



What Got Us Here, Won't Get Us There

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DEFINING HUMAN EXPERIENCE IN VIRTUAL REPLICATED CULTURAL LANDSCAPES. A CASE OF KASHI VISHWANATH TEMPLE, VARANASI

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Abstract: This paper aims to explore the relationship between physicality and the idea of virtuality with major concern of human experience in physical space by taking a case study of Kashi Vishwanath Temple, Varanasi. To examine the role of cognition when there is a virtual replication of existing cultural heritage. The following queries will be addressed in this paper:

- What are the factors contributing to designing for human experiences in cultural landscapes?
- What will the future of human experience in virtual cultural landscapes be like?
- How will design respond to the human experience in virtual landscapes keeping the cultural landscape in mind?
- What will be the components that need to be incorporated in the creation of virtual spaces of existing cultural landscapes.

Keywords: virtual space, cultural landscapes, inhabitation, experience

1. Introduction

A dweller feels comfortable in a space that provides a sense of social security and is surrounded by people who share the same values. The beliefs of a group often result in a shared built and unbuilt environment that is linked to intangible attributes. An individual's memories of a place are based on their personal experiences, including their sensory systems and their emotional connection to that place. This connection can be influenced by social, religious, political, or cultural beliefs. A person tries to feel more comfortable in their environment by forming a unique bond with it. The cultural landscape, including both natural and artificial surroundings, is significant to this relationship. The collective memory of a community is made up of many individual memories that are influenced by human experiences. These memories have been preserved through various documents and recordings. The paper discusses the factors that contribute to the designing process in a cultural landscape, including the human experiences associated with it. It also explores the virtual replication of cultural landscapes, using the Kashi Vishwanath Temple in Varanasi, Uttar Pradesh, as a case study. Virtual reality has become an essential platform for connecting communities globally, and technology plays a significant role in the interaction of the inhabitant with the cultural virtual environment. The paper concludes by discussing the

future of virtual replication of cultural landscapes.

2. FACTORS CONTRIBUTING TO DESIGNING FOR HUMAN EXPERIENCES IN CULTURAL LANDSCAPES

Designing for human experiences in cultural landscapes involves a complex set of considerations and factors. Here are some key factors that contribute to creating positive and meaningful experiences for visitors:

- **Cultural context:** Cultural context plays a crucial role in understanding the cultural background and history of the landscape is essential to creating a design that is sensitive and respectful to the cultural heritage of the place. The design should be tailored to the specific cultural context, taking into account the values, beliefs, and customs of the local community.
- **Participant Requirements:** The needs and expectations of the participants are another critical factor. The design should be informed by an understanding of the visitors' belief system and behaviour patterns, including their mobility in the landscape, interaction with the space, and engagement with the cultural heritage.
- **Accessibility:** Creating a universal accessible design that meets the needs of all visitors, including those with differently abled, is crucial in designing for human experiences in cultural landscapes.
- **Environmental factors:** The environmental factors, including the weather, topography, and vegetation of the cultural landscape. The experience of place should be sensitive to these factors and incorporate measures to include the landscape.
- **Technology:** Digital technologies such as virtual and augmented reality can create immersive experiences that enhance visitors' engagement with the cultural heritage. However, it is important to ensure that technology is used appropriately and does not detract from the authenticity and integrity of the cultural landscape.
- **Sustainability:** Designing for human experiences in cultural landscapes should also consider the long-term sustainability of the landscape. Sustainable practices such as using renewable materials and reducing waste should be incorporated into the process to minimise the environmental impact and ensure the long-term viability of the cultural landscape.
- **Community engagement:** It also promotes a sense of ownership and pride in the cultural heritage and helps to ensure the sustainability of the landscape. Cultural landscapes are dependent on intensive community engagement and therefore the mapping is unfeasible without the involvement of local communities.

In the Indian context, physical space is based on the concept of "inside-out," where individuals from various communities associate with nature and relate to each other with a shared value system. For conservation of such spaces, values would include aesthetic, architectural, historical, commemorable, artistic, functional, age-related, and commercial values, etc (Derman, 2003). Communities have strong connections to their surroundings as a result of their belief system, which is built upon the principles of these values. Tangible heritage that refers to physical objects and structures with a certain set of value systems is the premise for this paper which include buildings, monuments, artefacts, and artworks. Tangible heritage is often preserved in museums, galleries, or in the form of public spaces where it can be displayed and appreciated. Intangible heritage refers to cultural practices, beliefs, and traditions that are passed down from generation to generation. This includes

language, music, dance, oral histories, and traditional knowledge systems. Intangible heritage is often preserved through performance, storytelling, and other forms of cultural expression (Wang & Zheng, 2008). Natural heritage refers to the physical environment, including natural landscapes, ecosystems, and biodiversity. Natural heritage sites are often protected and preserved for their ecological or scenic value (Abad Espinoza, 2019). Examples of natural heritage include national parks, wildlife reserves, and UNESCO World Heritage sites.

