# MEDIATING SPACE: FRAMING STRATEGY AND SENSE OF PRESENCE ACROSS THE REAL-VIRTUAL ENVIRONMENTS

*Ferro Yudistira*
*Ratu Baina*

*Universitas Indonesia*
*Indonesia*

## Abstract

This study discusses the formation of mediated space as a space which combines actors and entities across the real and virtual environment. The study of mediated space in architectural discourse largely emphasises its experiential aspect, and only a few studies explore the formation of mediated space and the architectural elements which spans between the real and virtual environments. This mix of real and virtual environments is made possible through the involvement of the screen as the technological device that mediates the connection between them. This study investigates this process of mediation, focusing on the framing strategy of the virtual environment on the screen, in order to establish an engagement with the actor in the real environment. Understanding this formation process can further inform the potential of virtual space as the setting in our spatial practice, expanding the existence of architectural space.

*Keywords: mediated space, formation process, framing strategy, sense of presence*

Correspondence Address: Ferro Yudistira, Department of Architecture, Faculty of Engineering, Universitas Indonesia, Kampus UI, Depok 16424, Indonesia. Email: f.yudistira@ui.ac.id

**Introduction**

This study explores the formation process of mediated space, which is the space constructed by involving real and virtual environments through the mediation of technology. For the last two years—arguably due to the COVID pandemic—there has been rapid acceleration regarding technological adoption in almost every field. However, this pervasiveness of technology in our life has been predicted a long way before the pandemic (which undoubtedly accelerated this process). Mark (1999) argues technological advancement will make computation—not computers—to be embodied in things and makes it 'disappear' into the environment.

Technological advancement also affects the way we construct space in our daily life. The formation of space no longer merely involved real actors and entities in a real-physical environment but also imaginary actors and entities in a virtual environment. Therefore, architects nowadays will face a situation in which people keep moving between real and virtual environments throughout their day, both for work and leisure purposes (Gullstörm, 2010). Current studies about mediated space have captured such movements and arguably emphasise the experience aspect of mediated space. Some studies position mediated space as a virtual recreation of a physical-natural environment, focusing on human spatial experience (perception, orientation, distance) in virtual settings (Reno, 2005; Wartenberg & Wiborg, 2003). Other takes a more humanistic approach, which focuses on mediated space's socio and cultural experience (Reno, 2005).

This study emphasises the formation process of a mediated space, which then lead to a specific experience of its users. This study positions mediated space as a space generated through the performance or action involving actors and entities in a mix of real and virtual environments (Gullström, 2010). The involvement of the screen as the technological device that bridges the connection between real and virtual environments becomes crucial. The screen becomes a medium to 'frame' the virtual environment that provides different scenarios of action for the actors in the real environment. A question then arises regarding this idea of framing through the screen and its role in the formation of mediated space. This study aims to investigates a particular strategy in framing the virtual environment that provides a possibility of action or interaction for the actor, and how this strategy can make them acquire a specific dimension of presence in a hybrid environment. Understanding this formation process can reveal the potential of virtual space as the setting in our spatial practice and how it expands the possibilities of architectural space.

**Constructing the mediated space**

***Place, space, mediation: Location, operation, extension***

The relation between space and place can be seen through two perspectives; first, an understanding that emphasises the

presence of 'meaning' or 'value', second, an understanding that revolves around the idea of 'operation' or 'practice'. The first perspectives see space as something abstract and undifferentiated. Space then becomes a place when "we get to know it better and endow it with value" (Tuan, 1977, p. 6). The first perspective starts with abstract and unstable space, which can be stabilised and transformed into a place when we 'pause' and embed it with a particular value or meaning.

The second perspectives see the place as an indication of stability; a static state of 'being there', which makes an entity can distinctly define its location (de Certeau, 1984). Conversely, space is seen as something that "occurs as the effect produced by an operation," in which "in relation to place, space is like the word when it is spoken" (de Certeau, 1984, p. 117). In other words, space occurs through an operation—such as movement, action, or interaction—in a specific location at a certain time. The second perspective starts with a place that is a stable and definitive location, which can be destabilised and transformed into space when humans operate at a particular time.

This study positions its discussion in the second perspective of space and place relation. Nowadays, there are so many variables that potentially destabilise our environment. The daily spatial practice previously performed directly—such as direct face-to-face interaction, is now being intervened by numerous devices and screens (See Figure 1 and 2). The space that we construct in our everyday life is increasingly technologically mediated. This mediated space extends and/or enhances the physical environment by mixing it up with a digitally produced virtual environment, opening new logic and possibilities, but also requires a new understanding and point of view.
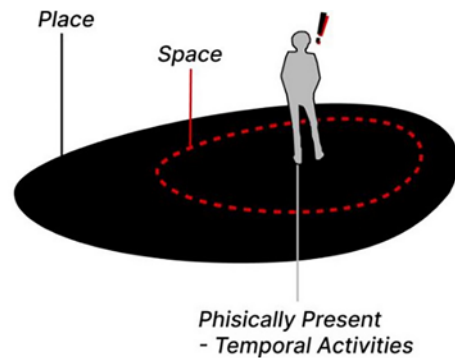


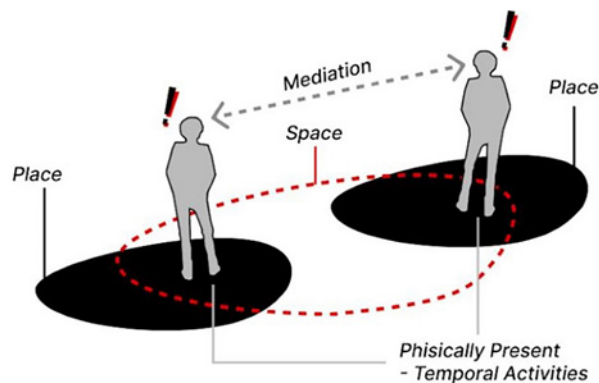*Figure 1. Relation between place and space (Image by authors)*



*Figure 2. Relation between place and space through mediation (Image by authors)*

### Mediated space and sense of presence

Mediated space is a concept about a space that is formed and experienced through the utilisation of a technological device (Harrison, 2009; Reno, 2005). In mediated space, technology augments, enhances, or replaces the resources and medium to support humans in performing a specific action (Harrison, 2009; Mark, 1999; Reno, 2005). The most common example of mediated space is how it enhances the formation of space through the interaction of people in a remote location (Mark, 1999). However, this remote interaction is just one example of various scenarios of mediated space.

