *et al.*, 2004), homes (Hernandez-Garcia *et al.*, 2021, 2022; Robert Wood Johnson Foundation, 2011), workspaces (Richardson *et al.*, 2017; Durosaiye *et al.*, 2020) or learning environments (Baker and Bernstein, 2012). Very limited consideration has been given to the BE for tourism transportation, including cruise (Chrysikou *et al.*, 2021 a, b) or hotels and its impact to health. To address this gap, the methodology involves a scoping review on wellness tourism and architectural health impacts from 2010 to 2024, as most literature on the subject concentrated after 2013. The few publications that came up before 2010 at a preliminary search, we read them individually before the start of the review. The literature search took place from June to August 2024. Searches were undertaken in English and there were no restrictions in the origin and geographical location. It involved Google Scholar, PubMed, ResearchGate, Emerald Insight, SAGE Journals, Springer link, Science Direct, under the following keywords: wellness tourism, medical tourism and architectural health impacts, healthcare architecture, architecture for health, healthcare built environment, built environment impact on hotel staff, green spaces effect on hotel guests' wellbeing. There were some additional hand searches on robots and hospitality, Covid-19 and hotels. Studies had to focus specifically on architecture or design. Studies referring to natural environment without connection to BE were excluded. All study designs and methodologies were considered. The first screening started from the most relevant searches according to keywords, involved around 400 titles and it stopped when the searches produced no new outcomes for more than 20 titles and abstracts and 65 papers were selected for full screening. Out of those, 30 were relevant and were classified thematically.

The first theme focused on wellness tourism with emphasis on architecture. It concentrated to nature connectedness, either via rural settings and destinations, or natural materials and biophilic architecture. Wellness tourism was described as a significantly growing, niche hospitality sector looking to treat patients as well as tourists by promoting holistic wellbeing and health (Forbes, 2023), potentially by blending into the natural environment (El Shiaty *et al.*, 2023) and/or enable activities that promote holistic lifestyles. Its value is expected to expand even more from 2023 to 2030, especially, as a response Covid-19 related anxiety and stress Covid-19 (da Costa Guerra *et al.*, 2022). Research argues that rural tourism can promote health and wellbeing through architecture and a wellness-focused design (Synarya *et al.*, 2024). There is a growing trend in connecting sustainability and wellness, with a bio-inspired design and architecture, i.e., biophilic architecture, for example through the use of natural materials (Sachin and Dash, 2022; Smith, 2021). Further on biophilia, was the importance of green attributes to peoples' wellbeing. Nature based solutions including green spaces and green surfaces, increases hotel guests' mental health perception (Han *et al.*, 2019). Han *et al.* (2021) highlighted how green atmospherics (i.e. green ambient conditions, green items, and green spaces/areas) were crucial direct drivers of mental occupants' well-being, for both guests and employees, in helping them relieve their mental stress/anxiety and feel healthy and happy while staying/working at the hotel. The connection of nature in space through the application of natural materials, can stimulate the senses, giving the impression of being in real nature, which based on Fitri *et al.* (2020) can influence hotel users by relieving stress and improving their mood quality.

Heung and Kucukusta (2013) examined the potential for wellness tourism development, surveying professionals working in tourism, health and education in China. Findings shown the importance of a peaceful and relaxing environment for the development of wellness tourism. Modern and beautiful accommodation, excellent recreation facilities were also among the attributes considered favourable for the development of wellness tourism. To an architect though, terms such as *modern* would refer to a historical architectural movement and *beautiful* different semiotics, highlighting the disconnect between the two disciplines.

A second theme that was identified in relation to architecture and wellbeing was referring to the wellbeing of staff. Staff tends to have long term exposure to specific BEs and therefore potentially higher impact compared to most visitors. There have been some recent studies on hospitality

industry staff working indoors during the Covid-19 pandemic and their perception of a positive relationship between their physical and mental health and building certifications at their workplace (Bangwal *et al.*, 2022). Jawabreh *et al.* (2020) indicated through their research a positive correlation between work environment and hotel staff service performance. Research by Dardeer *et al.*, (2017) highlighted the importance hotel staff pay on their physical working environment, indicating factors such as workspace design, layout and light. Additionally, Were and Maranga (2022) study results clearly established that a quality designed hotel workplace (including attributes such as workspace layout, individual operational space) could make a big difference in hotel staff satisfaction and improved employee performance.