Together, tangible, intangible, and natural heritage provide a comprehensive picture of a society's cultural and environmental legacy. The preservation and protection of these forms of heritage are critical for maintaining cultural diversity, promoting sustainable development, and ensuring that future generations have access to the beauty and richness of our collective past (Oers & Bandarin, 2011).

The inherent value of intangible heritage is preserved in a spatial temporal ecosystem. It is an essential component of human experience in cultural landscapes as it provides a sense of identity and belonging to communities (Hussein, Stephens, & Tiwari, 2020). It helps to preserve and transmit cultural knowledge and traditions, allowing communities to maintain a connection with their past while adapting to changing circumstances, hence needs to be preserved digitally well (Truyen & Waelde, 2016). It also plays a critical role in promoting cultural diversity and social cohesion, as it provides a means for different communities to share their unique cultural expressions and experiences. It also provides opportunities for economic development through cultural tourism, as visitors are drawn to the unique cultural experiences offered by different communities (Osman & Farahat, 2021).

3. FUTURE OF HUMAN EXPERIENCE IN VIRTUAL CULTURAL LANDSCAPES

The rapid advancement of immersive reality technology is evident through the introduction of Apple Inc.'s groundbreaking 'spatial computers' known as Apple Vision Pro. headset that uses innovative capabilities of AR/VR, showcasing immense potential for transforming the future of cultural heritage site experiences. By wearing the headset, users gain access to virtual replicas of cultural heritage sites, allowing them to traverse ancient ruins, explore historic landmarks, engage with artefacts, and participate in various activities within a digital environment that emulates reality with striking realism (Bekele & Champion, 2019). This technology holds great promise in terms of preserving and providing wider accessibility to cultural heritage, as it digitally replicates these sites without risking any damage to the original structures (Zhong, Wang, & Zhang, 2021). Moreover, it facilitates interactive experiences, enabling users to delve into the history, art, and architecture of cultural landscapes in a more engaging and informative manner. Detailed information, audio guides, and even expert-guided virtual tours are easily accessible, enriching users' understanding and appreciation of cultural heritage. Collectively, these immersive realities—AR, VR, and mixed realities—offer unprecedented opportunities to revolutionize the way we experience and engage with cultural heritage (Haydar, Roussel, Maïdi, Otmane, & Mallem, 2011).

3.1 Technology

The preservation of cultural landscapes is aided by its documentation and archiving to allow continuity between generations and paradigms (Jeffrey, Jones, Maxwell, Hale, & Jones, 2020). This is primarily done in the form of texts and graphic information stored as books and treatises. With the advent of technology as a critical component of historical documentations, an architectural digital archive as a collection of digital records of historical buildings and structures, often created using various digital techniques such as photogrammetry and laser scanning, is now prevalent (Armstrong, 2006). These archives are invaluable resources for architects, historians, and cultural heritage professionals, as they provide accurate and detailed information about the design, construction, and evolution of architectural heritage. Digital archiving has opened another basket of issues about veracity and authorship and to some extent questions the concept of archiving as one may experience environments in context - what is memorable and archivable when the metaverse has the ability to transport us across space and time effortlessly! It has opened a discussion on the issues which includes mapping of cultural identities, landscapes, rituals, traditions to build cultural and collective memories. This may allow an intensive analysis of the archival ecosystem and its impact on signifying the influence of memorable artefacts - tangible and intangible - on historiography and its manifestation on the construction of identities.

4. PROCESSES IN THE EXPERIENCE OF VIRTUAL SPACE

4.1 Technology

It has long been discovered that using a virtual environment impairs a user's sense of scale. The vast majority of investigations that have examined this effect have found that people significantly underestimate distance (and hence scale) in a virtual environment as compared to the actual world, despite the fact that there are few commonalities among them (Hartman, Delahaye, Decroix, Herbelin, & Boulic, 2020).

4.2 Sensory

How do human beings perceive things? As architecture creates a psychological response that affects physical well-being and since humans seek harmony and beauty through their sensory systems, space is experienced with the aid of both emotional and aesthetic occupancy (Spence, 2020). The lack or excess of stimulation results into sensory deprivation which may be harmful for humans as the brain needs constant variation of stimulation and lack of natural references together with sensory deprivation may lead to psychological problems (Maria Joao Durao, 2009).

