Irresistible Media City Life: Media Architecture Participates in the Urban Public Spaces and the Construction of Environmental Visual Imagination in China

Haoyi Ruan (BFA, MFA)

Supervised by:
Doctor Gregory Cowan, Professor Duan Wu

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Abstract

This research examines the growing incorporation of digital screens into urban public spaces. Digital screens transforms building facades into dynamic media elements that influence public perception and redefine the function of these spaces. This phenomenon, known as media architecture, is explored for its capacity to enhance interaction, urban identity, and visual performance within Chinese urban public spaces. This research employs a mixed-methods approach grounded in the post-positivist paradigm and informed by grounded theory. The study covers 15 Chinese cities, with five key southern Chinese cities selected for detailed analysis. The methodology integrates spatial triad analysis, space syntax, and semi-structured interviews with users, designers, and experts, to explore the expectations and impacts of media architecture.

The findings indicate that media architecture is widely considered to enhance urban public spaces in the future by improving aesthetic appeal, fostering cultural inclusivity, promoting interactivity, and integrating advanced technologies for sustainability and innovation. The research highlights its dual function as both a medium for expressing urban identity, and as a platform for addressing challenges posed by modernisation and social transformation. By synthesising perspectives from urban studies, media studies, and sociology, this study develops and validates a theoretical framework for media architecture. It offers adaptable evaluation criteria tailored to the cultural and economic specificities of diverse urban environments.

Media architecture is a dynamic communication system that unites design, technology, and socio-cultural expression. Practical contributions resulting from the research include specific design strategies aimed at enhancing public engagement, facilitating socio-cultural exchange, and reimagining urban spaces through innovative approaches. After comparing the definition concepts of media architecture and engaging in critical dialogue with relevant theories. The study underscores the role of media architecture in shaping urban modernisation, providing a forward-looking perspective for architects, urban planners, and policymakers.

Although the study centres on large Chinese cites, it lays the groundwork for further research in China and abroad by establishing a foundation for the digital transformation of cities and the integration of architectural innovation. Future research recommendations include broadening the cultural and geographical scope, incorporating quantitative validation, and fostering further interdisciplinary integration to investigate the evolving role of media architecture in urban public spaces worldwide.

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List of Abbreviations

Abbreviation	Full Term
AI	Artificial Intelligence
AHP	Analytic Hierarchy Process
AR	Augmented Reality
BSc	Bachelor of Science
GBA	Greater Bay Area
IoT	Internet of Things
LED	Lighting Emitting Diode
MAB	Media Architecture Biennale
MAI	Media Architecture Institute
MIT	Massachusetts Institute of Technology
MR	Mixed Reality
PPS	Project for Public Spaces
SGT	Straussian Grounded Theory
UN-Habitat	The United Nations Human Settlements Programme
VR	Virtual Reality

CHAPTER ONE

INTRODUCTION

1.1 Background

> Media Architecture is a broad term that encompasses the integration of sensors and screens, sonic, visual, and tactile interfaces, materials, and displays, and data capture and display in the built environment. Media Architecture includes, but is not limited to, urban screens, media facades, public projection, augmented reality, interactive multimedia installations, digital signage and way finding, and the physical, social, political, and technical systems and infrastructure that support them. Media Architecture, in its development, integration, management, and use, can support corporate advertisements, data extraction, and civic spectacle. Media Architecture can also serve as a means to foster civic engagement and empowerment, develop appreciation and capacity in art and design sectors, and shape collective identity by directly addressing issues of equity, diversity, and inclusion in both content and form.
>
> (*MAB23*，https://mab23.org/)

> Media Architecture is an increasingly important digital layer in cities all over the world. It is a part of shopping malls, casinos, digital signs and commercials. And it holds great potential as mouthpiece for public voice and a peephole into the heart of government.
>
> (*MAB14*，https://mab14.org/)

As a prominent landmark and symbol of Guangzhou, a major coastal city in southern China, the Guangzhou Tower exemplifies the concept of media architecture through its integration of large-scale displays and dynamic lighting into the urban fabric. Over the past decade, research into media architecture has burgeoned into a significant and dynamic area of scholarly inquiry, reflecting its growing impact on urban experience, communication, and technological innovation.

The Media Architecture Biennale (MAB) is the world's premier event on media architecture, urban interaction design, and urban informatics (MAB, 2023). The evolution in MAB's definition of media architecture is evident in its progressive expansion from commercial and public expression to encompass smart cities, multi-sensory interaction, and social equity. This transformation mirrors advancements in technology and evolving societal needs. The incorporation of IoT, sensors, and multi-sensory interaction technologies underscores the growing significance and deepening integration of technology within media architecture. Media architecture now plays a crucial role in advancing technological integration, broadening application domains, influencing social culture, and fostering interdisciplinary collaboration, thereby assuming an increasingly pivotal role in the urban environment.

Notable differences and developments exist between the MAB's 2014 and 2023 definitions of media architecture, particularly regarding conceptual depth, scope of application, and social impact. Firstly, in terms of conceptual breadth and depth, the 2023 definition is more comprehensive and detailed. It elaborates on how media architecture integrates sensors, screens,

acoustic, visual, and tactile interfaces, as well as data capture and display technologies to enable diverse applications. This definition not only covers specific forms such as urban screens, media facades, public projections, and augmented reality but also addresses the social, political, and technical infrastructures underpinning media architecture. In contrast, the 2014 definition is more concise, focusing primarily on the role of media architecture as part of the digital city, particularly in commercial and public communication contexts, such as digital signage and advertising in shopping malls and casinos. It also briefly mentions its potential as a platform for public voice and government transparency. Secondly, regarding the scope of application, the 2023 definition encompasses a broader range of fields. It highlights not only commercial uses but also emphasizes the role of media architecture in civic engagement, the arts, and design, and its potential to promote social equity, diversity, and inclusion. In contrast, the 2014 definition is more focused on commercial and basic public communication functions, with less attention given to broader social applications and impact. Finally, in terms of social impact and functionality, the 2023 definition delves deeper into the influence of media architecture on social and political levels. It underscores its role in empowering citizens, fostering collective identity, enhancing art appreciation, and developing design capabilities, while also directly addressing issues of social equity, diversity, and inclusion in both content and form. Conversely, although the 2014 definition acknowledges media architecture's potential as a channel for public voice and a tool for government transparency, it does not explore its broader social and cultural impacts in depth. Overall, the 2023 definition presents a more comprehensive and profound perspective, highlighting the multifaceted nature and social impact of media architecture, whereas the 2014 definition focuses more on its commercial and basic public communication applications. The evolution in the definition of media architecture reflects its expanding scope and growing influence.