The next topic that came up, was about the BE of medical tourism. The increased need for therapeutic elements within hotels used by medical tourist was raised by Faraj *et al.* (2024) and suggested lighting, ventilation, furniture selection, and room layouts as highly impactful patients' health and recovery. The importance of design factors and their influence on hotels recommended for medical tourism and patients was highlighted by Abinama and Jafari (2015). Banerjee (2021) looked into the impact of a well-designed hospital in promoting medical tourism. For older hospitality customers, tangible services such as the physical facilities (e.g., therapeutic premises and wheelchair facilities throughout all accessible touchpoints) were described as playing an important role, along with the personal encounter experiences, on their travel satisfaction (Prentice *et al.*, 2022). Suess *et al.* (2020) indicated the importance of the perception of home-like environments for medical tourists. According to Han (2013) and their research on the healthcare hotel, findings indicated that staying in a comfortable hotel room of better quality than other places –still a too vague term to be directly translated to architectural features-- or enjoying a wider range of room sizes and types in a healthcare hotel, are among the identified attributes which are likely to induce tourists' favorable perceptions and cognitions. The results of a factor analysis of spa service quality by Lo *et al.* (2015), included in the quality attributes playing role to users, the need of a comfortable environment (i.e. good lighting, ventilation, temperature), as well as the provision of proper changing facilities. Faroldi *et al.* (2019) proposed a potential tool to support planners in analysing and improving the existing built environment of thermal facilities and set the basis for long term planning of thermal facilities in Italy. The tool though derived from architectural and medical architecture thought leadership, proving the current challenges, opportunities and need for cross-disciplinary collaborations. Finally, there is very limited research on BE qualities in relation

to environmental comfort (Geng-qing Chi *et al.*, 2020). Spatial and placemaking qualities remain largely unexplored, especially when it comes to physiological and perceptual aspects.

3. Brief COVID 2020-2023 and lessons

Covid-19, like other public health crises, should have been understood and addressed in a systemic way. This should involve not only healthcare and public health provision but also its socio-economic and psychological effects. It had short term and longer-term effects, and all of these were and are important. Four years later, there is little clarity regarding its full socio-economic burden and very little clarity on future pandemics, or at least very little information and projections implied by prestigious public health organisations about future pandemics. During the Covid-19 pandemic, all sectors of tourism suffered, had to adapt, evolve and be prepared (Alotaibi and Kahn, 2022; Sun *et al.*, 2022). The very strong link between health and the BE was identified in practice, leading to adaptations of spaces and places, as one of the steps to support hospitality business. Yet, those measures were temporary, lasting until the main risk was reduced.

4. Future developments

Exploring future developments, as derived from topics highlighted by the literature review and most importantly gaps spotted in the literature, there is a potential for synergies between hospitality and medical architecture. First, we could implement eco-psychosocially supportive solutions in spaces used by people of all ages, and especially when they face physical or mental conditions. Space and place can be beneficial by balancing stress levels, increasing access to activities and encouraging healthy habits. Godwin (2015) calls the environment that allows such choices as an additive environment. Even in the case of dementia, an umbrella of conditions that clinical pharmacological outcomes can offer very little, environment can enhance dementia. Dementia is the state under which some abilities that have been compromised by dementia may reappear (Sixsmith *et al.*, 1993). Medical architecture suggestions on the use of day light (Muhamad *et al.*, 2022), window design (Verderber, 1986; Ulrich *et al.*, 1991; Mahmood *et al.*, 2021) and the perception of art (Corriero *et al.*, 2024) could be applied and measured to:

- hospitality buildings, especially in health, wellness or medical tourism destinations
- airports and transportation hubs, as travellers demonstrate orientation issues that cannot be addressed by digital technologies alone (Bosch and Gharaveis, 2017)

- age friendly hospitality facilities
- facilities for active and healthy ageing including sporting complexes and spas