4.3.1 Physical Cognition

The comfort and welfare in space as well as behaviour of the occupant are all impacted by differences from nature in terms of time periods, illumination, atmospheric conditions, temperature, vibrations, notion of distance, odour, texture, confinement, and orientation. The features that are unique to living in space create a challenge for the architect's creative imagination to experiment with new notions of design. These qualities provide the framework for the investigation of novel paradigms that take into account the geographical context and operational goals (Maria Joao Durao, 2009). Therefore, any spatial configuration is located in its ability to engage with the inhabitants effectively resulting in a holistic experience where the sensory clues are based on the five senses of human beings.

4.3.2 Mental cognition

Along with the five senses, the crucial sixth sense is engaged when dealing with tangible and intangible cultural forms within environments that provide a space for constant innovation as well as spontaneous response—a place to reside—symbolic meanings should be taken into account in addition to functional implications (Rahaman, 2018).

4.3 MEMORY AND IDENTITY

The memory of the past has been significantly preserved by archives. Architectural archiving plays a key role in recording memorable landmarks of historical excursion when considered as a repository of the physical traces of evolutionary cognitive processes. This raises questions about which artefacts are memorable enough to preserve and why. The content is chosen with care and is interpreted by the archiving agency, which is typically a political institution whose implications emerge as cultural and social identity. This is regulated by the requirements of the archivist. This contributes to postcolonial studies and helps create a neocolonial ethos in the field of documenting iconic architectural assets.

4.4 HUMAN EXPERIENCES: What is worth remembering and what is not?

- **Narratives : social, political**

Collective memory which is usually built by a community to preserve the cultural identity will not be necessarily tactile. In cultural landscapes, narratives help to create a sense of identity and provide a link between the tangible and intangible elements of heritage. Through storytelling, people can build meaningful connections with their environment, creating a sense of place that is grounded in personal experience and cultural tradition.

- **In Physical Cultural Landscapes**

Human experience in physical cultural landscapes refers to the sensory and cognitive responses of individuals to the tangible aspects of cultural heritage, including buildings, monuments, landscapes, and other physical artefacts. It involves the way people interact with their surroundings and the emotions, memories, and meanings that are attached to these physical spaces.

- **In Virtual Cultural landscapes**

Virtual cultural landscapes can provide users with a sense of immersion and presence in a simulated environment, allowing them to explore and engage with cultural heritage sites and practices in new and innovative ways. Human experience in virtual cultural landscapes can also be shaped by factors such as personal values, cultural background, and individual preferences, and can be influenced by the design and functionality of the virtual environment.

5. VIRTUAL CULTURAL LANDSCAPES: ASSESSING THE EXISTING VIRTUAL MODEL OF THE KASHI VISHWANATH TEMPLE

Varanasi in Uttar Pradesh is one of the oldest cities of India, also called as “city of lights” and “cultural capital” of India. In the Puranic literature, Varanasi is referred to as the first city

following the great cosmic dissolution (mahapralaya), which later evolved into Lord Shiva's resort. The city is embedded with the hindu mythological theories and strong association of various communities specifically with Lord Shiva. A form of sacred geography in Varanasi is associated with the following numbers: three, four and five which forms a trident and represents various pilgrimage paths. The representations of pilgrimage routes with the numbers are respectively (Vishvanatha & Heritagisation, 2022):

- three as Avimukta, Nagara Pradakshina, and Panchakroshi;
- four as Antargriha (i.e., Vishveshvara Antargriha);
- five as Brihada Panchakroshi route.

The Kashi Vishwanath Temple is one of the most significant and revered temples in India. The temple is dedicated to Lord Shiva, one of the major deities in Hinduism, and is believed to be one of the twelve Jyotirlingas, which are considered to be the most sacred and powerful Shiva temples. The temple has a rich and ancient history, dating back to the 11th century. It has been destroyed and rebuilt several times over the centuries, with the current structure dating back to the 18th century. The temple complex is spread over an area of 5 acres and comprises several smaller shrines and temples dedicated to various deities. The temple is of immense spiritual and cultural significance to Hindus all over the world. It is believed that a visit to the temple and a dip in the nearby Ganges River can wash away one's sins and grant them salvation. The temple is also a place of pilgrimage for devotees seeking blessings and the fulfilment of their prayers and wishes. Apart from its religious significance, the Kashi Vishwanath Temple is also an architectural marvel, with intricate carvings and sculptures adorning the exterior and interior of the temple. The temple also houses a massive Shivling, a symbolic representation of Lord Shiva, which is believed to be one of the most powerful in the world.

Prior to the construction of the Kashi Vishwanath Corridor, the temple and its surroundings had a distinct character and charm. The temple complex was a maze of narrow lanes and alleyways, filled with small shops, vendors, and local residents. The streets were bustling with activity, with devotees making their way to the temple to offer prayers and perform rituals. The narrow lanes were lined with small shops and vendors selling religious items, sweets, and other offerings for the temple.