> *The utilization of specific categories of media namely those based on information technologies in the design of architectural elements that can convey their own dynamic information or prompt transient sensorial experiences*.
>
> (Hespanhol, 2017, p.54)

In addition to the discussion of media architecture at MAB's conferences, another contribution of MAB lies in the range of publications on media architecture produced by its members. MAB published the definitive books on media architecture, *Media Architecture Compendium VOL.1* and *VOL.2* in 2017 and 2023, respectively, essentially laying down a part of the results of media architecture research. These two books explore media architecture on two distinct levels. On one hand, they analyse media architecture from the perspectives of definitions, theories, motivations, methods, governance, and concepts as articulated by the Media Architecture Biennale. On the other hand, they examine media architecture from a practical standpoint and investigate various types of practices and construction classifications in the field. The definition proposed by Hespanhol, one of the main authors of both books and a professor at the University of New South Wales, has gained some achievements in the field of media architecture studies.

Media architecture has become a common construction phenomenon in the world (Tomitsch, 2015: 37), especially in some economically developed cities in Asia, such as Shanghai, Seoul, Tokyo, Singapore, Etc (Lee, 2016; Chang, 2017; McArthur, 2018; Schielke, 2021). The screen becomes a

material for constructing the city (Hoggenmueller & Wiethoff, 2018). The phenomenon of the urban screen impacts spatial dimensions and constitutes an extraordinary spatial experience (Primasari & Lubis, 2013). According to McLuhan, new media will not change the old media but will change the way that things are viewed (McLuhan, 1994). The media screen makes the architecture different from the traditional way of viewing and also changes the understanding of space (Papaconstantinou, 2006; Palomo et al., 2022). We live in an age of screens (Hunter, 2011; Sohn, 2018), which fill our surroundings and require us to process hundreds of pieces of information, both images and text, in front of them. This research endeavors to explicate and scrutinize how digital displays incorporated into architectural frameworks impact public interaction and perception within urban contexts. The exploration of the intricate nexus among screens, architecture, and public spaces constitutes the crux of this research, which accentuates a meticulous examination of the medium, urban milieus, and human perspectives.

1.1.1 **Media Shaping Public Perception and Urban Public Space**

> There are two ways to approach behavioral addictions: eliminate or harness them.
>
> (Alter, A., 2017, p.295)

Architecture has become a powerful medium that shapes public perceptions of urban culture and space through its representation and interaction on social media. The Guangzhou Tower, a landmark emblematic of Guangzhou, maintains a vibrant presence on social media platforms, largely due to its changing content and dynamic lighting schemes. During city festivals or holidays, it is common to observe individuals disseminating images of the Guangzhou Tower on social media platforms. The facility with which images of the tower are captured and shared creates new realms, both virtual and real, that reflect the intricate interplay of cultural, commercial, and ideological forces shaping the distribution of images (Favero, 2014). This phenomenon delineated above conceptualizes architecture as a product of a logical relationship that extends beyond the mere structural, where the screen on the building evolves into a screen within a "screen" (Best, 2004; Allen, 2009; Casetti, 2023). This interaction between the interior and exterior spaces of the screen cultivates a perception of environmental space (Abudayyeh, 2021), which, in turn, profoundly influences the locale, shaping the conceptualization of urban spaces and visions of the environment.

People's attachment to the screen has reached an almost obsessive level. Some people have no idea about the world inside and outside the screen through specific technical means (Hay, 2012, p.7). In the composition of contemporary environmental design, photoelectric media such as screens occupy a more and more critical position. With the continuous evolution of technology for screens and buildings in cities, the concept of the media city has emerged (McQuire, 2008; Mattern, 2015). Both the city and its architecture emerge as mediums for the transmission of diverse messages, reflecting a complex interplay of spatial and perceptual dynamics. New information technologies are affecting our urban environments (Sheikh et al., 2021). Marshall McLuhan says the medium is an extension of the human (McLuhan,1994). It is because the screen extends the function of the building on a visual level that research understands that the screen may an extension of the building.

1.1.2 Media Architecture Integrates Digital Technology to Enhance Experience

In the discourse of architectural evolution, the rise of media architecture emerges as an inevitable response to the changing dynamics of urban public spaces. Robert Venturi, an American architect and theorist notices that “less is boring” and that “vulgarity is often more vital and dynamic” (Venturi, 1966). Venturi’s influence is still felt today, the cities and buildings that developed after modernism are no longer static and in motion but chaotic and polymorphous overlaps. Media architecture with screens became civic landscapes that could be engaged with, furthering this complexity and ambivalence (Panagiotopoulou et al., 2018). Urban-scale screens reveal images that become beloved spectacles (Jeon et al., 2009; Arcagni, 2010; Zhang, 2023). In Victoria Harbour, Hong Kong, people are excited to share footage of urban scale media architecture and express their admiration for the prosperity of the city. The inevitable form of urban development, where the chaotic vitality of the city and the development of building technology have brought today’s cities to a complex and hybrid state (Brotchie, 2017). Media architecture is one of these influential trends (Fei, 2005; Brajkovic, 2017; Ptichnikova, 2019), and its convenient adaptability is the basis for people’s involvement in transforming the architectural image.

Despite the polarized views concerning media architecture, its profound imagery and visual intensity are undeniably suited to the rhythms and demands of modern daily life. In a subsequent study by Venturi and other researchers, they underscored the importance of symbolism and signed in architecture, emphasizing how these elements cater to a culture steeped in media and consumerism (Brown et al., 1972). Jencks extends this notion by exploring how post-modern architecture, through its eclectic and iconic forms, communicates complex cultural narratives (Jencks, 1978). Koolhaas, in his depiction of “Junk Space”, critiques the overwhelming and often chaotic visual environment of contemporary spaces but inadvertently highlights the adaptability of media architecture to these conditions (Koolhaas, 2002). Furthermore, the “Junk Space”, namely, areas characterized by transient, chaotic, and parodic aesthetics, aligns with the transient and flashy nature of media architecture (Neto, 2019; Yazici, 2023). This architectural style leverages digital technologies to transform buildings into interactive canvases that reflect and respond to the digital zeitgeist, thereby redefining the experience of the cityscape (Urbanowicz & Nyka, 2012; Halskov & Fischel, 2019). In Koolhaas's early research, the Harvard Design School Project on the City highlights a focus on the cities of southern China (Chung et al., 2001). This focus was later contextualized within modern urban architecture and society in the Greater Bay Area (GBA) through Sun's subsequent research (Sun, 2021), offering a fresh perspective on the field of media architecture in China.

