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% Arabica Bangkok: A Case Study on Spatial Design and User Interaction

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Abstract

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This research investigates how architectural design shapes user experience and interaction within % Arabica cafés in Bangkok, Thailand. As part of the global third-wave coffee movement, these cafés emphasize transparency, craftsmanship, and minimalist spatial expression, positioning coffee preparation as a visible and performative act. The study aims to examine how specific design elements—such as counter configuration, spatial layout, materiality, lighting, and visual openness—influence barista–customer interaction and multisensory experience. Adopting a design ethnography approach by Galen Cranz and sensory methodologies developed by Sarah Pink, the research employs on-site observation, Behavioural observation, Spatial Photo documentation. The focus on a single, globally recognized café brand allows for an in-depth analysis of how consistent design principles are adapted within a specific urban context. The study aims to contribute to architectural knowledge by identifying how spatial design strategies can enhance interaction, support educational engagement through a carefully curated sensory environment.

Keywords: Third Wave; Coffee Culture; Multi-sensory experience; Social Interaction; Servicescape.

1. Introduction

The study of design elements in third-wave cafes holds significant value within architectural research, as it bridges spatial design with social performance and user experience. Third-wave cafes are not merely commercial interiors; they function as performative spaces where the preparation of coffee becomes a public act of craftsmanship and communication between barista and customer. Understanding how architectural design elements—such as counter configuration, materiality, lighting, and spatial organization—shape these interactions expand architectural discourse toward experiential and performative dimensions of space (Kvist & Rataj, 2024). This research contributes to architectural knowledge by exploring how the built environment facilitates human behavior, emphasizing the role of design as a medium of social expression rather than a static aesthetic form.

From a cultural standpoint, third-wave cafes reflect a global movement toward authenticity, transparency, and locality in everyday life. This movement positions coffee not merely as a commodity but as an experiential cultural product defined by artisanal quality, single-origin traceability, and meaningful engagement with production processes (Garcia, Oliveira, & Eurico, 2024). Investigating their spatial design provides insight into how architecture mediates social rituals and identities within contemporary urban contexts. By examining how global cafe typologies adapt to local cultures and material contexts—especially within Southeast Asian cities such as Bangkok—this study highlights the interplay between globalized aesthetics and regional sensibilities in architectural expression. The findings thus contribute to understanding how global trends are localized through architectural form and sensory design.

Practically, this research offers evidence-based insights for architects and designers seeking to enhance cafe environments. By examining the effects of design elements on barista workflow and customer experience, the study generates design guidelines that promote both operational efficiency and social engagement (Waxman, 2006). Methodologically, integrating ethnographic observation and spatial analysis aligns with contemporary shifts in architectural research toward user-centered and participatory design approaches (Pink, 2013). Finally, by situating the cafe counter as a performative interface, the study deepens theoretical discussions of space as an embodied and interactive construct, extending architectural understanding beyond form to include performance, behavior, and experience (Goffman, 1956; Cranz, 2016).

In third-wave cafes, the preparation and presentation of coffee are central to the customer experience, transforming the cafe into a stage of craft and performance. However, many cafe designs continue to prioritize aesthetic branding over spatial relationships that facilitate interaction between barista and customer (Bitner, 1992). This research investigates how design elements affect the performance and experiential dimensions of third-wave cafe spaces.

The purpose of this study is to investigate how multi-sensory design is integrated into Third Wave cafes and whether it influences social interaction between barista and customers. Through a series of case studies conducted, this research aims to delve into how the study aims to identify key practices, benefits, key factors, and challenges associated with this design approach. This research will highlight the human sense regarding the experience and perceptions of people to incorporate this design into future projects.

This research focuses on Third Wave cafes—a distinct movement within the food and beverage (F&B) industry that emphasizes transparency, traceability, and craftsmanship in the coffee production and service process. Unlike earlier waves of coffee culture that prioritized convenience or mass production, Third-Wave cafes elevate coffee into an artisanal product, celebrating origin, brewing technique, and sensory qualities. The philosophy underpinning this movement is rooted in education, sustainability, and storytelling: customers are not merely consumers but active participants in a narrative that reveals the journey of the coffee bean—from farm to cup (White Elk Coffee, 2025).