The Indian Digital heritage (IDH) programme of the Department of Science and Technology (DST), Government of India, showcased the need of adaptation and integration of technology into the nation's cultural history. A digital mini-spectacle to highlight the splendour of 5 Indian monuments that includes Kashi Vishwanath Temple augmented reality-based interactions with actual monument models were on display as the results of two flagship projects that were completed as part of the DST-mentored project Indian Heritage in Digital Space (IHDS). These two projects were carried out by multidisciplinary teams from the National Institute of Design Bengaluru, CSIR-CBRI Roorkee, the Karnataka State Council for Science and Technology, and the women-founded IDH start-up Vizara Technologies in New Delhi. As a result of the exhibition, most recent advancements in the field of cultural heritage were made possible by cutting-edge technologies like 3D printing, artificial intelligence, augmented, virtual, and mixed reality, holographic projections, and projection mapping, among others. Visitors selected the landmarks and were able to experience mixed reality owing to a unique installation called "ViRaasat" that combines laser scanning, 3D modelling and rendering, 3D printing, computer vision, and spatial augmented reality. (More examples from Vizara, analysis of other projects also not detailed)

5.1 Physicality: Description : Tangibles (human), issues

The rejuvenated Kashi Vishwanath Corridor in 2021 has brought about significant improvements to the physical infrastructure of the area, including widened roads, better pedestrian facilities, and improved cleanliness. However, the project has also raised several human experience issues that need to be addressed.

- **Displacement of Residents:** The Kashi Vishwanath Corridor project has led to the displacement of several residents and shopkeepers in the area. Many residents and shopkeepers had to vacate their homes and shops to make way for the project. The displacement has led to several social and economic issues, including loss of livelihoods and difficulties in finding alternative accommodation.
- **Loss of Cultural Heritage:** The Kashi Vishwanath Corridor project has also led to the demolition of several old buildings and structures, including heritage buildings. The demolition has led to concerns about the loss of cultural heritage and the need for a balance between development and conservation.
- **Increased Tourism Pressure:** The rejuvenated Kashi Vishwanath Corridor has led to an increase in tourist footfall in the area. The increased tourism pressure has led to issues such as overcrowding, traffic congestion, and waste management. The influx of tourists has also led to increased commercialization of the area, leading to concerns about the commodification of spiritual and cultural spaces.
- **Unequal Development:** The Kashi Vishwanath Corridor project has led to uneven development in the area, with some parts of the corridor receiving better infrastructure and facilities than others. This has led to concerns about the marginalisation of certain sections of society, particularly those from low-income groups.
- **Limited Community Involvement:** The Kashi Vishwanath Corridor project has been criticised for limited community involvement and consultation. The lack of community involvement has led to concerns about the project's impact on the community's social and cultural fabric and the need for community-led development.

5.2 Experiences: Description: Intangibles (human) belief system, cognitive experience, religion as culture, issues

Religious belief systems have existed in human societies for all of recorded human history. They describe a body of ideas, customs, and principles centred on the idea of the divine or a metaphysical. A framework for comprehending the meaning and purpose of life, a set of principles for moral and ethical conduct, and a compass for both individuals and communities are all provided by religion. Since ancient times, religion has played a significant role in shaping India's cultural environment where many different religions and religious practices exist and have done so for centuries, coexisting and influencing one another.

5.3 Virtual reality : Description, issues

While virtual replication of Kashi Vishwanath Temple offers several benefits such as accessibility, convenience, and enhanced learning, there are also tangible human issues associated with it. Some of these issues include:

- **Lack of Authenticity:** While the virtual environment may be visually stunning and engaging, it cannot fully replicate the cultural and spiritual significance of the physical temple. The sensory experience of visiting the temple in person,

such as the smell of incense and the sounds of religious chants, cannot be fully replicated in a virtual environment.

- **Reduced Social Interaction:** Visitors cannot interact with fellow pilgrims, receive blessings from priests, or participate in religious ceremonies. The lack of social interaction can lead to a reduction in the overall experience of visiting the temple and a disconnection from the community aspect of the temple.
- **Health and Safety Concerns:** The replication may offer a safe and convenient way to experience the temple, especially during times of pandemics and natural disasters. However, it also raises health concerns related to prolonged use of digital devices, such as eye strain and headaches. Additionally, virtual replicated environments may not provide a safe and secure experience, as users may be vulnerable to cyber attacks, scams, and identity theft.
- **Cultural Appropriation:** The replication also raises concerns related to cultural appropriation. The use of the temple's imagery and religious artefacts in virtual environments may not be culturally appropriate, especially if it is used for commercial purposes or without proper permission from the temple authorities.
- **Accessibility and Affordability:** While the replication may offer a more accessible and affordable way to experience the temple for those who cannot physically travel to the temple, it may also lead to further inequalities in access to cultural and religious experiences. The use of virtual replicated environments may reinforce existing inequalities related to access to technology, digital literacy, and socio-economic status.