One of the technological devices that plays a crucial role in the construction of mediated space is the 'screen' (Figure 3). The screen acts as a frame that mediates both spatial action and operation; it allows different actors in a real and virtual environment to co-produce or construct the space (Brown, 2019; Harrison, 2009; Gullström, 2010). This juxtaposition of a real and virtual environment through a screen frame opens various scenarios of mediated space, from consumption of a particular medium (film or news) (Friedberg, 2006, Brown; 2019), to augmentation and enhancement of human interaction (Mark, 1999; Gullström, 2010), to recreation and immersion of physical environment in a virtual world (Reno, 2005).
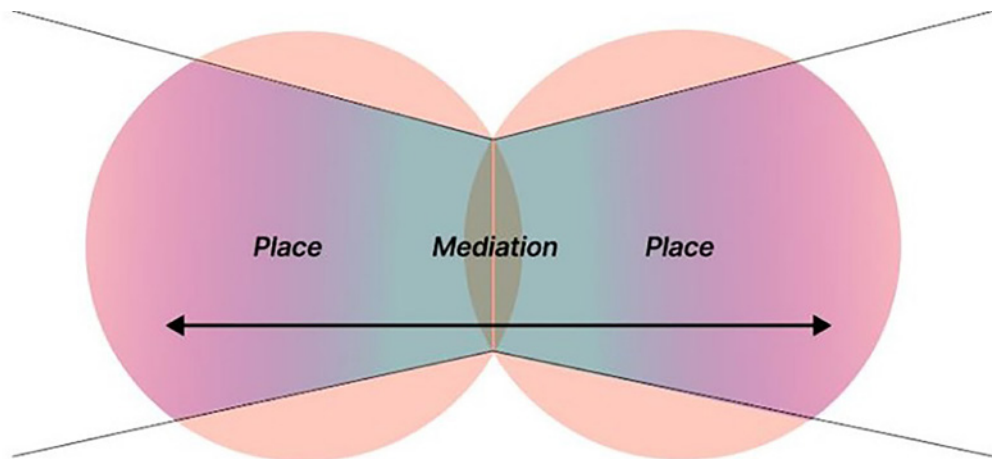
These various scenarios of mediated space can be divided into the physical and human conception of mediated space (Reno, 2005, p. 182). Research that deals with the physical conception of mediated space discuss mediated environment as a recreation of the physical-natural environment in a virtual setting; it explores the user's spatial perception, orientation, and distance estimation in a mediated environment (Reno, 2005; Wartenberg & Wiborg, 2003). Research that deals with the human conception of mediated space emphasise how mediated space conveys an affective, social, and cultural aspect of spatial experience (Reno, 2005). Other than physical and humanistic approaches, there are also debates regarding the nature of mediated space: one perspective sees mediated space predominantly as a digital augmentation, while others position it as a hybrid space (Gullström, 2010; Henderson, 2009; Reno, 2005).

*Figure 3. Screen as mediation between different environments (Image by authors)*

This study adopts a position proposed by Gullström (2010), which emphasises the performance and presence aspect of mediated space. This approach involved some ideas from various positions—such as recreation of the physical environment in a virtual setting and involvement of different participants (both real and virtual entities)—but then focus on how these concepts and elements contribute to the generation and utilisation of mediated space as an architectural extension. Therefore, "mediated space must be 'performed' or 'generated' through a process which includes audiovisual communication technology" (Gullström, 2010, p. 49). During this process, sense of presence is crucial since the constructed (mediated) space vanishes when the presence diminishes or is lost (Henderson, 2009).

Sense of presence in mediated space is related to the experience of being present in a mediated environment shaped by technological features and devices (Reno, 2005), including but not limited to possibilities to perform actions such as interacting, controlling, managing, and manipulate objects in the environment (Tamborini & Bowman, 2010; Wirth et al., 2007). Even though the elaboration of presence can be varied depending on the areas of study, there is general agreement about the multi-dimensional nature of presence (Tamborini & Bowman, 2010). This study considers three dimensions of presence, which are physical presence, social presence, and self-presence (Lee, 2004; Tamborini & Bowman, 2010).

Spatial presence is a term that illustrates the sense of being present in a mediated environment (Tamborini & Bowman, 2010) and/or a state that allows interaction, in form of feedback and response, with virtual entities (like they are actual physical entities) (Lee, 2004). It is important to note that the ability to interact with virtual entities is not always present in all mediated space scenarios. For example, people who watch a movie can feel a spatial presence without interacting with the object inside the movie (Figure 4). Spatial presence provides feelings as if people are inside, being involved, and immersed in the mediated environment (Steuer, 1992; Tamborini & Bowman, 2010).

Social presence refers to a state of how people feel they are real social actors in a mediated space (Lee, 2004) that can engage with others. This socialisation experience occurs through three elements of social presence: copresence, psychological involvement, and behavioural engagement (Figure 5). These elements can occur in mediated space when people are aware of "distinguishable visible others (copresence) who appear as intelligent beings (psychological involvement) and are capable of engaging in interaction (behavioral engagement)" (Tamborini & Bowman, 2010, p. 88). However, it is important to note that social presence can occur both in two-way and one-way communication situations (Lee, 2004).

Self-presence is a state in which people can experience the presence of their actual self in mediated space (Lee, 2004). The idea of self-presence is indeed closely related and can be conflated with spatial presence. However, spatial presence is more about environmental experience and possibilities to

interact with various elements in it, whereas self-presence is more about self-experience: seeing a representation of self— which is commonly called an avatar—in a virtual environment with a certain role and various possibilities to act and perform (Tamborini & Bowman, 2010) (Figure 6).
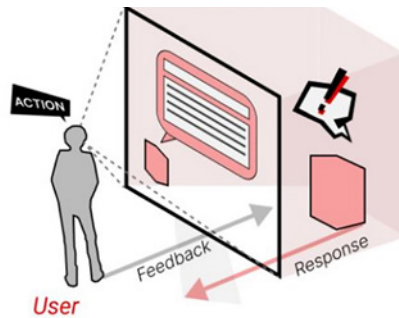