Bangkok, a well-known global tourism destination, has also become a popular destination for specialty coffee connoisseurs looking to explore the vast world of coffee. Bangkok's blend of cultural tradition and modernization creates a unique dynamic for coffee enthusiasts looking to experience the city's particular coffee culture (Binson, Komkam, Phaosavadi, & Pornprasit, 2011; Luong, 2023). The rapid expansion of the third wave coffee movement, which includes artisanal coffee, has established Bangkok as a Southeast Asian specialty coffee destination. The evolution of Third-Wave cafes in Bangkok has given rise to identifiable coffee clusters, each reflecting unique spatial, cultural, and social characteristics. Each district exhibits a unique interpretation of specialty coffee culture shaped by its social context, architectural character, and demographic composition (Mertens & Mcleod, 2007; Chotiudompan, 2013).

In the district of Charoen Krung, for example, the cluster represents a fusion of heritage and special coffee innovation. Historic riverside shophouses now host contemporary roasteries and cafes, bridging Bangkok's past with its specialty-coffee future. There is a layered urban experience which mirrors Bangkok's broader cultural transformation. In contrast, Thonglor stands as an upscale, style-driven district. Here the cafes serve as creative and social hubs for young professionals and design-conscious consumers; the interiors and coffee experiences are refined and compete in ambition with global coffee capitals. Siam, often referred to as Bangkok's "Coffee Capital," occupies the heart of the city's shopping and entertainment district. It accommodates both influential Thai roasters and international specialty brands, creating a dense network of cafes catering to diverse audiences. The concentration of coffee spaces within this commercial zone underscores the intersection of coffee culture with consumerism, leisure, and urban identity.

Sukhumvit functions as a cosmopolitan "coffee corridor," characterized by its diversity and global influence. Cafes in this area reflect Bangkok's internationalism, blending local innovation with foreign trends. The district's linear urban fabric encourages exploration of various coffee experiences, each expressing a different design language and brewing philosophy. Meanwhile, Ari has emerged as the city's creative heart. It is defined by its community-focused and slow-living ethos; the neighborhoods' cafes often emphasize intimacy, minimalism and authenticity, fostering connections between baristas and regular patrons. These qualities make Ari a strong model of how spatial design and social atmosphere merge to cultivate a sense of belonging.

Finally, Silom offers a compelling contrast as a district where specialty coffee culture thrives amid corporate offices and high-rise developments. The cafes here often function as sanctuaries within the urban density—small, cozy spaces promoting relaxation, conversation and reflection. This juxtaposition highlights how Third-Wave cafes adapt to diverse urban contexts, shaping and responding to the rhythms of city life. By examining these clusters, this research aims to uncover how spatial design, barista-customer interaction, and cafe layout contribute to the performative and multisensory qualities that define the Third-Wave movement in Bangkok. Through this lens, cafes are situated not only as commercial enterprises but also as architectural and cultural interfaces—spaces that reflect evolving social values, urban lifestyles, and aesthetic sensibilities.

2. Theoretical framework and Literature review

John Zeisel's *Inquiry by Design* establishes a rigorous methodological foundation for linking architectural design with empirical investigation of human–environment relationships within environment–behavior studies. Zeisel (2006) contends that built environments are active agents in shaping patterns of behavior, perception, and social interaction, thereby necessitating systematic, evidence-based inquiry rather than reliance on intuition or formal aesthetics alone. He reconceptualizes design as an iterative research process parallel to scientific inquiry, structured through cycles of problem definition, conceptual framing, hypothesis generation, testing, and refinement. Central to this approach is the concept–hypothesis–test model, in which spatial propositions are continuously evaluated and adjusted based on observed user responses, allowing knowledge to emerge inductively through engagement with real-world settings. Methodologically, Zeisel advances a multi-method qualitative framework—including behavioral mapping, direct observation, physical trace analysis, and interviews—that captures both observable actions and inferred patterns of spatial use. This framework anticipates contemporary evidence-based design by emphasizing the accumulation of transferable knowledge grounded in user experience. While highly effective in operationalizing behavior–space relationships, the framework has been critiqued for its limited engagement with affective and multisensory dimensions of experience, which are more explicitly addressed in later phenomenological and sensory-oriented approaches. Nonetheless, Zeisel's work remains central to

architectural research for its capacity to systematically connect spatial configurations with measurable behavioral outcomes.