Projects of Vizara technologies Pvt. Ltd	Sensory Experience	Scale Experience
 3D Model of Sun Temple Konark  3D Model of Taj Mahal, Agra	Users who pays an immersive visit to these three monuments will have an exclusive sensory experience. Since each of these three monuments has a distinguishable cultural background and value system, they are all distinct from one another. Since just audio and visuals are used among the sensory systems, users may now see and listen to virtual surroundings in absence of smell, touch and taste resulting in sensory deprivation.	The scale experience in virtual environments of these projects are exclusive of the real life distance measure hence users may feel physically disconnected in terms of mental cognition of the space.



3D Model of Kashi Vishwanath
Temple, Varanasi

6. DISCUSSION

To understand the connections between the main temple precinct of Kashi Vishwanath Temple and context surroundings. It is important to interpret the networks of built, intangible and natural heritage on the basis of community interaction and participation. Figure 1 shows the map highlighting the networks of roads, streets, chowks and ghats which provides a whole experience to pilgrims paying a visit to Kashi Vishwanath Temple.

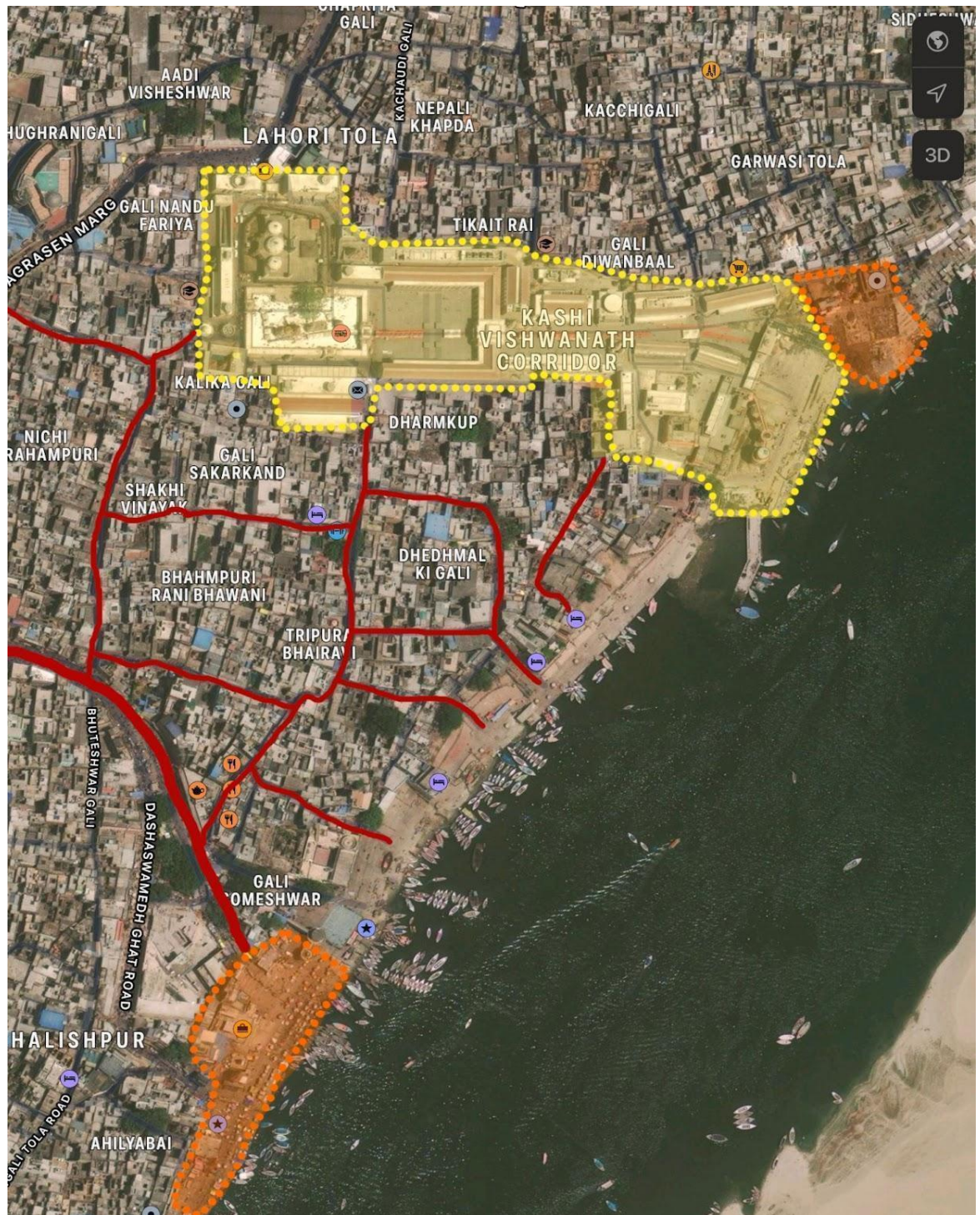


Figure 1: Map interpreting the network of roads, chowks, streets between Kashi Vishwanath temple, Dashashwamedh and Manikarnika Ghat.