> While media architecture has the potential to radically affect the social space into which it is introduced, much research in the field was initially carried out through experimental installations in public spaces...
>
> (Hespanhol, L., & Dalsgaard, P. , 2015)

Media architecture not only transcends traditional forms by integrating LED screens, projections, and interactive surfaces to engage the public in real-time but also represents a necessary adaptation to an increasingly digital society. Media consumption and interaction predominantly occur in public, shared spaces, turning architecture itself into a medium of communication and

interaction (Drucker & Gumpert, 1991; Ackermann & Reiche, 2016). Thus, media architecture is a crucial development in the redefinition of public spaces, adapting urban environments to the rhythms and demands of contemporary urban life (Hespanhol & Dalsgaard, 2015). The pervasive visuality and dynamic imagery of media architecture both reflect and enhance the multisensory experiences expected in modern urban settings (Berrett,2018).

1.1.3 Media Architecture Create Urban Landmarks to Enhance Attractiveness

Media architecture serves as a powerful tool for constructing the nighttime image of cities. The nocturnal urban landscape, characterized by its complexity and unique challenges, invites creativity and inspiration through the interplay of light and darkness, thereby shaping collective imagination (Avilés, 2016; Gwiazdzinski, 2018). Unlike its daytime counterpart, a city's nighttime image is significantly influenced by artificial lighting, impacting the urban environment (Gwiazdzinski, 2014). The strategic use of colored light in media architecture profoundly affects this nocturnal imagery (Efimov, 2021; Schielke, 2023). However, concerns about the negative effects of such installations on urban nighttime environments persist (Zielinska-Dabkowska, 2014). Despite these challenges, media facades create dynamic and interactive urban landmarks, enhancing the city's attractiveness (Moghaddam, 2016). Furthermore, media architectural surfaces can stimulate cultural engagement, inviting deeper cultural sensibility among residents and visitors alike (Gasparini, 2017).

1.1.4 Brief

Media architecture represents an emerging architectural phenomenon, characterized by its mediated nature. In this context, the architecture of urban public spaces is imbued with information through the vivid visual vigor of media architecture, transforming the cityscape into a 'media city'. Particularly at night, when the city itself acts as the medium, it exudes significant vitality and allure, mirroring the complexity and demands of modern urban life. The advancement of LED technology and screen transmission not only produces profound imagery and potent visual effects but also aligns well with the rhythms and requirements of contemporary life. Media architecture plays a pivotal role in facilitating these transformations. Moreover, the widespread use of screens in media architecture not only signifies a shift from handheld electronic devices such as mobile phones to the facades of urban buildings but also underscores their compelling visual appeal.

1.2 Objectives

This study aims to investigate the role of media architecture in enhancing public space interactions and influencing perceptions of place and the visual representation of urban public spaces, with a focus on nocturnal urban environments. According to the background, the emergence of media architecture has become a notable phenomenon over the past decade, especially observed in Asia. This research will initially seek to identify the drivers behind the surge of media architecture in Asian countries, including China, through a historical and onsite investigation. Subsequently, it will delineate the factors contributing to this phenomenon from architectural, urban, geographic, historical, and humanistic perspectives, and then integrate theoretical insights from communication and art, enhancing the comprehension of these dynamics.

1.2.1 Expected Results of the Research

Through this research, it is hoped that it will attempt to study the architecture and communication. Perhaps this research will become a book English and Chinese users to read about media architecture. It will find positive references for media architecture in the design and communication of modern cities and provide the world with Chinese experiences of media architecture. At the same time, it will offer a framework theory for designing, evaluating and guiding media architecture as saturated as possible to aid future research and design of media architecture in China or other Asian countries.

1.2.2 Desirable Contribution to the Professional Field

This research makes its contributions to the field of media architecture through three distinct avenues:

- Contributing to design practice: The survey findings on Chinese expectations of media architecture provide a theoretical foundation for architects, designers, and lighting specialists in China, and potentially across Asia. These insights support the practical application of media architecture in these regions.
- Expanding the boundaries of disciplinary specialisation: This study seeks to bridge the fields of architecture, communication, art, philosophy, urban planning, and management, developing a theory from a unique perspective. This approach potentially broadens the scope of existing theories and offers valuable insights for scholars in urban studies, architecture, and communication.
- Providing a personalised experience: While international academic institutions have established important precedents in media architecture, its definition remains fluid and subject to ongoing debate (Chang et al., 2019; Colangelo et al., 2022). This research explores the evolving definition and other facets of media architecture, offering a distinctive perspective for scholars in related disciplines.

1.3 Research Question

What do Chinese people expect of better public spaces created by media architecture in Chinese cities?

Based on the key questions above, the problem can be broken down into the following points:

- How do media architecture affect the perceptions and expectations of different user groups such as tourists, residents, and designers in China?
- What are the differences in design and management strategies for media architecture in similarly situated Chinese cities?
- How should media architecture strike a balance between commercialization and promotion and urban cultural heritage?

1.3.1 Research Object

To highlight the role and development of media architecture in the development of China's urban public spaces and changes in the building industry over the past decade and beyond.

1.3.1.1 Media Architecture and the Construction Industry in China

Media architecture construction trends in China reflect the needs of China's urban development and a booming construction market. Media architecture integrates media, information, and communication technologies with built environments, transforming static structures into dynamic, interactive, and engaging spaces (Houben et al., 2017; Halskov & Fischel, 2019; Wiethoff et al., 2021). In China, this integration has seen significant advancements, especially with the rapid urbanization and technological development (Lin & Zhang, 2022; Chen, 2023). The concept of media architecture, which encompasses the design of spaces for communication and information exchange, has evolved in response to technological progress and societal change (Bochkareva, 2022). Meanwhile, this evolution has been particularly pronounced, with the rise of connected media facades reflecting the country's cultural tradition, urban design, and political system (Schielke, 2021). This development is part of a broader transformation in China's architectural landscape, which has shifted from traditional to modernist styles (Denison, 2008). The professionalization of architecture in China, driven by economic reform, has also played a role in shaping the country's urban environment (Kvan, 2008). Media architecture is developing in China as one of the trends of architectural changes mentioned above (McArthur, 2018).