James J. Gibson's theory of affordance, developed within ecological psychology, provides a critical perceptual framework for understanding how users directly engage with the built environment. In *The Ecological Approach to Visual Perception*, Gibson (1979) argues that perception is not a passive cognitive process but an active, relational one in which individuals detect actionable possibilities—affordances—embedded in the environment. Affordances are neither purely objective properties nor subjective interpretations; rather, they emerge from the relationship between environmental features and the capabilities of the user (e.g., a surface affords sitting if it is at an appropriate height and stability relative to the human body). This shifts the focus of architectural analysis from form and representation to use and action, emphasizing how spatial elements implicitly communicate their function without the need for symbolic instruction. Methodologically, affordance theory supports observational and behavior-based analysis by prioritizing how users intuitively navigate, occupy, and appropriate space. Within architectural research, it enables the examination of how design elements—such as thresholds, counters, seating, and circulation paths—structure patterns of movement, interaction, and occupation through their perceived usability. Although the theory has been critiqued for underemphasizing cultural and contextual variation in perception, it remains highly influential for its capacity to directly link spatial configuration with embodied human action. In this sense, Gibson's framework complements environment-behavior approaches by providing a perceptual mechanism through which spatial design translates into observable behavior.

Drawing on Zeisel (1984) framework, cafes are further evaluated according to the presence and articulation of physical environment properties, including barriers, boundaries, and fields. Sites are selected where spatial elements—such as counter height and depth, seating orientation, circulation paths, visual screens, material transitions, or changes in floor level and lighting—clearly structure or mediate social interaction. These elements allow systematic comparison of how architectural configurations either facilitate or constrain interaction, movement, and visibility within cafe environments. In alignment with Gibson's affordances theory (2014), site selection prioritizes cafes that offer diverse and legible affordances for both customers and baristas. Such environments enable observation of how users interpret and respond to spatial cues, including where to stand, sit, observe, interact, or linger. Cafes that support multiple modes of engagement—visual observation of coffee preparation, sensory immersion, casual conversation, or solitary occupation—are particularly valuable, as they reveal how design enables or limits specific actions and social behaviors.

2.1 Third Wave Coffee Movement and Concept

The term “coffee waves” or “wave movements” in the coffee industry was first coined by Trish Rothgeb to describe distinct evolutionary phases in global coffee culture and practice. Rothgeb, a barista and roaster from the San Francisco Bay Area who later worked in Oslo, Norway, observed notable transformations within Scandinavian coffee shops during the early 2000s. Her experiences led her to conceptualize the coffee “waves” as a means of articulating how coffee production, consumption, and perception have changed over time (Rothgeb, 2002). Rothgeb initially introduced the concept in a Roasters Guild Publication and later elaborated on it in the Flamekeeper Association Newsletter, as cited by Caffè Vergnano (2023). Her framework outlined how each “wave” represents a distinct cultural and economic shift in the relationship between coffee producers, roasters, baristas, and consumers. The first wave is characterized by the mass production and commodification of coffee, emphasizing accessibility and convenience. The second wave marks the rise of branded café culture, such as Starbucks, which popularized espresso-based drinks and introduced consumers to higher-quality coffee in commercial settings. The Third Wave, in contrast, repositions coffee as an artisanal and ethical product, focusing on origin transparency, craftsmanship, and sensory experience (Borella, Mataix, & Carrasco-Gallego, 2015; Samoggia & Riedel, 2018).

The “waves” framework has since become a widely accepted heuristic in both trade and academic literature for interpreting transformations within the coffee industry. It is not a formal theory but rather a conceptual tool that helps organize the cultural, economic, and technological changes that have shaped coffee's evolution—from a mass-market commodity to a cultural, ethical, and scientific practice. The framework also illuminates how each wave has progressively deepened public engagement with coffee production chain, aesthetic qualities, and social meanings (Bhumiratana, Wolf, Chambers IV, & Adhikari, 2019).

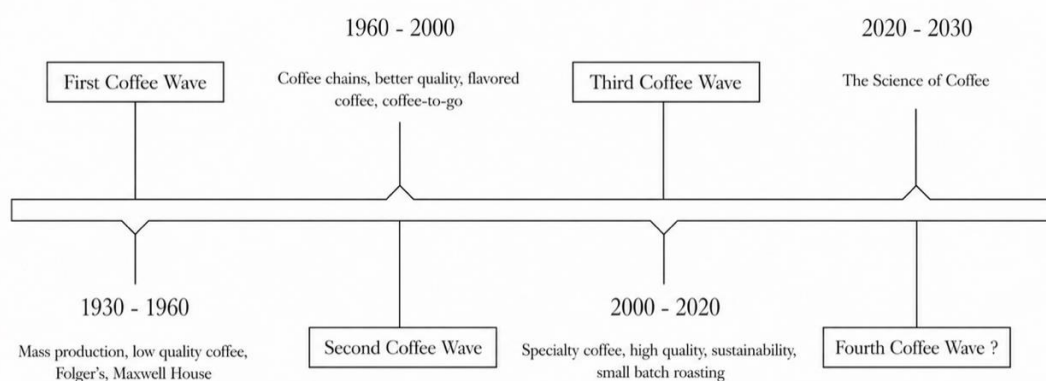


Figure 1. Coffee waves Timeline.