With further development of medical tourism, there is opportunity for clinical services to merge with hospitality. The hospitality industry initially provided hospitality services in areas adjacent to hospitals serving medical tourists (Reisman, 2010) but also families and patients not requiring highly clinical environments. Then, expertise by the tourism industry helped improve healthcare services (Suess and Moby, 2017) or healthcare experts trained specialised staff for tourism facilities for people with special needs or health problems (Hartwell *et al.*, 2016). Some scholars have highlighted the potential for hospitality for health by improving BE infrastructure and developing hybrid facilities (Page *et al.*, 2013; Innes *et al.*, 2016; Visit England, 2016; Blanas *et al.*, 2017). More destinations introduce hybrids between hospitals and hotels as a combined product, such as the Thermal Margaret Island in Budapest. There, hotel accommodation is linked to spa, wellness and medical diagnostics and treatments facility (Ensana, 2023). Yet, its medical architecture placemaking could be described as dated and the spatial configuration presents institutional elements such as artificially-lit, double loaded corridors with wayfinding and flow issues. Healthcare architecture innovation has moved a long way since the purely functional and uninspiring hospitals of the modern movement and post-war typologies. Maggie's Centres (n.d.) played a pivotal role to this shift. More than a few healthcare buildings in the last thirty years, become architectural landmarks on their own right, utilising innovative forms, aesthetics, materiality, use of public space, light and nature to create exceptional places (Chrysikou *et al.*, 2019; Rethinking the future, 2024). Health-hospitality hybrids need to seriously consider investing in high quality, innovative design to align with this development. Tourism research needs to collaborate with architectural scholars to further understand the potential or barriers related to BE. Finally for society, psychosocially supportive environments increase equity as enable the most vulnerable to travel and overcome environmental barriers and increase their potential to be in wellbeing.

About fifteen years ago (Eichhorn *et al.*, 2008; Grimm *et al.*, 2009) demographic data and analysis for tourism trends predicted a growth in the number of older tourists and tourists with health conditions that would surpass the growth of the tourism industry. This made sense, as travelling can enhance older people's sense of well-being, sociality and self-esteem (Morgan *et al.*, 2015).

Tourism could support active and healthy lifestyles to prolong independent living. To facilitate this trend hotels and the supporting infrastructure required modernisation to serve tourists with accessibility requirements (Darcy and Pegg, 2011; Buhalis and Michopoulou, 2013). As demographics shift, we have to reconsider the adequacy of universal design, in settings with high prevalence of people with multi-morbidities and older people (Chrysikou, 2018). Therefore, wellness hospitality should re-consider the adequacy of accessibility devices. In 2024, the demographic shift has augmented leading to unrepresented challenges, as we don't have past experience of a so rapidly ageing society. At the European Union, the period 2020-2022 the percentage of people over 65 years increased from 16 to 21%, at the group aged 80 and over the highest increase was in Greece with an increase from 3.7 to 7.2%, while in parallel the share of young people (0-19 years old) decreased in all Member States (Eurostat, 2023). Based on EUROPOP2019 projections, by 2050 EU youth population will reduce to 14.9%. According to WHO (2022) the pace of population ageing is faster than in the past, by 2030 1 in 6 people in the world will be over 60 and by 2050 the world's population aged over 60 will double. As the population is ageing, the lifespan is increasing but the increase in healthy years has been very limited. For that reason, the European Union had set a target in 2010 of achieving two additional healthy years by 2020 (Lagiewka, 2012). They created a framework, the European Innovation Partnership on Active and Healthy Ageing, known as EIPonAHA (EIPonAHA, 2016), promoting interdisciplinary partnerships following the Japanese gerontological paradigm (Okada *et al.*, 2013). The EIPonAHA comprised different actions groups including for BE, for tourism and for healthcare. Yet, there was very limited interaction between the groups, even though action group leads repeatedly highlighted the need for **cross-sectoral synergies** (EIPonAHA, 2015; Chrysikou *et al.*, 2016). Currently the initiative moved to implementation stage, yet still relatively segregated and in silos. We need to establish collaboration to remove these barriers both in terms of research and industry and increase the collaboration not only between disciplines but between sectors too. Given the demographic challenges, removing BE barriers for older people to create seamless experiences and increase participation, is key for sustainability and societal equity.

Within the active ageing strategies, silver economy has been looking for autonomy enhancing products and services for increasing personal and social capabilities (Navarro-Espigares and Hernandez Torres, 2010) and for successful businesses, targeting older consumers together with younger ones who are either carers or face difficulties themselves (Kohlbacher and Herstatt, 2016).