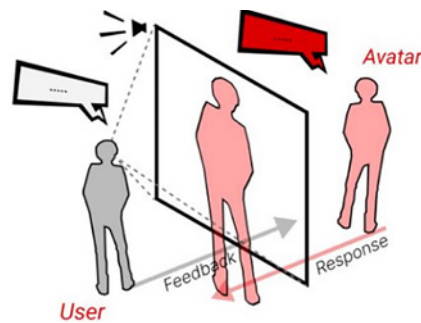*Figure 4. Experience of spatial presence (Image by authors)*



*Figure 5. Experience of social presence (through two-way interaction) (Image by authors)*
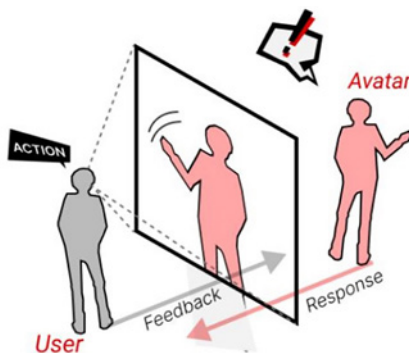
*Figure 6. Experience of self-presence (Image by authors)*

These three dimensions of presence—spatial, social, and self—occur along with the construction process of mediated space. If the sense of presence is lost, then the constructed mediated space also vanishes. Therefore, some strategies are needed to keep the sense of presence by maintaining the interaction between all elements of mediated space.

### Framing and forming the mediated space

The previous section has mentioned the importance of the screen in the formation of mediated space. Just like how a window frame a view to the other side of an environment, the screen act as a frame that mediates the connection from a real environment to the virtual environment. In this mediation, the screen does not merely display the virtual environment, but it also provides an interface that lets people perform an interaction with the environment. Hence, the strategies

in how the environment is framed through the screen can be as important as what is contained within that frame (Friedberg, 2006, p. 2). For the discussion in this study, we adopt three strategies proposed by Koslowski (2017), which are miniaturisation, immersion, and mapping.
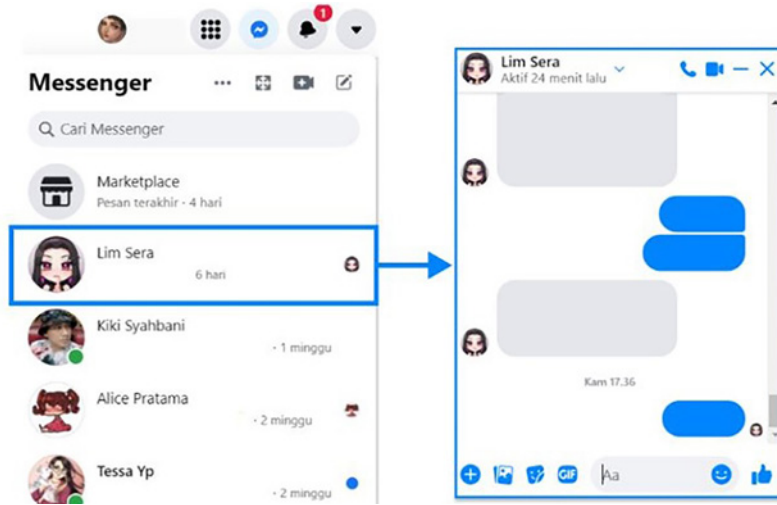
Miniaturisation focuses on particular qualities and/or elements of space, which are represented through the reduction of scale (hence the term miniaturisation) (Koslowski, 2017). This reduction is a strategy to manage the complexity of the hybrid environment, making it easier to observe and understand. Facebook can be seen as a form of miniaturisation of a hybrid social space (Koslowski, 2017; Stirling, 2016). Through features such as walls, newsfeed, and chat, Facebook lets us inhabit a hybrid social space and interact with others. It is indeed not a full-fledged recreation of actual social space with all of its complexity, but that is not the point of the miniaturisation strategy (which only focuses on specific qualities or elements) (Figure 7).

Immersion is a framing strategy emphasising distance factors that manifests through a full-scale spatial experience in a certain environment (Koslowski, 2017). In other words, immersion frames the viewing subject as a part of the virtual environment, in which the subject can experience it in a similar way to the real environment. Therefore, immersion enables all subjects to simultaneously present in the same environment, in which they can freely move and change their viewing angle, just like in the real environment (Koslowski, 2017).

Mapping aims to establish and represent a relationship between things in the environment that evolved (Koslowski, 2017). Similar to miniaturisation, mapping also reduces the scale of the environment to manage its complexity. However, mapping focus to provide a sense of direction and orientation to all entities frame within the map, which is related to spatial experience. The difference is viewing capacity of the subject in immersion is solely dependent on its location. At the same time, mapping—despite in simpler visual representation—provides a more holistic picture of the relationship between elements in an environment that is continuously updated over time (Koslowski, 2017).

This section establishes our position regarding the relationship between place and space, and how such relationship alters between the interchanging use of the real and the virtual environment. This study positions place as a physical location, an environment that acts as a setting where people can generate space by performing a set of activities. Due to technological advancement, space no longer has to be constructed through a direct interaction of people in the same environment. Instead, space can be constructed by different entities in a different environment through the mediation of technology. The following diagram provides a framework to clarify the formation process of the mediated space.

*Mediating Space: Framing Strategy and Sense of Presence*
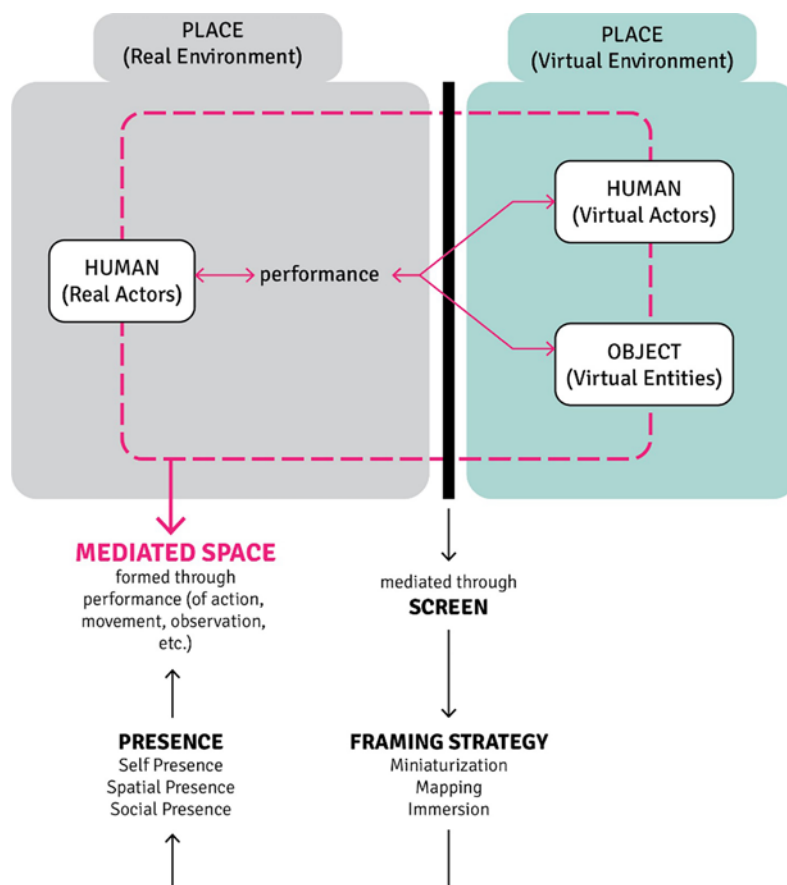
Presence and framing strategies are crucial concepts in the formation process of this mediated space. Presence is a state in which the subject in a real environment can feel present and maintain engagement with the virtual environment. Framing strategies are how the environment is framed on the screen, which aims to help the subject to achieve a sense of presence (through possibilities to act in the environment).