Table 1: Comparison between Virtual and Physical Experience of Kashi Vishwanath Temple

Factors	Physical Experiences	Virtual Experiences	Discussion
CULTURAL CONTEXT	 Ganga Arti at Dashashwamedh Ghat. (Source : Author)	ABSENT The experience of pilgrims offering prayers to River Ganga as a part of ritual is missing from the immersive experience	AARTI AT SURROUNDING GHATS Along with visiting the temple, the visitors are encouraged to participate in the traditions, such as taking a dip in the nearby Ganges River, lighting candles or incense, and offering prayers to river Ganges.
ACCESSIBILITY	ABSENT There was no provision for the pictorial documentation inside the premises of the temple for the safety purposes.	 A visual representation of a virtual human as priest offering prayers at temple sanctum sanctorum. (Source : Vizara Technologies Pvt Ltd).	DARSHAN EXPERIENCE The temple's interior is dimly lit, with incense burning and priests chanting prayers, creating a sensory experience that transports visitors to another world.
COMMUNITY ENGAGEMENT	 Famous Banarasi Street Food around the temple precinct. (Source : Author)	ABSENT The virtual experience has a void of the hustling Banarasi streets which is full of various activities such as offering a cognitive experience, with vendors selling a variety of goods, from religious items to local handicrafts and street food.	The lack of social interaction can lead to a reduction in the overall experience of visiting the temple and a disconnection from the community aspect of the temple.

ACCESSIBILITY	 Existing Kashi Vishwanath Temple Corridor (Source : Author) A boatsman waterproofing the boats near Ganga Ghats (Source : Author)	 Virtual replication of existing Kashi Vishwanath Temple context surroundings, that was demolished for recent construction of corridor. (Source : Vizara Technologies Pvt Ltd).	RITUAL PATH The ritual path is surrounded with streets and bazaars. The streets are crowded and chaotic, with the sound of honking horns and the smell of spices filling the air. Visitors navigate the crowds and maze-like streets, creating a sense of adventure and excitement.
PARTICIPANT REQUIREMENTS	  (Source : Author)	ABSENT As the virtual model is only about the prayer offerings inside the temple, the sensory experience of the Bazaars are missing.	PRASAD The shops in the streets and bazaars adjacent to the temple along the ritual path provide pilgrims with the offerings to deity as a 'prasad'. The immersive experience lacks that sensory experience.
SUSTAINABILITY	A boatsman waterproofing the boats near Ganga Ghats (Source : Author)	ABSENT Though virtual experience provides a sustainable mode for visiting the space. However it lacks the approach for sustainability keeping the community as centre.	The idea of sustainability address the needs of various communities involved for the pilgrims. The virtual experience completely lacks it.

ENVIRONMENTAL FACTORS AND CULTURAL CONTEXT	 (Source : Author) River Ganges and Ghats around it represent the symbolism of the cultural identity of Banaras when visited physically creating a wholesome experience to the pilgrims taking part in ritual paths.	 (Source : Vizara Technologies Pvt Ltd).Virtual model presents Shikhara as a symbolic representation of the temple, eliminating a historical layer of other structures inside the temple precinct.	SYMBOLIC REPRESENTATION Visitors to the temple first experience the physical sensation of entering a sacred space. The temple complex is adorned with intricate carvings and sculptures that create a sense of awe and wonder. The main temple itself is a small but ornate structure, with a golden spire that glimmers in the sunlight.
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7. CONCLUSION

In a rapidly transforming metaverse, the sensorial experience of the participant in a virtual replicated cultural landscape is critical for an immersive, interactive and accessible experience to understand the meaning underlying the ritual.

To re-examine how we relate to the world, both physically and meta-physically as our ways of sensing are now critically challenged, particularly smelling, tasting, and touching as there is the hegemony of the visual and auditory, especially in complex community configurations. As Desmond Hui, Laura Cavanna, Mauro Arrighi, Rochelle Yang and Samson Wong from the Department of Art and Design, The Hang Seng University of Hong Kong have demonstrated in the competition entry , “the essential aspect of spatial design in the project is the possibility, interactivity, and accessibility of all-season sensory experiences. We hope to bring new sensual/spatial pleasure to visitors by imaginative use of interactive media, art, and space. Last but not least, we look forward to the full realisation of all dimensions of sensory experiences in the Metaverse.”