Specialty coffee treats coffee as an artisanal food, focusing on high quality, origin, and processing, while Third Wave coffee (popularized ~late 1990s/early 2000s by pioneers like Trish Rothgeb, Stumptown, Intelligentsia) is the movement that elevates it, emphasizing terroir, light roasts, meticulous brewing (pour-overs), transparency, and the "story" behind each bean, much like fine wine.

Understanding this evolution is essential for examining contemporary Third Wave cafés, where design, storytelling, and multisensory experience converge to create new forms of social and spatial interaction. The "wave" model thus provides an interpretive foundation for analyzing how café design mediates between artisanal practice, sustainability narratives, and consumer experience in the context of Bangkok's evolving coffee culture.

2.2 Servicescape and Café Design

Research on café environments commonly conceptualizes them as "third places," a term introduced by Ray Oldenburg to describe informal, semi-public settings that support social interaction and community life beyond home and work.

Contemporary studies expand this understanding by showing that cafés now accommodate a hybrid range of behaviors, including direct social engagement, individual and often digitally mediated work, and passive co-presence. These activities are strongly shaped by the café's atmosphere or *servicescape*, which includes spatial layout, material choices, lighting, and visual cues that influence how users move, perceive, and interact within the space.

The concept of Servicescape was introduced by Mary Jo Bitner to describe the physical environment in which service interactions occur and how it influences user perception and behavior. Bitner (1992) identifies three primary dimensions: ambient conditions, spatial layout and functionality, and signs, symbols, and artifacts. These dimensions collectively shape users' cognitive and emotional responses, which in turn affect behavioral outcomes such as approach, engagement, and duration of stay. The framework is grounded in the stimulus–organism–response (S-O-R) model, where environmental stimuli (e.g., lighting, layout) influence internal states (e.g., mood, perception), leading to behavioral responses (Mehrabian & Russel, 1974; Bitner, 1992).

Within architectural contexts, this positions spatial design as an active agent in shaping experience rather than a passive backdrop. Subsequent studies have expanded servicescape theory to include social and symbolic dimensions, recognizing that user experience is co-produced through both physical environment and human interaction (Rosenbaum & Massiah, 2011). The notion of the social servicescape emphasizes the role of employees and other customers in shaping behavior, particularly in hospitality environments where interaction is central. In café settings, the visibility and positioning of staff—especially baristas—become integral components of the servicescape. Their presence contributes not only to service delivery but also to the communicative and performative qualities of the space. This aligns with the idea that servicescapes function as meaning-making systems, where spatial and material cues communicate brand identity and expected behaviors (Turley & Milliman, 2000).

A substantial body of research demonstrates that servicescape elements directly influence customer satisfaction, perception of quality, and behavioral intentions. Turley and Milliman (2000) categorize environmental stimuli into external, internal, layout, and social variables, all of which contribute to user responses. In cafés and restaurants, spatial layout plays a critical role in organizing movement and interaction. The arrangement of furniture, circulation paths, and service counters influences both functional behavior (e.g., ordering, seating) and social engagement. Environments that are legible and visually coherent tend to promote ease of navigation and longer dwell times, while poorly organized spaces may lead to confusion and reduced satisfaction. Cafés represent a hybrid typology combining commercial, social, and experiential functions, making them particularly suitable for servicescape analysis. Research by Lisa Waxman (2006) highlights that physical attributes such as lighting, seating comfort, cleanliness, aroma, and views significantly influence user experience and place attachment in coffee shops. In addition to ambient qualities, spatial configuration plays a crucial role. Elements such as counter placement, seating arrangement, and visual access shape how customers interact with the environment and with each other. These spatial factors contribute to both individual experience and collective social dynamics, reinforcing the café's role as a semi-public environment. In third-wave cafés, servicescape design extends beyond comfort and atmosphere to include communication of product knowledge and craftsmanship. These cafés emphasize transparency in sourcing and preparation, often spatialized through open layouts, exposed equipment, and minimal barriers between staff and customers.

This aligns with the concept of cafés as performative environments, where coffee preparation is not hidden but staged as a visible and engaging process. The barista becomes a central figure within the spatial composition, and the counter operates as an interface that mediates interaction and knowledge exchange. Material and aesthetic choices—such as minimal palettes, natural textures, and precise detailing—also function symbolically, reinforcing brand identity and values associated with quality and authenticity. In this sense, the servicescape operates as a spatial communication system, conveying meaning through form, layout, and materiality.