**Exploration of mediated space through video games**

The case for this study requires a situation that involves both real and virtual environments. In this study, the inclusion of the virtual world is related to exploring its role as an extension of architectural elements, especially how it provides new possibilities that are only accessible through the virtual dimension (Miltiadis, 2020). The requirement is similar to the idea of cybrid proposed by Anders (2005), which is an architecture that hybridises the material and virtual in one composition. This hybridisation should consider three needs, which are: (1) context (integrate both physical/material and simulated environment), (2) coherence (exhibit both static and time-sensitive behaviours), (3) corroboration (mixed of direct and mediated experience) (Anders, 2005).

Based on the requirement, we propose video games as the base category for the case selection. Video game arguably fulfil the need previously stated, which is: (1) Context involves players in a real environment that interact with entities in a virtual environment, (2) Coherence in which players need to follow the rules of the games (static behaviour) while still having some level of freedom to make their own decision (dynamic/time-sensitive behaviour), (3) Corroboration when players involves a direct experience (e.g., the tactile sensation when entering input through the controller, watching a screen) and also mediated experience (e.g., navigation in a virtual environment).

Furthermore, video games also have a concept named *gameplay* that is closely related to the idea of framing strategy. *Gameplay* is a set of activities that can be performed by the player in a virtual world (Fabricatore, 2007). In general, the idea of *gameplay* is based on rules of input and return, in which, players can perform something as an input that influences the game elements, and then the game will provide a return to the player based on this input (Djaouti et al., 2008). However, the gameplay is not only about the player. It also involves activities of other entities in the same virtual world, both "as a response to player's actions and/or as autonomous courses of action that contribute to the liveliness of the virtual world." (Fabricatore, 2007, p. 3). Therefore, gameplay can be seen as a form of 'framing strategy' because it frames the virtual world in a particular way to provide possibilities for the player to perform an action and engage with the world.

As a category, video game encompasses different genres such as racing, action, shooter, and role-playing game (RPG), each genre has a set of rules and *gameplay*. This study selects the RPG genre because it arguably provides the most freedom

in terms of *gameplay* compared to the others. In RPG—as the name implies—players take a certain role (e.g., knights, students, thieves) with a particular objective. The player usually has some level of freedom to explore the world until they reach the objective. This study then specifically selects one game from the RPG genre titled Persona 5.

Persona 5 is a video game developed by a game developer named Atlus for the Playstation 3 and Playstation 4 platforms. Persona 5 was chosen due to the variety of environmental settings (context) and *gameplay* it offers. The environment in Persona 5 is a mix of virtual recreation of a real-world setting (particularly Tokyo, Japan) and a fully imaginary digital world (based on the game's story). Whilst a variety of *gameplay* contains different framing strategies that potentially lead to a different form of interaction between the players and the virtual environment of Persona 5.

Players have two roles in Persona 5 world. First, the player takes the role of a high school student called Shujin. In this role, the player uses a certain virtual character represented by a specific in-game avatar (Figure 10). Second, using the same character/avatar, the player will investigate strange phenomena and fight enemies. Therefore, *gameplay* in Persona 5 consists of: (1) simulation of a high-school teenager's life, in which players can interact, socialise with friends, and do other high school-related things, (2) dungeon exploration *gameplay* in which layers investigate the strange crime-related phenomena, solve puzzles, and fight enemies. The discussion in this study will focus on the life simulation *gameplay* because this *gameplay* alone already contains different framing strategies that are potentially related to different dimensions of presence.



*Figure 10. Player in-game character's avatar (Taken from https://tcrf.net/ Persona_5/Unused_ Models)*

This qualitative study aims to understand a particular concept or phenomenon (mediated space) through a subjective interpretation and analysis (Newman & Ridenour, 1998; Tuli, 2010). This study starts with a theoretical discussion as a basis to propose a position and argument—regarding the formation process of mediated space—in the form of a theoretical framework. This study then employs a case—a video game titled Persona 5—as a medium to elaborate further on the argument proposed in the theoretical discussion. Hence, the theoretical framework becomes the lens and foundation for data collection and data analysis or interpretation.

We argue through the theoretical framework that framing strategy bridges the formation of mediated space by allowing a real actor to perform actions or interactions in a virtual environment. Therefore, the data collection process was done to identify the relation between virtual environment and the *gameplay* that can be performed within the environment. More specifically, this process aims to identify: (1) the action or interaction performed by the players (as real actors), (2) virtual environment and/or situation in which the action or interaction takes place, (3) other entities (both characters and/ or objects) involved in the action or interaction, and (4) on-screen elements (interface) involved in the action or interaction.

The data was collected through observation while we played the game (without any involvement of other parties or participants). We collect the data from two *gameplay* segments, which are 'Tokyo city exploration' and 'talk-listen-examine.' The data from observation was recorded by taking a screenshot.

The data analysis was done with the same theoretical framework. However, it focuses on further elaborating and interpreting the concept based on the data that has been collected. Overall, the analysis consists of three parts: (1) the idea of framing strategies employed through certain *gameplay* in a specific environment, (2) the dimension of presence that occurs through the implementation of a particular framing strategy, (3) the construction of mediated space from the *gameplay* (as a form of framing strategy).