> Many cities in China now have plans to develop as so-called 'Smart Cities'. Smartness is not however necessarily considered in relation to media architecture and urban screens.
>
> (McArthur, I., 2018, p.5)

In addition, China occupies a leading global position in producing media architecture equipment, covering several key technologies and equipment manufacturing. By 2023, China's share of the global LED market will be about 45%-50%, China's LED market size was US$2.99 billion and is expected to reach US$13.62 billion by 2032 (IMARC Group, 2024). In terms of LED displays, the global market size was US$1.64 billion in 2023 and is expected to reach US$3.1 billion by 2032, with a CAGR of 7.3% (IMARC Group, 2024). Chinese display technology companies such as BOE Technology and Hisense are prominent in the global market accounting for 44.75% (Mordor, 2024). These companies are leading the way in technological innovations such as transparent displays and 8K displays, which are widely used in areas such as media architecture automotive, smart home, and education (Dataintelo, 2024).

The rapid urbanisation and development of the LED display technology in China have driven the rise of media architecture within the country. China occupies an important position in the global LED technology and display market and is particularly strong in manufacturing and exporting, aiming to not only meet domestic demand but also provide a large number of LED and display products for the global market. These factors together have contributed to the widespread use and rapid development of media architecture in Chinese cities, giving them a new look and further enhancing their modernisation and internationalisation.

1.3.1.2 Public Space in China

Public spaces are recognized by various international organizations for their significant social, economic, and environmental roles. The United Nations Human Settlements Programme

(UN-Habitat) defines public spaces as follows: “Public spaces provide room for social and cultural interaction and can foster a sense of belonging and pride in an area. A public space that is open to all, regardless of ethnic origin, age or gender, provides a democratic forum for citizens and society”, emphasizing its importance in promoting social inclusion, health, economic vitality, and environmental sustainability (Elmlund et al., 2018). The European Charter for Public Space emphasizes the public interest in such spaces, insisting that they should be inclusive, accessible, multifunctional, and jointly managed by public and private stakeholders (Garau et al., 2015). The Project for Public Spaces (PPS) defines public space as “a place that offers people the opportunity to gather, engage, work, and play”, stressing that these spaces should be vibrant, inclusive, and capable of fostering community building and social interaction (Crabill, 2009).

In China, public space is typically defined as an open area accessible and usable by the public (Li & Zhang, 2007). In urban planning and policy documents, public space is considered an essential component of urban development (Wu & Ye, 2020). For instance, the Urban Planning Law of the People’s Republic of China and the Urban Public Facilities Planning Code provide clear guidelines for the planning and construction of public spaces (People’s Republic of China government, 2022). Public spaces are expected to not only meet the daily needs of residents but also enhance the quality of the urban environment, increasing the city’s attractiveness and competitiveness.

Public space has a special significance in Chinese culture. In China, influenced by traditional culture, public spaces such as markets, temple fairs, and community squares typically have strong functions of social interaction and community. Modern urban public spaces continue this tradition, serving as places for leisure and centres for social and cultural activities (Fu & Cao, 2019). In contrast, in Western countries, public spaces are more influenced by Enlightenment ideas and democratic spirit, emphasizing citizen participation and public discussion. For example, European café culture and American community activity squares have strong functions of both public discussion and community (Rojon & Pilet, 2021). Habermas emphasizes how physical spaces (such as teahouses, cafés, and bars) evolve into public spaces with social and political significance, facilitating the intermingling of private and public spheres and social interactions (Habermas, 2020). Habermas's theory of public space in China is characterized by fragmentation, contextualization and institutional symbiosis. The “publicness” in the Chinese context is closer to the negotiated model of state-society embeddedness than to the confrontational logic of Western civil society.

While Chinese public space predominantly focuses on social interaction and commercial functions, with government-led planning, public space in Western countries emphasises civic engagement, public discourse, and cultural conservation. There are many similarities between China and other countries and international organisations in the definition of public space, especially in terms of openness, multifunctionality and social interaction. Comprehending these similarities and differences is conducive to the global sharing of experiences and optimal practices, thereby facilitating more effective planning and management of public space and augmenting the quality of urban life. The specificity of public space in China has also contributed to the development of media architecture.

1.3.2 Scope of the Study

To address the research questions posed, this study will investigate the dynamics of media architecture across various dimensions.

- Field research will be conducted in representative Chinese cities to thoroughly understand the manifestations and operations of media architecture, including observing and documenting the architectural carriers, content displays, geographical settings, and communicative practices associated with media architecture.
- The study will select exemplary cases of media architecture in Chinese public spaces for digital analysis. By applying specific parameters, the research aims to assess the performance of media architecture in urban settings and delve into its socio-cultural underpinnings.
- Comprehensive interviews and surveys will be undertaken with stakeholders involved in the creation and critique of media architecture in China. In this study, questionnaires, assessments, and interviews will be utilized, and the data gathered will be analysed methodologically.

From these research angles, the study seeks to systematically explore Chinese public attitudes toward and expectations of media architecture, examining underlying causes from the perspectives of urban planning, architecture, geography, imagery, and communication. This methodological approach aims to develop a theoretical framework.

1.4 Practical Reflection

The researcher, an architect and university lecturer born in Guangzhou, has witnessed significant transformations in China's urban landscapes throughout their lifetime. Engaged in the field of architecture and as an educator in architectural design, the researcher has developed a deep interest in urban public spaces, particularly in the phenomenon of screen-covered cities. Observations of urbanization in China's coastal cities, exemplified by Guangzhou, reveal a progression towards capitalization, marketization, modernization, and digitization. The researcher views this media transformation within the cityscape as profoundly compelling.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Media Architecture is a new medium of urban expression, and the Media Architecture Institute (MAI) was founded in 2009 to research media architecture. The organization continues the work of the Media Architecture Group in London and Berlin and has been organizing Media Architecture Biennales (MAB) and related academic conferences around the world for over a decade. More importantly, members of the association have published a series of specialized academic papers and books, including works by Haeusler (2007, 2009, 2010, 2011, 2017, 2023), Barker (2010), Tschetter (2011, 2012), Tomitsch (2011, 2012, 2017, 2023), Hespanhol (2017, 2023), Callender & Dell'Aria (2023), and Fredericks (2023). Media architecture is slowly becoming a discipline that is being explored.