It is apparent that cognition and tactility are integral to the creative process and critical to spatial experience in the physical and by extension, in the Metaverse. Therefore, it is proposed that the virtual interpretation of cultural landscapes should be human centred by incorporating the sensory experiences that the participant undergoes during their physical participation.

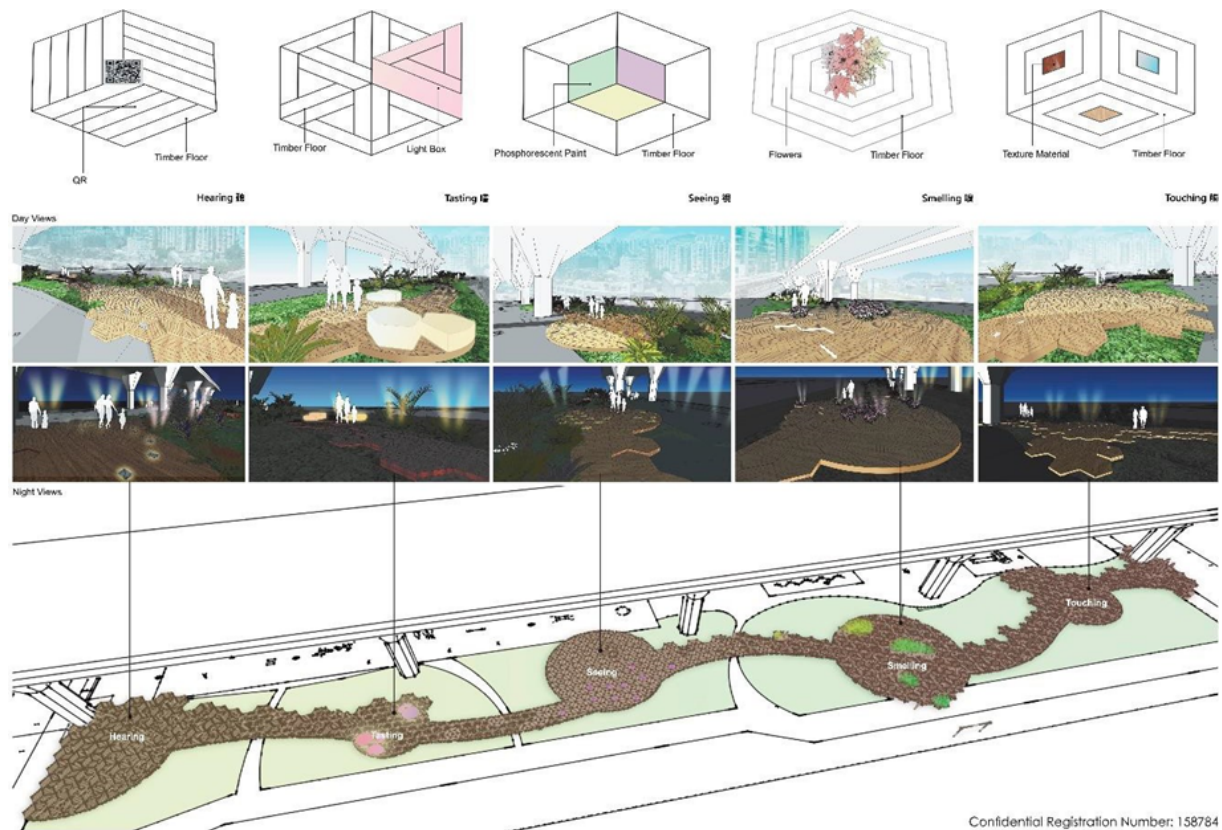


Figure 2 : the meta sense garden redefining sensory and spatial experience in the post covid era/
<https://humanitiesartsandsociety.org/magazine/the-meta-sense-garden-redefining-sensory-and-spatial-experience-in-the-post-covid-era/>