2.3 Spatial Sensory Affordance Framework

Although Café's in Bangkok are abundant, most are heavily analyzed through style and aesthetic branding whereas in-depth analysis of each zone and what these elements have to offer in correlation with the philosophy in Coffee movement are often not studied Thoroughly. Nowadays, more coffee movements are emerging such as Fourth Wave: the science, precision, and sustainability of coffee production. Fifth wave: focuses on the business, luxury branding, and scaling of high-quality boutique coffee, and there are bound to be more saturation and evolving café spaces. This analyses framework will be helpful in identifying the elements of the café space and its potential usage and behavioral reception of users (see table 1)

Table 1: Analytical framework.

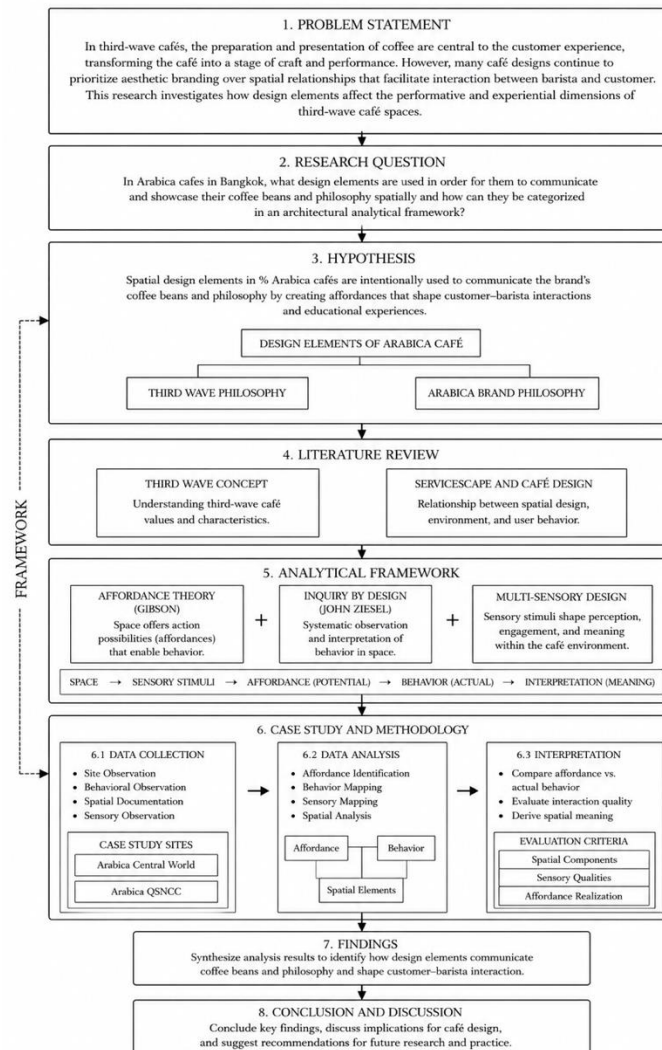
No.	Design Elements	Sensory Quality	Affordances	Behavior	Interpretation
1	Coffee Counter				
2	Bean Display	Social Interaction	What the space	How do people	Space and user
3	Roasting Area	Sensory Comfort	can be used for	Use the space	Interpretation
4	Preparation Space				
5	Seating Area				

3. Materials and Methods

This research adapts a design ethnographical method in gathering data from field research, observations, and interviews (Cranz, 2016). This quality method offers insight as to how space is perceived from *every* individual's point of view. Furthermore, Cranz emphasizes that ethnography allows architects to understand *how space is actually lived used, and perceived* rather than how it is merely intended to function. In multi-sensory design-where users experience architecture through sight, sound, touch, smell, and movement-this method provides a way to document how the occupants interact with the space. Traditional visual or formal analysis often misses these sensory subtleties, but ethnographic observation enables the researcher to record patterns of sensory perception, movement, and spatial use as they occur.

This methodological framework also guides the selection of cafe sites for study. Rather than relying solely on popularity, branding, or stylistic categorization, cafes are selected based on their capacity to reveal spatial, social, and sensory interactions through ethnographic observation. Consistent with (Cranz, 2016) design ethnography, sites are chosen where everyday practices-such as ordering, coffee preparation, waiting, and informal social exchange-are visibly enacted and can be observed as lived spatial experiences. Cafes that foreground barista-customer interaction, open preparation areas, and varied patterns of occupancy provide richer contexts for documenting how space is perceived, negotiated, and used in practice.