Media Architectures grows at the intersection of physical and digital space and need a form of understanding that is beyond traditional architecture and media art/design as it brings up entirely genuine challenges and opportunities (Jenek et al., 2021). Based on MAI's definition of the types of media architecture every year, it is broadly classified into the following media architecture types (MAI, 2023):

- Beyond Commercial Media Architecture
- Spatial Media Art
- Future Trends and Prototypes
- Equitable and Sustainable Media Architecture
- Animated Media Architecture
- Participatory Media Architecture and Infrastructures
- Transmedial Media Architecture

Araujo has summarized the 55 projects that MAB has awarded from 2014 to 2018 and categorized them into distinct species. The main spatial categories are Animated Architecture, Money Architecture, Participatory, and Urban, Spatial Media Art, and Future Trends and prototypes, which is also Hespanhol's classification (Araujo et al., 2021; Hespanhol et al., 2017). In MAB20, De Lange and other scholars extended the themes of their research through the conference, including The Aesthetics and Poetics of Responsive Urban Spaces, Citizens' digital rights in the era of platform ecologies, Playful & Artistic Civic Engagement, Restorative Cities and More-Than-Human Cities (De Lange et al., 2021). The study of MAB23 revealed that scholars have extended the scope of media architecture's attention to the virtual information dimension by combining digital participation and digital citizenship to bring new media architecture values (Overdijk et al., 2023; Wang, 2023).The MAB's changing themes suggest that media architecture's functions and roles are constantly evolving and becoming more relevant to the needs of contemporary cities and residents (Savić, 2023). Based on MAI's definition of the types of media architecture every year, it is possible to broadly categorise media architecture into the types below. As shown in Table 1, this collation helps the researcher further anchor the study to the dimensions, scope, understanding, and reflection of media architecture.

Table 1. Literature Review of *Media Architecture Biennale* (2012-2023)

Title: Media Architecture Biennale

Aspect	*Argument Steps*	*Relevent References*
● *Physical Space Dimension*		
Smart City	City Morphology Transformation	Andersen, 2012; Aurigi, 2016; Stephan, 2018
	City as Media	Colangelo, 2016; Lee, 2016; McArthur, 2018; Parker, 2018
Urban Space	Place Making	Allen, 2012; Korsgand, 2012; Innocent, 2016, 2018; Lodi, 2018; McArthur, 2020; Stores, 2020; Kao, 2020; Gao, 2020; Chung, 2023； Medvescek， 2023
	Spirit of Place	Breinbjerg, 2012; Toft, 2014; Lin, 2020
	Information Landscape	Berrett, 2018; Panaagiotopoulou, 2018
Architectural Construction	Mediatability	Allen, 2012; Miller, 2014; Wouters, 2016, 2020; Boon, 2020; Huang, 2023
	Esthetics	Sade, 2014; Fritsch, 2016
	Materials and Equipment	Van, 2014; Cordero, 2018, Hoggenmueller, 2018; Kjser, 2020
Media politics	Act as Regent	Dada-Robertson, 2012; Ergin, 2018; Schielke, 2023
	City Management	Colangelo, 2012; Korsgoard, 2014; Fredericks, 2016; Scully, 2018; Melzer, 2020; Jiang, 2020; Biedermann, 2020
● *Perceived Participation Dimension*		
Public Participation	Digital Citizen	Sondergoard, 2012; Wouter, 2018; Van, 2018; Wang, 2023; Nirschl, 2023； Nazareth， 2023
	Hyper Engage	Hespanhol, 2012, 2023; Memarovic, 2012; Caldwell, 2014; Colangelo, 2014; Offenhuber, 2020; Gonsalvers, 2020; Zhang, 2023
	Minority	Clarker, 2016; Wouter, 2018; Anderson, 2020; Gemperle, 2023
Perceptual Interaction	Sensory Involvement	Ubranowicz, 2012; Van, 2018; Behre, 2018; Economidou, 2020; Grubel, 2020; Rhein, 2023； Berber， 2023
	Sound	Berinbjerg, 2012; Feams, 2018; Colangelo, 2023
Light Environement	Light Storytelling	Pihlajanienilf, 2012, 2014; Schielke, 2020
	Light Pollution	Zielinska,2014
Hyper Experience	Beyond Perception	Caldwell, 2012; Sotres, 2020
	Beyond Human Beings	Foth, 2018; Pollastri, 2020; Sheilch, 2020; Papageorgopoul, 2020
● *Virtual Information Dimension*		
Systems Enigineering	Internet of Things(IOT)	Willis, 2012; Hoggenmueller, 2018; Deboer, 2018; Grubel, 2020
	Networked Public Display	Memarovic, 2014, 2016; Savic, 2014; Ji, 2018, 2020; Gonsher， 2023
	Human-Computer Interaction(HCI)	Hoggenmueller, 2016; Caldwell, 2016
	Network Platform Application	Cordero, 2018; Wang, 2018; Araujo, 2020； Spencer, 2023 ； Tzortzi， 2023
	Immersive Technology Application	Kostopoulou, 2018; Shokrani, 2020; Jenek, 2020; Boffi, 2020; Grubel, 2020； Overdijk, 2023
Information Design	Data Text	Offenhuber, 2014; Didakis, 2018; Paananen, 2023
	Software Development	Wiethoft, 2014; Fortin, 2016; Spiess, 2018; Araujo, 2020

Source: https://dl.acm.org

Table 1 The literature review categorises 106 papers from the last decade of MAB2012-2023, reflecting the most recent changes in the focus of the conference on media architecture. The dimensions of the attention of MAB to media architecture can be categorised into the physical space, the perceived participation and the virtual information aspects. The in-depth literature review of this conference provides guidance for subsequent literature reviews of the thesis.

Beyond the MAB, scholars worldwide have shown increasing interest in exploring the definitions and applications of media architecture, as evidenced by Table 2, which presents insights from some leading scholars in the field over the past five years. Scholars have extrapolated the definition of media architecture from their own perspectives and levels of research.