REFERENCES

- Stoltz, J., & Grahn, P. (2021). Perceived sensory dimensions: An evidence-based approach to greenspace aesthetics. *Urban Forestry and Urban Greening*, 59(January), 126989. <https://doi.org/10.1016/j.ufug.2021.126989>
- Sedigheh Babran. (2008). Media, Globalization of Culture, and Identity Crisis in Developing Countries. *Intercultural Communication Studies*, XVII(2), 212–221. Retrieved from <http://web.uri.edu/iaics/files/18-Sedigheh-Babran.pdf>
- Hussein, F., Stephens, J., & Tiwari, R. (2020). Towards Psychosocial Well-Being in Historic Urban Landscapes: The Contribution of Cultural Memory. *Urban Science*, 4(4), 59. <https://doi.org/10.3390/urbansci4040059>
- Vishvanatha, T. K., & Heritagisation, R. (2022). The Kashi Vishvanatha, Varanasi city, India : <https://doi.org/10.53136/97912599480762>
- Jesus, G., Yin, K., Chan, C., & Jesus, G. (n.d.). Heritage , the illusion of inheritance and the volatility of memory: A reflection on the Procession of the Passion of Our Lord.
- Sumrall, W., Sumrall, R., & Doss, D. A. (2018). A Review of Memory Theory. *International Journal of Humanities and Social Science*, 6(February), 23–30. Retrieved from https://www.researchgate.net/publication/323430288_A_Review_of_Memory_Theory
- Roediger, H. L., & Abel, M. (2015). Collective memory: A new arena of cognitive study. *Trends in Cognitive Sciences*, 19(7), 359–361. <https://doi.org/10.1016/j.tics.2015.04.003>

- Müller, K. (2017). Between Lived and Archived Memory: How Digital Archives Can Tell History. *Digithum*, 0(19), 11. <https://doi.org/10.7238/d.v0i19.3085>
- Jeffrey, S., Jones, S., Maxwell, M., Hale, A., & Jones, C. (2020). 3D visualisation, communities and the production of significance. *International Journal of Heritage Studies*, 26(9), 885–900. <https://doi.org/10.1080/13527258.2020.1731703>
- Maria Joao Durao. (2009). Embodied Space Sensorial Approach Spatial Experience. *Space, Propulsion & Energy Sciences International Forum*, 399–406.
- da Silva, R. F. L., Costa, A. D. L., & Thomann, G. (2019). Design tool based on sensory perception, usability and universal design. *Procedia CIRP*, 84, 618–623. <https://doi.org/10.1016/j.procir.2019.04.272>
- Spence, C. (2020). Senses of place: architectural design for the multisensory mind. *Cognitive Research: Principles and Implications*, 5(1). <https://doi.org/10.1186/s41235-020-00243-4>
- McKinnon, & Clarke. (2004). Businesses beware of rising energy costs. *Energy World*, (320), 12–13.
- Derman, B. (2003). Cultures of development and indigenous knowledge: The erosion of traditional boundaries. *Africa Today*, 50(2), 67–85. <https://doi.org/10.2979/aft.2003.50.2.66>
- Janse, H., & Janse, H. (n.d.). Intangible Cultural Heritage and the ‘goodness criteria’ UNESCO’s Convention for the Safeguarding of the Intangible Cultural Heritage and the ‘goodness criteria’.
- Şentop Dümen, A., Koyaz, M., & Çeliker-Cenger, Y. (2022). Unfolding the material: A proposal of a multi-sensory experience oriented material exhibition medium. *Materials and Design*, 219. <https://doi.org/10.1016/j.matdes.2022.110740>
- Armstrong, A. R. E. (2006). Architectural Archives/Archiving Architecture: The Digital ERA. *Art Documentation: Journal of the Art Libraries Society of North America*, 25(2), 12–17. <https://doi.org/10.1086/adx.25.2.27949434>
- Zherdeva*, Y. A., Cherkasova, M. V., & Sumburova, E. I. (2020). Social Aspects Of Digitalization: Archive And Memory In The Digital Era, 541–547. <https://doi.org/10.15405/epsbs.2020.03.78>

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previously worked with organizations such as Mehrangarh Museum Trust (MMT) in Jodhpur and Cultural Resource Conservation Initiative (CRCI) in New Delhi, contributing to the preservation and conservation of heritage structures in Jodhpur and Amritsar. Her research interests encompass areas such as heritage conservation, culture and digital communities, cultural landscapes and identity, technology for living heritage, urban forms and living heritage, and sacredscapes as living heritage.

Author 2

Dr. Neena Zutshi has shifted from practice to academia to explore imaginations. She pursued architecture at the School of Planning & Architecture, New Delhi at the undergraduate and doctoral levels and has a postgraduate qualification in Advanced Architectural Studies from UCL, London. Having lived and worked in diverse global locations, she has taught at Sushant School of Art and Architecture, Bilkent University, Ankara and Amity University among others and headed the school of architecture at Goenka University. She has presented her work at prestigious platforms globally and continues to engage with history and theory as well as design processes in architecture. Her research interest focuses on architectural treatises in the subcontinent and their contemporary relevance. Currently, she is the Dean (Academics) at the World University of Design engaging in design and art intersections with architecture.

Author 3

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