Within the context of contemporary urban cafes, particularly in cities such as Bangkok, this approach also allows the study to capture how global cafe typologies are adapted to local cultural, climatic, and material conditions. By selecting cafes that vary in scale, layout, and spatial openness while sharing comparable functional programs, the methodology supports cross-case analysis of how architectural design mediates sensory experience, social performance, and interaction across different settings.

**Figure 2.** Research Method Diagram.

3.2 Case Study Selection

This section compares two Arabica Café branches in Bangkok. Arabica Central world which is in the center of a tourist Hotspot and Arabica Queen Sirikit situated near Asoke-Sukhumvit considered to be in a major business, commercial, and event-driven area to serve as similar on philosophy and design theme yet contrast regarding spatial design and approach. To synthesize the findings, the space, design element, and sensory experiences are categorized into the sensory affordance framework. Table 2 and 4 provide a side-by-side comparison of Arabica Central world and Arabica Queen Sirikit showing how café philosophy and Third wave philosophy can be integrated into tangible design elements making it a basis for future design strategies for cafes.

Table 2: Case Studies.

Arabica CentralWorld	Arabica Queen Sirikit National Convention Center
	
% Arabica CentralWorld in Bangkok, designed by Studio Precht, draws inspiration from Thai architectural topography and traditional handicrafts to create a minimalist, stepped "seating landscape". Over 7,000 handmade, white-tiled concrete blocks form a modular, terraced environment—mimicking traditional, informal conversation-focused spaces in Thai murals rather than formal seating.	The % Arabica Bangkok QSNCC store design, created with partner MLKK, is inspired by the dynamic, flowing contours of the surrounding Queen Sirikit National Convention Center (QSNCC) amphitheater and traditional Thai architectural textiles. It features a minimalist, white-and-grey aesthetic with a unique, custom-made seesaw in the shape of the % logo.

4. Empirical Findings

This section compares two Arabica Café branches in Bangkok. Arabica Central world which is in the center of a tourist Hotspot and Arabica Queen Sirikit situated near Asoke-Sukhumvit considered to be in a major business, commercial, and event-driven area to serve as similar on philosophy and design theme yet contrast regarding spatial design and approach. To synthesize the findings, the space, design element, and sensory experiences are categorized into the sensory affordance framework. Table 3 and 4 provide a side-by-side comparison of Arabica Central world and Arabica Queen Sirikit showing how café philosophy and Third wave philosophy can be integrated into tangible design elements making it a basis for future design strategies for cafes.

Table 3: Findings.

No.	Dimension	Arabica CentralWorld	Arabica Queen Sirikit
1	Counter	 • Straight linear counter • Tile and cement-like brick motif that flows from floor to wall	 • Curvilinear Design • white top and Side wall and a cement finishes pedestal

2 Seating



- cement-like brick and white tile in the middle
- leveled at different heights
- open visual of the whole space



- curve seating leveled to be a counter
- ceramic white glaze
- extends to outdoors separated by transparent glass window and doors

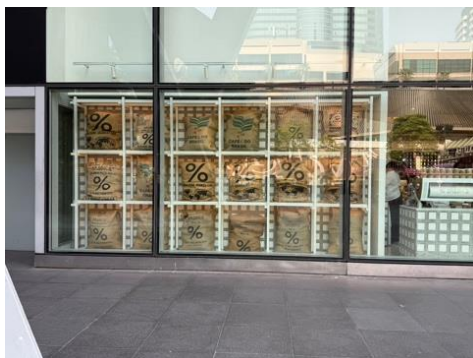
3 Roasting Area



No visible roaster in the café

- Tornado Roaster
- Foldable Glass window
- Bean display
- Coffee Grinder

4 Coffee Bean Display



- Bean Bags that serve as a wall display separated by a transparent glass wall.
- Situated in the entrance and sub-entrance of the café



- Beans bags that serve a wall display on the upper half of the wall
- Situated above the counter Area in front of the order station

5 Preparation Display



- White countertop
- Bean origin and description
- Coffee grinder
- Chemex coffee drip
- Starts at the beginning of the counter before the queue for order starts



- White countertop
- Bean origin and description
- Coffee grinder
- Chemex coffee drip
- Starts at the beginning of the counter before the queue for order starts

4.2 Analytical Framework

4.2.1 Arabica CentralWorld

Table 4: Spatial-Sensory Affordance Framework Analysis for Arabica CentralWorld.