There is a reason behind that and links to demographics. Healthcare services already face significant challenges concerning availability of staff and carers and is experimenting with replacing care staff with AI and robots. Newly constructed hospitals take into account the circulation and facilitation of robots at the design stage. For existing facilities, the challenges are considerable. Currently we are researching the co-habitation of robots and older adults in existing homes and assisted living facilities and the challenges cast doubt in the readiness of adoption of such technologies (Chrysikou *et al.*, 2024). Hospitality, which is an industry heavily depending on human resources, could be also affected by demographic challenges. According to Ivavov *et al.* (2020) hotel managers recognise the potential in robots for facilitating operation processes but they also highlight the need to redesign hospitality BEs for robot mobility and in particular internal and external accessibility of premises, shape and surface materials, charge-related issues, rental and repair facilities for robots etc. (Ivanov and Webster 2017). So far, robots are tested predominantly in labs and we are not aware of many studies looking at real BE environments. We suggest that hospitality and healthcare need to join forces to support real life studies and learn from each-other in that respect. Learnings and collaborations should involve tech companies, BE providers and the tourism industry for seamless introduction of robots into real spaces. One of the issues with human computer interaction and acceptance of robots is that they appear exciting but soon are discarded. One of the reasons is this gap between labs and real-life testing (Chrysikou *et al.*, 2024).

Finally, we should be utilising the paradigm of medical architecture to safeguard the built environment of hospitality for future pandemic preparedness. A key principles of hospital design is infection control. This promotion of hygiene and safety is key for initial planning, separating clean and dirty movements, maintaining clean air supply, clean and antimicrobial surfaces and designs that promote hygiene. For hospitality:

- a) Hygiene: Hospitality industry must cultivate a public health ethos of enhanced hygiene and green clean practices in a systemic way (Sembajwe *et al.*, 2020) for staff and customers. Intimate areas and the area of and around the beds as the surfaces that are the most contaminated with viral load (Chrysikou *et al.*, 2022). Hospital beds are highly complex yet they are cleanable. Hotel beds and the surrounding area present low complexity but are challenging to clean around and under. Design resistant to bacteria and viruses or pre-approved for use against emerging viral pathogens should be preferred (Rakowska *et al.*,

2021). Indoor air quality, secure ventilation and natural ventilation should be prioritised. Specialised design solutions bring fresh air inside secure psychiatric buildings, yet hotel rooms remain hermetically closed. Maybe we need to reconsider such practices for more sustainable and user-friendly solutions.

- b) Prevention: Hotels should be able to inspire trust to customers for future pandemic preparedness and protection. After SARS hospitality practitioners realised the importance of customers' safety and security (van Walbeek, 2003). Changes in layout and spatial characteristics, selection of anti-microbial finishes and materials, screening centres for large resorts, are some of the measures for prevention and early intervention. Appropriate safeguards for the physical and mental wellbeing of staff, and ensuring the safety of their working environment should be considered (McKenzie, 2020). At the Diamond Princess Cruise ship the crew infection on board after the quarantine was higher (Azimi *et al.*, 2021). The official report for the Japanese Ministry of Foreign Affairs highlighted that neglecting crew prophylaxis multiplied the spread (Chrysikou *et al.*, 2021a; b).
- c) Flexibility: Facilities should be designed to be multi-purpose and being able to transform if needed and respond to public health crises. During Covid pandemic, non-healthcare buildings were transformed into healthcare environments and ICUs, such as the Nightingale Hospital at ExCeL Exhibition Centre in London (BBC, 2020). The Nightingale hospital lacked essential therapeutic and salutogenic factors. Contrary, hotels during the pandemic successfully provided stays for self-isolation, hotel rooms for healthcare workers or be transformed to hospitals and quarantine centres (CNN travel, 2020; Business Traveller, 2020; NL Times, 2020). Next time we need to act faster and invest in hotels rather than problematic infrastructure like the Nightingale hospitals. Hospitality researchers need to collaborate with medical architecture researchers and evaluate the different approaches before it is too late and we lose the experience of the past pandemic. Additionally, aspects such as ventilation and hygiene are key in an ageing society as it can have a direct affect to people with multi-morbidities and their health and wellbeing. Environmental health is also directly connected to human health and planetary health

5. Conclusions

This paper aimed to provide a canvas for a cross-disciplinary thinking between medical architecture, health promotion and socio-spatial context in the tourism industry. It presented aspects of perception, physiology and space in medical architecture and how those could support wellness tourism. We support that the BE constitutes a pillar of sustainable development in an ageing society, merging existing and shaping new tourism BE configurations to promote health promotion, wellness and wellbeing for vulnerable populations and people across the lifespan. It explored how those concepts could support the hospitality and especially hospitality for wellness. When healthcare architecture looked at the hotel industry for inspiration, it led to a new generation of therapeutic spaces. In an ageing society, post Covid-19, it is time for the hospitality industry to research and invest in spaces and places compatible to the physiology and perception of vulnerable people and people across the lifespan.

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