**Framing strategy and the sense of presence in the mediated space of Persona 5**

As mentioned briefly in the previous section, in the life simulation segment of Persona 5 *gameplay* player takes the role of a high school teenager. Players can perform various activities to experience the life of a high school student such as socialising with friends, studying in a classroom, riding a train, exploring the city in their free time, or simply doing laundry. Just like real life, this *gameplay* also has time segmentation. When the player chooses to do a certain activity, it will take some part of the time segment (which is irreversible). In other words, just as the name suggests, this *gameplay* makes the player simulate the daily life experience by performing specific activities in a particular environment.

In general, the life simulation takes place in a reimagination of Tokyo city in the form of a 3D model (covered by texture or image, that is similar to the real place or building which the model represents). In total, there are 24 spots or locations in Tokyo that became the reference for the environment in Persona 5, for example, Sangen-Jaya, Shibuya Town Square, and Shibuya Centra Street. This reimagination is done both in form of a fairly simple 2D map and a full-scale 3D model (which is related to the framing strategies) (see Figure 11 and Table 1).

Even though the detailed activities are quite varied, life simulation *gameplay* in Persona 5 can be categorised into two main parts: (1) exploring various locations in Tokyo city, and (2) performing certain activities (that are possible to do in each location). Therefore, the following paragraphs explain the utilisation of framing strategies and the sense of presence that occurs in different scenarios at both parts of the *gameplay*.

*Tokyo city exploration (Framing: Immersion + mapping)*

Framing strategies in this part of *gameplay* are a combination of immersion and mapping. Immersion positions the player avatars in a full-scale 3D environment. It is important to note that full-scale here does not refer to a 1:1 re-creation of Tokyo city (in terms of size and complexity of the city), but it refers to the scale and proportion of the player's avatar relative to the

environment. The immersion framing strategy makes the player can move quite freely in the environment. The player can walk or run in all directions, 360 degrees. The orientation and viewing angle will follow the player's position, which helps the player to observe the environment to identify interesting elements, other characters, and a possibility to perform further action.
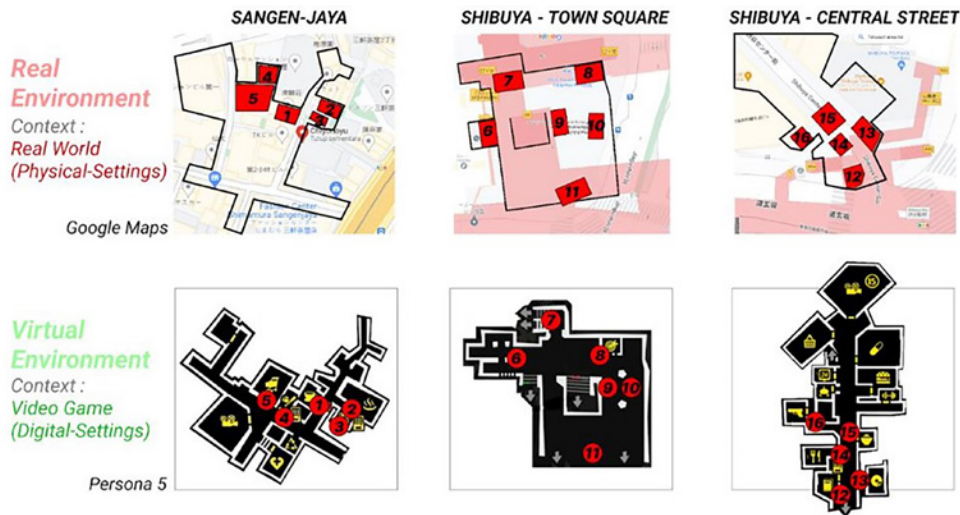


*Figure 11. Comparison of the real-world map of the area in Tokyo and the Persona 5 in-game map (Image by authors)*
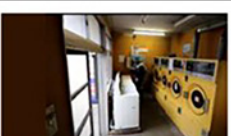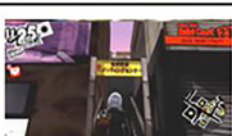


| Place Tags | Landmark Number | Virtual Environment | Real Environment |
|---|---|---|---|
| Sangen-Jaya | 1. Leblanc Cafe | | |
| | 2. Bath House/ Vending Machine | | |
| | 3. Washing Machine/ Dryers | | |
| | 4. Batting Cages | | |
| | 5. Supermarket | | |
| Shibuya Town Square | 6. Shibuya Station Gate | | |

*Table 1. Comparison of the real-world place of area in Tokyo and Persona 5 in-game 3D model*

Even though the immersion lets the player freely move and experience the environment at full scale, the relation between the player and the environment is 'limited' to the player's viewing capacity, which also depends on the player's position. Mapping then helps the player to see and establish the relation with the environment—along with other characters and elements—in a more holistic way. Mapping provides a simple aerial or top view that lets the player identify their current position in the environment, which they can directly observe through immersion, and direction to other locations or character positions. The player's current position and orientation on the map are continuously updated every time the player moves. Within the context of exploring the city, mapping lets the player see the relation with their immediate surrounding, and the possibilities to establish relations with other elements of the environment on the map.
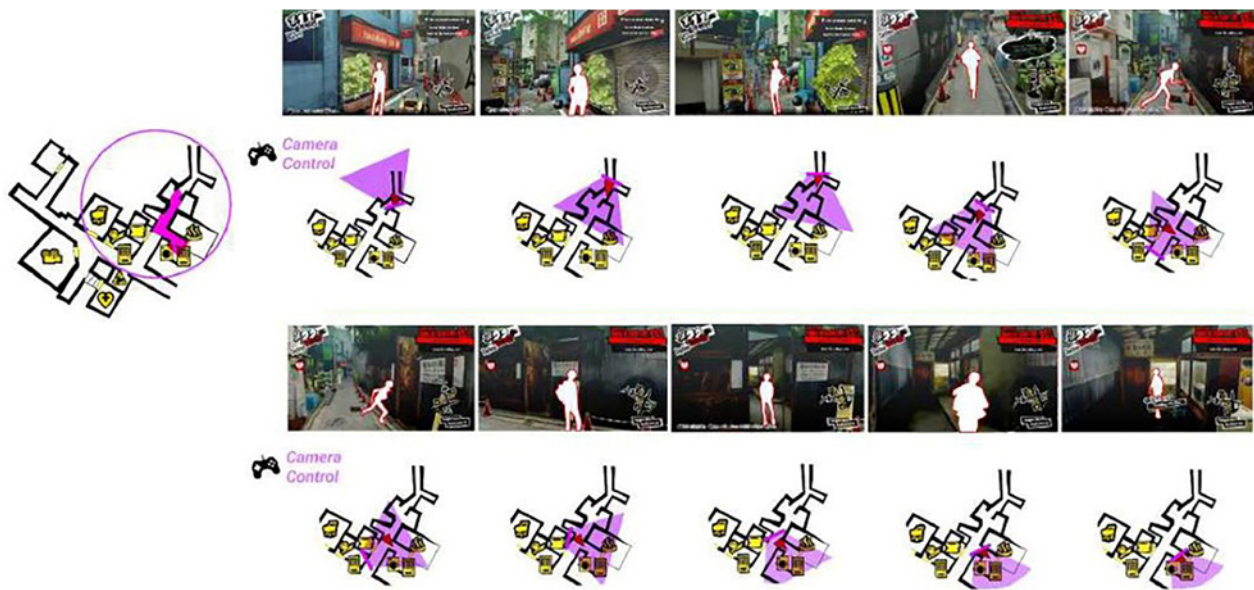
### Tokyo city exploration (Presence: Self, spatial, social)