No.	Design Elements	Sensory Quality	Affordances	Behavior	Interpretation
1	Coffee Counter	Clean and Bright	Coffee counter can be a place for customer to spectate the act of coffee preparation instead of just standing and waiting for their order to be finished. It can integrate as a part of seating for users to have an openness in visual and comfort as well.	A lot of function is placed at the counter; customer doesn't have the time to spend much at that space. Usually, they only look forward to ordering their beverage and move out of the line. Although bean classification and Chemex drip is placed there it doesn't afford users to spectate properly.	Coffee counter as a main attraction in a café can cater to many functions but the order and flow of which each function is placed enhances the storytelling and philosophy of both the café and Third wave movement.
2	Bean Display	Bean bags stand out in the white background.	Bean display segregated into different areas can be in one place. They can be interactive people can touch and feel them. Smell them. Different shades can also create aesthetically pleasing ombre colors.	Users walk pass by display area and rarely stop and take a look. Even if they do so they take a glance and look towards the inside of the shop.	Bean bags that are in one place and are displayed in more than two ways such as bean bags or coffee beans that user can interact with can enhance customer engagement and sensory experience.
3	Roasting Area	Aromatic smell, Sounds of roasting and grinding	Area can be more interactive and not separated with a glass wall. It can be extended to a tasting area.	Users only look at the roasting area they don't spend time fulling immersing as that space blocks the queue as well as the seating area. Although the sound and aroma of the roast fill the space.	Roasting area triggers smell, sound, sight of the coffee beans however it is separated by a transparent window. If there was no barrier it would be more users can engage more with the space.

4	Preparation Space	Sound of grinding, The smell of coffee aroma, the drip of water in the machine.	Preparation area can be situated where customers are waiting for their drinks instead of before. Seating can be added for them to continue conversing with barista as they prepare their drink.	Only those who order a specific menu called Chemex drip coffee usually waits in the designated area.	Preparation space is not limited in function but in visibility. If user have a reserved space for them to enjoy watching the process it is going to engage them throughout the whole process.
5	Seating Area	Comfortable and open	Seating area can be adjacent to preparation area. Seating can encourage people to sit near each other.	People sit for around 30 minutes before leaving. Although it affords openness they still tend to sit by themselves and not interacting with others.	Although seating is open it does not accommodate all users some come alone some in pairs and some in groups. Enhancing visible focal points such as coffee preparation can attract users visually and trigger other sensors in the space.

4.2.2 Arabica Queen Sirikit

Table 5: Spatial-Sensory Affordance Framework Analysis for Arabica Queen Sirikit.

No.	Design Elements	Sensory Quality	Affordances	Behavior	Interpretation
1	Coffee Counter	Clean and bright	Coffee counter can have a better space for people to pass by. It can display more coffee beans for people to interact with at the end.	Coffee counter display and function follow a smooth flow, yet the actual flow of the space is cramped making users feeling uncomfortable in staying to long	Café flows according to intention although space allowed is too cramped. Ordering, waiting and seating utilizes the most time. so, if a bigger space is afforded would be more efficient.
2	Bean Display	Bean bags stand out in the white background. Although isn't eye catching.	Bean display is limited to one area. The funnel cups on the wall design can act as a visual communication by sorting different beans showcases different colors of bean roast.	People don't spend much time looking. It is situated behind the counter and in the middle upper wall display so it's quite hard to notice physically and visually.	Bean display is limited. In reiteration, coffee beans trigger smell, sound, and touch the most. Incorporating it in the design where a high inflow of customer is beneficial such as the extended outdoor area with arabica sign seesaw.
3	Roasting Area	No Data	Roasting Area would benefit in communicating Third wave coffee and educational interaction.	No data	No data.
4	Preparation Space	Sound of grinding, The smell of coffee aroma, the drip of water in the machine.	Seating can be added for them to continue conversing with barista as they prepare their drink.	Open curve space allows people to wait and look at the preparation work whether they are waiting for their beverage or not.	Preparation space is visible to customers and is situated at the end of the counter where people wait for their beverage. Although this only applies to drip coffee menu.

5	Seating Area	Smooth Open	and	Although there plenty of spaces to sit, most of the space allocated is for outdoors instead of indoors. Café can bring visual displays or bean bags outside for people to see and interact with.	Seating has a full view of the café and seating is abundant. Although the depth of the curve seat is quite uncomfortable and people tend to sit outside more.	Seating area accommodates more people outdoor than indoors thus misses the change to engage users.
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5. Discussion

5.1 Behavioral Patterns and Sensory Attributes within Space

The chosen case study: Arabica Central world and Arabica Queen Sirikit are observed within a period of one month. The chosen time in which observations were observed where during peak hours both weekdays and weekends to differentiate the difference in who, what and how users behaved in this café spaces. Observation last for about 4 hours a day in each place to document the inflow of users. Although both cafes follow a design theme, but the overall outcome of how they were experienced is different. For Arabica Central world, it follows a more linear design from the seating arrangement to the configuration of their counter, as for Arabica Queen Sirikit, it follows a curvilinear design that follows indoor and outdoor connectivity.