Table 2. Collection of Definitions of Media Architecture (Last Five Years beforer 2024)

Definition	Institute / Country
Media architecture is not only a new form of architecture, it opens up new dimensions of place-making and spatial communication in the city, becoming a portal and interface between the physical and virtual worlds (Chang et al. 2019, p.33).	Central Academy of Fine Arts, China
Media architecture can be understood as materials or objects with dynamic properties, such as interactive light sources or moving elements, which embody physical space at the architectural scale (Jenek et al., 2021, p.204).	Queensland University of Technology, Australia
Media Architecture is an interdisciplinary field that combines Interaction Design (IxD), Architecture, Human-Computer Interaction (HCI), and practice-orientated urban prototyping. Media Architecture is committed to the responsible integration of new technologies and digital media into the city (Wiethoff et al., 2021, p.9).	Ludwig-Maximilians-University Munich, Germany
Media architecture can be defined as a form of architecture that transforms the traditional functions and perceptions of buildings by projecting digital technologies and moving images onto the building façade, making it a medium for communication, narrative and experience (Venetsianou, 2022).	University of West Attica, Greece
Media architecture is a type of art whose works are created and presented by modern information and communication technologies, mainly such as videos, computers, multimedia technologies, and the Internet. Media architecture includes various objects (buildings, structures) with any form of information, and interactive and dynamic image technologies, which are designed for information exchange in the urban community. Digital data streams invade the space of a modern city, transform it, and unite with it (Semenyuk et al., 2022).	Eurasian National University, Kazakhstan
Media architecture as a practice and field of knowledge is situated in a broader area of convergence between architecture and digital technologies (Savić, 2023, p.88).	Vienna University of Technology, Austrian
Media Architecture, as a new form of architecture that merges spatial and digital media, has the potential to provide participatory experiences, influence the narratives of public spaces, and facilitate the exchange and sharing of knowledge (Ferrari & de Souza, 2023, p.24).	University of Santa Catalina, Brasil
Media architecture is predominantly reflected in offline media architecture, including interactive installations, traditional Tang culture-inspired light fixtures, urban screens, media facades, and public projections (Zhang, 2023, p.164).	Delft University of Technology, Netherlands

Media architecture is understood as an architectural design that combines multiple media elements, aiming to increase the relatability of complex roles and identities by layering different media elements and creating a sense of shared ownership of place at the architectural level, combining the built environment with the emotional context (Medvescek et al., 2023, p.173).	Emerson College, United State
Media Architecture is an innovative form of combining digital media technology and architectural design, which creates multi-sensory environments capable of influencing people's emotions and behaviours by incorporating technological elements such as digital displays and interactive screens in architectural spaces (Berber et al., 2023, p.146).	The Bartlett School of Architecture, UCL, United Kingdom

After synthesizing the various definitions of media architecture, it is evident that while there are commonalities, each scholar also highlights different aspects of the concept. Integrating architecture and digital technologies is a recurring theme across multiple definitions. Hespanhol and Savić emphasize the application of information technologies in architectural design, showing how these technologies enable architectural elements to convey dynamic information or create transient sensory experiences (Hespanhol, 2017; Savić, 2023). Similarly, Venetsianou and Ferrari & de Souza point out that media architecture not only transforms the traditional functions and perceptions of buildings but also turns them into mediums for communication, narrative, and experience, with the potential to enhance public space narratives and facilitate the sharing of knowledge (Venetsianou, 2022; Ferrari & de Souza, 2023).

The role of media architecture in urban environments is another widely discussed aspect. Chang suggests that media architecture has opened up new dimensions of place-making and spatial communication in cities, serving as a portal and interface between the physical and virtual worlds (Zhang, 2019). Semenyuk and Zhang highlight the function of media architecture in information exchange within modern cities, describing how digital data streams invade and merge with urban spaces, and how media architecture plays a role in conveying and showcasing cultural elements, such as traditional Tang culture (Semenyuk et al, 2022; Zhang, 2023).

Interactivity and sensory experiences in media architecture are also focal points for several scholars. Hespanhol and Dalsgaard identified seven modes of interaction in media architecture by analyzing interactive interfaces and the relationships between humans and space: Shadow Playing, Remote Control, Smooth Operator, Soapbox, Amusement Park, Swarm, and Automatic Gate (Hespanhol & Dalsgaard, 2015, p. 611). Building on this, Verhoeff explored three additional modes of mediation in interaction: Reflections: The Screen as Mirror, Connections: The Screen as Interlocutor, and Projections: Between Access and Display (Verhoeff, 2017, p. 43). Colangelo later expanded the practical understanding of media-architecture interaction by introducing three more modes: Temporary Activist Interventions, Permanent Iconic Media Channels, and Grassroots Do-It-Together Media Architecture (Colangelo, 2021, p. 515). Jenek describes how media architecture embodies physical space at an architectural scale through dynamic interactive light sources or moving elements (Jenek et al, 2021). Berber further explores how media architecture creates multi-sensory environments by integrating digital displays and interactive screens, thereby influencing people's emotions and behaviors (Berber et al, 2023). In addition, it is important to

note that interactive artworks on large urban screens provide a platform for public co-creation, making their use more egalitarian, but varying levels of interactivity affect audience agency, often overlooked by programmers (Gould, 2015).

The interdisciplinary nature of media architecture is clearly emphasized in several definitions. Wiethoff states that media architecture combines interaction design, architecture, human-computer interaction, and practice-oriented urban prototyping, highlighting the responsible integration of new technologies and digital media into cities (Wiethoff et al, 2021). Medvescek adds that media architecture enhances the relatability of complex roles and identities by layering multiple media elements and creating a sense of shared ownership of place at the architectural level (Medvescek et al, 2023).

In summary, media architecture is understood as an emerging form that merges digital media technology with architectural design. Its impact extends beyond altering the physical characteristics of buildings; it also enhances interactivity and narrative functions within urban spaces, fosters public engagement, and significantly influences sensory experiences and information exchange in the urban environment. The interdisciplinary nature of this field affects how people perceive and use spaces at multiple levels, bringing new opportunities to modern cities.

2.2 Theoretical Background: Mediatization

In order to better understand media architecture, this section digs into the history and development process of media architecture generation to find out the relevant reasons and clues.

Architecture and its elements have emerged as a means of communicating narratives to users. Some early studies on architectural media laid the groundwork for the practice of architecture and construction. What happened was the high energy consumption of office buildings and the information expansion of temporary space, which inspired the possibility of buildings moving to media (Orazem, 1995). Subsequently, Akiwumi-Assani proposed architecture as a multimedia terminal. The development of the rapidly growing multimedia and communication market gives some instructions for future architecture (Akiwumi-Assani, 1996). Fei understood architecture as an existence beyond the media in the city because it is a mixed experience path in perceiving architecture. This scholar emphasized the media attribute of architecture in subsequent articles (Fei, 1999, p.12; 2005, p.212). Taking the corridor as the medium, Marshall illustrates the hidden and surprising relationship between architectural space and contemporary American novels and shows that architectural elements are used as the medium to understand Modernist Literature (Marshall, 2013). On the opposite side, modernist literature is equally the concrete expression of architectural media. Like Marshall, there is Wolf's view that printed stories, images, and film can become the representative media of imagination. The cognitive basis of aesthetic illusion is the reflection on Architecture (Wolf, 2013). Caldwell started from the media history of architecture, from the hieroglyphs of Egyptian temples to the stained glass windows of the Gothic cathedral, the giant murals of Westminster Abbey, to the facade of the baroque church, and looked at architecture as a mixed media itself (Caldwell, 2017, p.61).