Tokyo city exploration that is framed through immersion and mapping potentially provides players to achieve all types of presence—the self, spatial, and social. Players can experience self-presence when they can position their avatar as a part of the virtual environment of Tokyo city, with a certain role (e.g., as a high school student) and various possibilities to perform. Players can experience spatial presence when they are not only present but also free to move and observe the environment in all directions. The fact that the Persona 5 environment is a mix of reimagination of a real place with an imaginary setting also helps provide a sense of spatial presence. Players then can experience social presence through the presence of other Tokyo city citizens (copresence) as intelligent beings (psychological involvement) (Tamborini & Bowman, 2010), even though they do not always engage in an interaction (which is possible to do in a certain situation). As Lee (2004) argues, social presence can occur in both one-way and two-way situations.

*Figure 12. Tokyo city exploration through immersion and mapping. The red dot and the purple triangle represent the position and the viewing angle of the avatar, both are updated in real-time, following the movement of the character (Image by authors)*

***Talk-listen-examine (Framing: Miniaturisation + immersion and mapping)***

This part of *gameplay* is not a fully separated section from the Tokyo city exploration, instead, it is another layer that adds depth regarding what the players can do in the environment. In a certain situation, the player will receive a prompt that gives them the possibility to perform a particular action. The main framing strategy that utilises in this prompt and action is miniaturisation, even though it is also supported by immersion and mapping—to help the player identify sections of the environment that allow them to perform further action. As explained in the theoretical discussion, miniaturisation focus on a particular quality or element and then represent it more simply. Players can do different types of actions in different situations in Tokyo city. One of them—which arguably plays a significant role in the Persona 5 *gameplay*—is dialogue.

Generally, there are two dialogue situations in Persona 5: (1) direct dialogue with other characters in the same environment, (2) indirect dialogue with friends through an in-game smartphone. In the first situation, while exploring the city, the player will encounter other characters that let them perform further action (dialogue). When the player meets this character, a prompt in the form of a 'bubble' dialogue will appear. Generally, the player can choose to 'talk' or 'listen' to the character. In a specific scenario—usually related to a character with a particular in-game role (such as close friends)—the player will enter a specific setting (such as a classroom, café, etc.) in which they can perform a bit deeper conversation that give the players several options to response within the conversation.
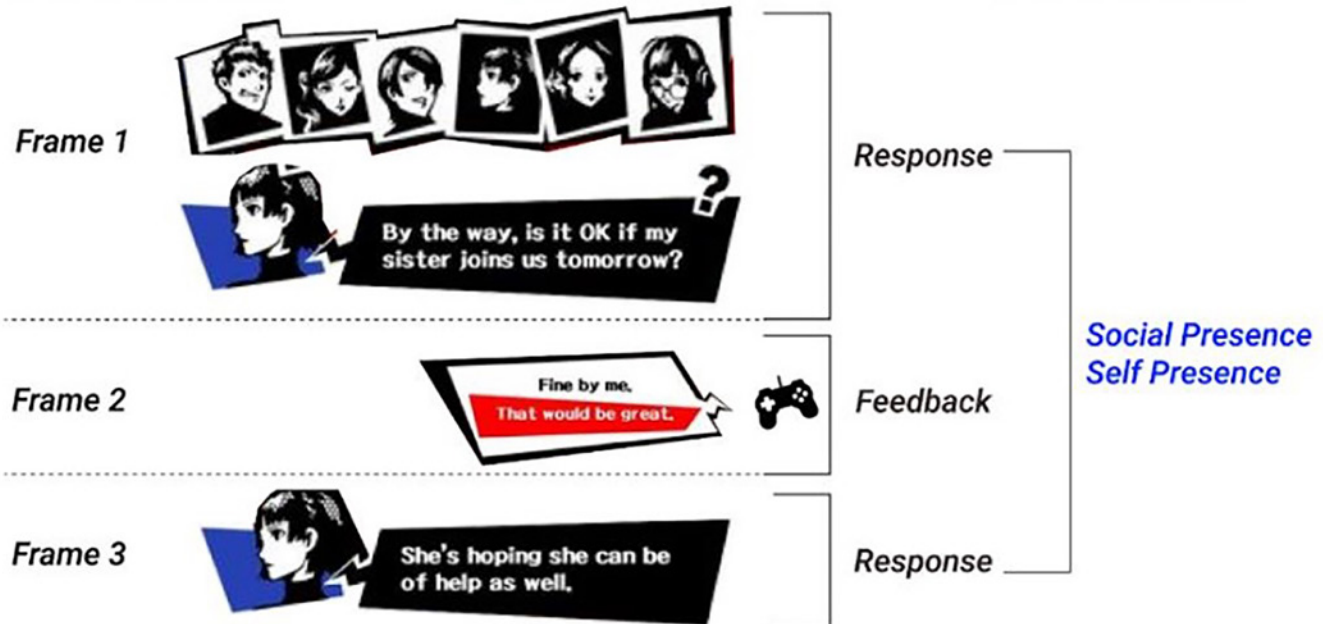
In the second situation, in a certain time segment, the player will receive a prompt in form of a notification on their in-game smartphone. If the player decides to respond, the game interface will change (zoom in) to the smartphone screen. The player then will see some form of chat application. This application has a similar 'bubble' as in the first situation. Through this app (Figure 13), players then can have a dialogue with their friend, who does not copresence in the same environment as the players.