5.2 Counter user behavior and interaction

Counter Configuration in Arabica Central world follows a single straight linear design that serves as coffee bean showcase with description. An ordering space with menu. Pastry showcase. Brewing area (Chemex). During non-peak hours users tend to be more conversational with baristas about menu inquiries such as recommendations. Menu design and Bean showcase are similar, so users tend to look at the beans first and then follow up with orders, and since it is situated in the entrance line leading to the cashier it is a natural flow of visual encounter of these beans. On the other hand, during peak hours users tend to line up to order their beverage. These lines usually lead up until the sub-entrance of the mall opening. During these waiting times users tend to look around and observe the whole space, from seating area to wall bean bag display and in their direct line of sight a roasting area adjacent to the coffee counter. Time taken to order beverages averages between 60 seconds to 90 seconds per person both peak and non-peak hours.

As for Arabica Queen Sirikit, the line up for ordering beverages are not as open as the one in CentralWorld it has a column that makes it feel confined. Although it follows a curve design, it has same brewing accessories as it's other branches such as espresso machine and Chemex. Beans showcase is also similar with a wall bean bag display and menu and bean description. Unfortunately, since the space is cramped the flow of movement of users is not efficient nor enjoyable. Furthermore, the branch in Queen Sirikit lacks any visible roasting area.

5.3 Seating User behavior and interaction

Arabica Central world follows a leveled terrace designed to overlook the whole café, with materials such as hollowed concrete embedded with white tiles inspired by Thai murals. Although it is intended to be an open space for people to interact, users still choose to sit separately. Although this leveled heights of seating offers visual communication and interaction to the whole space, but the preparation area is still not focused enough for people to see.

Arabica Queen Sirikit follows a curved design that allows to be a seating and a counter design, furthermore they are elongated and flows into the outdoor space. However, seating depth makes it not efficient but provides direct visual contact to the coffee preparation area.

5.4 Roasting Area User behavior and interaction

Arabica Central world has a roasting area adjacent to the coffee counter and seating area making it visible from all sides. Furthermore, it has coffee bean display of over 12 types for users to try. Arabica freshly roast the beans almost daily to ensure freshness, so the aroma of the beans is dispersed throughout the café.

No visible roasting area is visible in Queen Sirikit Branch.

5.5 Coffee Bean display user behavior and interaction

Arabica Signature coffee bean display is wall integrated design with bean bags and transparent glass with backlit light to highlight its contrasting brown tone and white design background. Not much interaction has been observed between users except for photo taking and passersby walking past the café entrance and sub-entrance.

5.6 Preparation Display user behavior and interaction

Preparation Area for Arabica Central World is out of immediate sight since most of their equipment are situated in the back of the counter except for some orders which are Chemex where they showcase it in front of the counter. Chemex is a type of drip coffee so users and see, hear, smell the coffee beans when order this type of beverage. As for Queen Sirikit the visual sight is clearer as the curved seating allows users to see from multiple angles of the coffee shop and the same menu is used in that branch.

6. Conclusions

This study examined how spatial design elements in % Arabica cafés in Bangkok communicate and showcase coffee beans and brand philosophy, and how these elements can be categorized within an architectural analytical framework. Addressing gaps in existing research—largely focused on atmosphere and social experience—the study integrates Affordance Theory and Inquiry by Design with multi-sensory design to analyze the relationship between space and behavior. Findings show that elements such as counter configuration, visual accessibility, and circulation layout act as spatial and sensory affordances that shape interaction and perception. While open and minimal designs communicate transparency, they do not consistently produce educational engagement, revealing a gap between perceived openness and actual interaction.

The study categorizes these elements and proposes a **Spatial-Sensory Affordance Framework** extending Servicescape by linking spatial configuration, sensory stimuli, and observed behavior. The findings suggest that effective engagement depends on proximity, accessibility, and spatial positioning rather than visibility alone. Although limited to a specific brand and locations, the framework offers a basis for further research across different café contexts and service environments.

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Conflicts of Interest

The author(s) report no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available from the corresponding author, A.P., upon reasonable request.

Institutional Review Board Statement

Not applicable.

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