The idea of architecture as a medium to express a message was the beginning of the emergence of media architecture, which is called mediatization in the context of communication (Nie et. al. 2014; Corner, 2018). Research on environmental media can trace back to the Media Laboratory of the Massachusetts Institute of Technology (MIT) in 1998. “AmbientROOM” explores integrating ambient media with architectural space (Ishii et. al. 1998). The environment becomes a medium, and the subdivisions of these media collectively make up the environment (Bochkareva & Likhachev, 2022). In subsequent studies, scholars have identified mediated relationships expressed between literature, film, photography, images, games, and architecture (Eisenma, 1992; Fei, 1999, 2005; Rattenbury, 2002; Marshall, 2013; Gerber, 2020). The elements in the environment and the expressive environment together form the spokesperson for the expressive environment. Dodd has provided a summary of the three states of architecture within the era of media hybrids, the technology used in the design process (e.g., architectural design software, architectural virtual display software), and people experiencing architecture and the environment through mass media (Dodd, 2015). Caldwell delves into the third state in the view through media architecture, arguing that from ancient Rome to Egyptian temples and Gothic cathedrals, media is embedded into the surface of buildings and tells stories to their inhabitants (Caldwell, 2017). The utilization of architecture and environment as mediums reflects the multidimensional interactions and expressions within the process of mediatization, highlighting the critical role of spatial design and technological integration in conveying information and shaping experiences.

Mediatization is essential in reconsidering the role of media in society, reflecting how architecture itself becomes a medium (Hjarvard, 2013; McLuhan, 1964). Chen (2022) discussed how digital media façades serve both aesthetic and communicative purposes, such as advertising and social visualizations (Foth et al., 2015), with their integration into architecture offering new communication avenues (Wouters et al., 2018; Jenek et al., 2021). This evolution, driven by technological advancements and the demands of modernity, reshapes urban public spaces (Jerković-Babović et al., 2020; Brabers, 2022). The design of media architecture plays a critical role in this transformation (Dalsgaard & Halskov, 2017; Foth & Caldwell, 2018).

2.2.1 Mediated Urban Public Space and Architecture

The media-driven nature of architecture inherently shapes the media-driven of the urban public space (Rodgers, 2014; 2021; Saito, 2018). Australian scholar Scott McQuire, who has always been concerned with the doctrine of the mediated city, argues in *Media City* and *Geographic media: the future of network city and public space* that advances in media technology have led to today's urban spaces being visually dominated by graphics, fragmented and non-linear in form and reading (McQuire,2008). Throughout history, the fragmentation and non-linearity of forms and reading styles, facilitated by the medium of electricity, have transformed the urban landscape into a metaphor for the forces of modernity, further extending the commodification of urban space (McQuire,1999; 2002; 2004; 2009; 2011; 2016; 2019). In *A Communications Theory of Urban Growth*, the American scholar Meier argues that communication is rooted in the entire process of urban economy and is directly involved in the process of urbanization, with the role of the media being the first to embody the economic dimension (Meier,1962). Chinese scholar Zhou’s thinking on architecture based on communication studies has examined the media characteristics of architecture from the perspectives of audience and message (Zhou, 1999; 2001). These scholars

and theories establish the importance of media architecture as a medium of urban expression and speak of the importance of media cities and media architecture from an economic, cultural, and political perspective. More importantly, this part of the research clarifies the history of the development of media architecture and illuminates the historical and academic lineage for the study of media architecture. To further connect the relationship between the existing architectural knowledge map and media architecture, in the next phase of the research, three clues to how the screen as a medium expresses the city, space, and architecture will be identified through studying the architectural background.

Research on the experience of media architecture in urban public space includes both online and offline dimensions, and therefore research on the performance of media architecture in public space should be expanded to discuss different dimensions. When experiencing and interacting with media architecture in urban public space, many scholars refer to the process as a game. A significant proportion of the completed media architecture resembles some of the new media art in the form of interaction, and the presentation and content of images resemble games, so it makes sense to view media architecture as games in the spatial dimension. As a central element, media architecture expands public space, leading to the transformation of the urban experience (Allen, 2012:9). Innocent focuses on exploring the relationship between games, place settings and public space in the design and development of an “urban art environment”, and focuses on the interactive behaviour of place games attached to media architecture in a later paper (Innocent, 2016; 2018). Kao evaluated the impact of the framework on designing media architecture artfacts for placemaking showing the opportunities and challenges for media architecture to support placemaking (Kao et. al., 2021). Another level of understanding of place creation is to establish an interdisciplinary methodology through the study of communication strategies, information design, and interactive systems (Sotres, 2020). Innocent links the creation of cities by media architecture to the playfulness of artistic environments, seeing media architecture as tools to design and develop playful places and public space connections. The relationship between playable and intelligent cities is highlighted in another subsequent publication, where decoding cities reconfigures places around the established framework of play, using the interactive techniques of media architecture and the design process to mix in urban-scale play infrastructure for analysis (Innocent, 2016; 2018). Due to the specificity of media architecture interaction, which can be formed even when there is a long distance between the objects of interaction, Lodi is focusing on the gap between the physical and digital spaces of the world, updating the city’s traditional ideas about playgrounds through the study of media architecture (Lodi, 2018). The use of sites and buildings to interact with places is an important way of embodying the spirit of place, and Liu continues this view by analyzing the rationality of this act through case studies, while Stores goes on to experiment with the renewal of historic derelict city centres from a methodology of collective memory to create communication strategies, information design and interactive systems (Liu, 2021; Sotres, 2021). Breinbjerg began to examine the impact of media architecture on the place from the perspective of sound and perception, which also includes scholars such as Fearns and Economidou, with sound as one of the critical elements of interaction and as one of the elements of media architecture evoking the poetry of place (Breinbjerg, 2012; Fearns, 2018; Economidou, 2021). In interacting with media architecture, Toft sees the urban digital gallery as an opportunity to reclaim public space from the digital elements of media urban spatial

determinism. It sees the emotional quality of urban digital artwork as the interface between 'people' and 'technology'. Urban digital galleries are proposed to enable public space to be reclaimed, re-inhabited, and re-evaluated by establishing situations of presence (Toft, 2014), while Kao emphasized the importance of the text of place in the process of interaction, and Wouters and Gonsalves explored the interaction in terms of both online and offline avenues of public engagement (Wouters, 2018; Kao, 2021; Gonsalves, 2021). After the interaction process was completed for the media architecture assessment, Wouters looked at the physical characteristics of the building, its ability to coexist, expand space, respond to environmental changes, and communicate architecture and the environment (Wounters, 2018), while McArthur emphasized more on government, urban planners and community participants for participatory testing of media architecture for interface assessment (McArthur, 2018).