In both situations, miniaturisation can be seen in how the complexity scale of dialogue is reduced to an interface in form of a 'bubble.' The player does not actually 'talk with other characters' in the way the player moves and observes the city as they do in a real environment. Instead, the player interacts with other characters based on the text being displayed inside the bubble (which is similar to the chat and wall feature on Facebook, albeit simpler in terms of participants involved in the interaction).

Another scenario in which miniaturisation strategies are being utilised is related to how the player interacts with the elements of the environment. One simple example is how the player can use the in-game vending machine. Similar to dialogue activities, the process starts with immersion. The player can explore the city to find a vending machine in a specific location, such as inside a bathhouse. Mapping also plays a role

by displaying the location with a vending machine on the map. When players encounter the vending machine, a prompt in the form of a bubble (with the text 'examine') will appear. If the player chooses to examine the vending machine, a further option will provide information about an 'item' (beverages) that the player can buy using an in-game currency. Similar to miniaturisation in dialogue, the player does not operate the vending machine; they interact with the vending machine (to bought a drink) through the mediation of the in-game user interface.

### Talk-listen-examine (Presence: Self, social)

Even though the miniaturisation strategy in Persona 5 seems very simple, it provides an additional layer of presence for the player. It is also important to remember that the miniaturisation strategy does not aim for complexity by recreating a full-scale spatial experience. Conversely, miniaturisation focus on particular quality or elements of the interaction. Therefore, miniaturisation can help the player to experience self-presence by further enhancing the involvement of their avatar in the virtual environment. On top of the ability to move and observe the environment through the immersion framing, the player may also interact with the environment (such as by operating a vending machine), albeit in a simpler way.

The enhancement of experience provided by miniaturisation also affects social presence. As mentioned in the previous section, immersion and mapping can help the player to experience social presence through the dimension of co-presence and psychological involvement. Through miniaturisation, the player can experience the third dimension (behavioural engagement), because the player does not merely co-present with other characters (both in the same or remote environment) but also able to engage in interaction; from simple talk-and-listen with other Tokyo citizen, to a deeper conversation with particular characters.

### Mediated space from life simulation *gameplay*

As explained in the theoretical discussion, the formation of mediated space involves entities of people and objects, in a real and virtual environment. People—in this case, act as the player—trigger this formation process from the real environment, using a device in the form of a video game console (PlayStation 3 or 4). This action then activates the screen, which mediates the connection between a player in a real environment and the whole virtual environment of Persona 5.

The formation of mediated space starts when the player can perform a set of actions in the virtual environment. In general, two mediated spaces are formed through the performance of the player in the Life Simulation *gameplay* part of Persona 5: mediated space of (Tokyo) city exploration and mediated space of dialogue activities.

Mediated space of (Tokyo) city exploration is a space that is formed when the player explores and observes the virtual-reimagined version of Tokyo city in Persona 5 (Figure 15). The immersion framing strategy helps the player to perform an action related to distance, movement, and visual observation, allowing

the player to move and observe in a full-scale 3D environment. The mapping framing strategy helps the player to perform an action related to a position, orientation, and direction. This provides real-time locational information to identify the player's current position, and how they can achieve other locations in the environment. The miniaturisation framing strategy helps the player interact with the environment. A combination of all three framing strategies can provide a complete sense of presence for the player because they let the player: (1) see the extension of self—in form of a character avatar—to present in the virtual environment (self-presence), (2) move or navigates and—in some situation—interact with the environment (spatial presence), (3) copresence with other entities or characters (social presence).
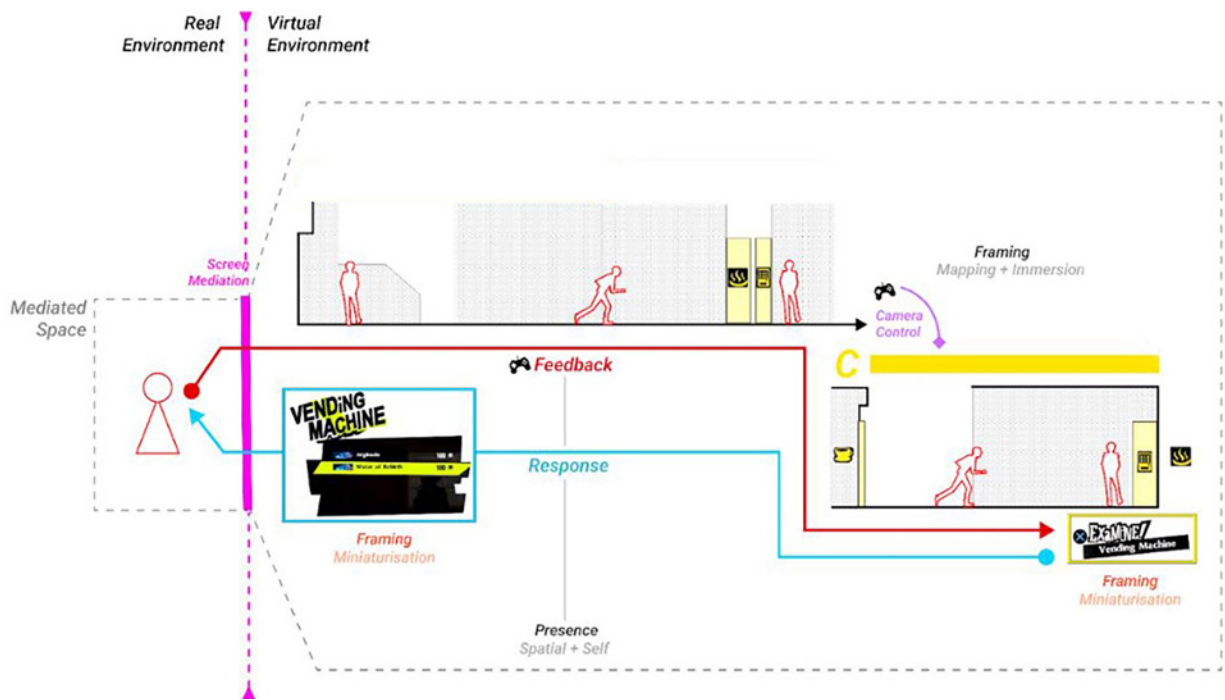
Mediated space of dialogue activities is a space that is formed when the player engages in a two-way interaction with other citizens or characters in a certain setting 5 (Figure 16). If the previous mediated space is more 'dynamic'—since its formation process heavily involves the ability of the player to move around in a 3D environment—this space is more 'static' since it requires the player to pause the movement and engage in an interaction at a certain place. Immersion and mapping also play roles in this formation process. However, the main framing strategy in this formation process is miniaturisation. It simplifies the process while still letting the player form a two-way interaction with other characters in different levels of depth, depending on the role of the characters in the game. Immersion and mapping help the players to experience two dimensions of social experience (copresence and psychological involvement), miniaturisation then makes the experience more complete by adding the third dimension (behavioural engagement).

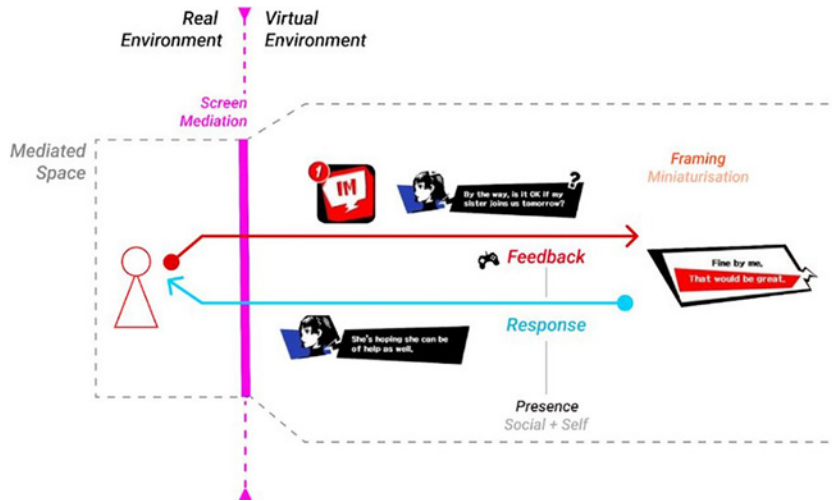*Figure 15. Mediated space of (Tokyo) city exploration (Image by authors)*

We can summarise the relation between multilayers of framing strategy with dimensions of presence in the formation of mediated space through Table 2. We can read the table horizontally to see the possibilities of action from one framing strategy and the dimension of presence it can provide. The table also can be read vertically to see the combination of different framing strategies and how it affects both possibilities of action and dimension of presence. For example, immersion can provide all dimensions of presence. However, the experience is limited because even though players can freely move around in the environment, they are unable to perform an interaction with the environment. Conversely, miniaturisation provides possibilities to interact with other entities in the environment. But these possibilities cannot be fully actualised if the players are unable to present in a certain location or situation. Hence, this table shows the fragmented nature of the virtual environment and how it requires multilayers of framing strategies to assemble them within the construction of mediated space.

| Framing Strategy | Possibilities of Action | Dimension of Presence | | |
| --- | --- | --- | --- | --- |
| | | **Self Presence** | **Spatial Presence** | **Social Presence** |
| **Immersion** | movement and observation in a full-scale 3d environment, perception of distance | being present in a virtual environment | involvement through the ability to navigate through and observe the environment | the presence of others (copresence) as intelligent beings (psychological involvement) |
| **Mapping** | establish potential relation through the identification of position/location, orientation, and direction | possibilities to visit other places/positions beyond the current viewing angle | further information on the environment beyond the current viewing angle | information regarding the position of others (copresence) beyond the current viewing angle |
| **Miniaturization** | interaction with other entities (characters/actors and objects) | role of self in the virtual environment (and its possibilities) | interaction with elements of the environment | conversation or dialogue with other characters/actors (behavioural engagement) |

*Mediating Space: Framing Strategy and Sense of Presence*

**Conclusion**

This study discusses the formation process of space that involves actors and entities in a real and virtual environment. Technological device, especially the screen, plays an important role in mediating the connection between the two, hence the term mediated space. This study argues two concepts are important to elaborate on to understand the process of framing strategy and sense of presence.

Just like how a window frame the outside to be experienced by the inhabitant, framing strategy is the way to frame the virtual environment to be experienced by actors in the real environment; it provides possibilities for a real actor to be present and perform a set of activities in a virtual environment. This study focuses on three concepts of framing strategy: immersion, mapping, and miniaturisation. Immersion provides possibilities related to distance, movement, and observation in a full-scale 3D environment. Mapping provides possibilities related to position, orientation, and direction. Miniaturisation provides possibilities related to interaction and/or engagement. These three strategies do not have to be used exclusively, instead, they can—or even should—be combined to help the actors to achieve a complete sense of presence because employing only a certain strategy in isolation will limit the possibilities of action/interaction that can be performed.

Presence can be seen as an experience of a real actor when they engage with the virtual world through the involvement of a certain framing strategy. This study considers three dimensions of presence that potentially occur during the formation process of mediated space, which is: self-presence, spatial presence, and social presence. As an experience of being present in virtual space, self-presence can be achieved through all three framing strategies, albeit at different level (immersion arguably provide the most significant experience). A specific emphasis in each strategy can enrich the actor's experience that makes them acquire another sense of presence. Immersion, instead of merely being present, make the actor can explore the environment, while mapping helps the player to identify their position related to the whole environment. Therefore, a combination of immersion and mapping can help the player to experience spatial presence. Miniaturisation further enhances the experience, in which actors are not merely able to move and identify their current location, but also to interact with other actors and entities in the location.

This study has several limitations, mainly related to the type of case study (video game) and the subjectivity involved in data collection and analysis. This study uses a video game as the case, which—despite the growth and technological advancement of the industry—is still commonly seen as a form of entertainment. Therefore, video game-related interaction can be argued more as consumption rather than an effort to extend our daily physical environment to the virtual environment. The study was also fully conducted by the authors without any involvement from respondents, which makes the argument—especially

regarding the concept of presence—very subjective. Study about the utilisation of mediated space in other fields such as work and education—that involve more participants—is necessary to develop the understanding of mediated space further, and how it can help us to develop a new approach to construct the virtual environment as an important extension of architectural spaces.

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