2.2.2 New Audiences in Urban Public Space

The collaboration between digital media art and urban public space gives the audience in the city a new tool to communicate with the urban space. New media in urban public spaces create new environments, which in turn to new audiences. The evolution of digital media has led to a redefinition of audience participation, with new interactive solutions creating active communities, the interactive environments must bring about new audiences (Nemirovsky, 2003). The way that these media are experienced has significantly impacted people's communication ways and their physical practices and affective orientation (Dekker, 2009). New media in urban public spaces create new environments, which in turn give birth to new audiences, and Digital media construct a new definition of the urban public sphere (Braun, 2011; Rasch & Waal, 2014). This definition creates a different feeling for the audiences in urban public spaces. The digital media content of media architecture has a unique ability to inform, entertain, and promote interactions among the audience (Albrecht, 2014; Berrett, 2018). The audience has also created a new method to interact and communicate with the architecture and city.

The rapid development and widespread application of digital media technology has made it an indispensable part of urban public spaces, transforming traditional cityscapes into interactive environments. Innovations such as large digital screens, interactive kiosks, augmented reality (AR) installations, and smart city technologies not only create engaging experiences that capture the attention of passersby but also encourage active interaction with the content (Fredericks, 2019). This shift signifies a redefinition of audience participation: from traditional passive viewing and consumption to more active engagement. Through touch, motion, and mobile devices, audiences can interact directly, enhancing the personalization and appeal of the experience while becoming active participants in content creation and evolution (Gomes et. al., 2023). Furthermore, these interactive environments help to establish positive community relationships in urban spaces. Public art installations that respond to social media inputs or are driven by community contributions allow individuals to contribute to the collective experience, enhancing a sense of belonging and community identity (Urbanowicz & Nyka, 2016). This sense of participation and belonging fosters more frequent and meaningful interactions among community members. Therefore, media architecture not only redefines the way in which audiences interact but also fosters dynamic and highly cohesive urban communities by means of interactive technology.

2.3 Three Clues

The previous part of this chapter elaborated on the narrative and expressive basis of media architecture, i.e. the understanding of everything in space as media, and the creation of new audiences by media-enabled urban public space and architecture, which in turn influences the development of urban public space and media architecture. In the subsequent section of this chapter, the three principal trends in the evolution of media architecture will be further expounded upon in accordance with the historical progression of media architecture. This will lay a theoretical foundation for the ensuing research methodology and identification of research gaps.

2.3.1 From "Advertising Architecture" to "Media Facade"

Media facades represent a contemporary approach to integrating technology with architecture, thus transforming building exteriors into dynamic and interactive displays. These facades utilize building surfaces as large-scale public screens to disseminate information, art, and interactive content, thereby engaging with the urban environment. Media facades have evolved beyond traditional architectural elements to include kinetic, media, and interactive features, enhancing the aesthetic and functional aspects of buildings (Park, 2013). Their implementation presents unique challenges and opportunities. While traditional advertising opportunities may be limited, media facades offer strategic marketing and branding potential that appeals to funders and clients (Wouters et al., 2021). The design of urban media facades requires careful consideration of factors such as content delivery, integration with the existing environment, and adaptability to diverse contexts (Moere & Wouters, 2012). Moreover, incorporating media facades can contribute to energy efficiency and technological advancement in building refurbishment projects (Tovarović et al., 2017). In addition to serving as visual enhancements, media facades facilitate multi-user interactions through live video and mobile devices, fostering community engagement and social connectivity. By integrating architecture, technology, and interactivity, media facades generate immersive encounters that obscure the demarcations between physical and digital realms, ultimately redefining the connection between individuals and their urban environment.

Under the influence of postmodern thought, architecture has increasingly become a media spectacle in the context of commercialism and entertainment. Guy Debord (1967) described this phenomenon as "the society of the spectacle", where enormous advertisements and signs dominate the modern urban landscape, creating a world of images, consumer goods, and staged activities. Architects of that era also began to reflect on this shift. In the 1970s, Denise Scott-Brown and Robert Venturi and Steve Izenour studied the *Learning from Las Vegas* (Brown et al., 1972), as a medium of communication, where billboards and neon lights became architectural elements. Their work examined how modern cities could draw inspirations from the unique architecture and urban planning of Las Vegas to create compelling cityscapes and commercial spaces.

The concept of "advertising architecture" was first used by Adolf Behne (1996, p. 5) to describe Erich Mendelsohn's Schocken Department Store, designed in Stuttgart in 1928. With the development of modernism and commercialization, consumer culture gradually became the dominant public culture (Saleem et al., 2020), giving rise to the Pop Art movement. Artists, philosophers, and architects began to reflect on the causes of this emerging popular culture, which led to a series of architectural movements. One notable example is Superstudio (1966-1982), an

Italian collective led by Adolfo Natalini and Cristiano Toraldo di Francia, which sought to challenge the foundations of modernist architecture, consumer culture, standardization, and industrialization. This critique of consumer culture also gave rise to the concept of architectural screens, which use facades as mediums for visual communication.

This influence persisted throughout the mid-20th century, as the rise of consumer culture, fueled by capitalism, redefined architecture as a global space and an open work (Lavin, 2019). Consumer culture and media have significantly influenced architecture, necessitating that architects adapt to new communication forms and tools (Veech, 2005; Trofymchuk, 2021). Lighting has become a crucial element of advertising, allowing for constant exposure to consumer culture (Saeed, 2015). In the late 1990s, Paul Virilio examined the emerging digital relationship between architecture and new media under the concept of “media architecture”, describing it as "a building with reference information rather than residence” (De Kerckhove, 2001, p. 5). In the early 21st century, Virilio’s idea of “media architecture” was further explored in works such as “Electronic Gothic” (Ranaulo, 2001, p. 7), which studied the digital design intentions behind “light architecture” facades (Granadillo, 2001).

Media architecture transforms urban spaces into spectacles by using buildings to display visual culture and commercial content (Hespanhol & Dalsgaard, 2015; Rattenbury, 2005). This transformation, driven by globalization and digital technology, emphasizes the visual and symbolic aspects of architectures, often at the expense of local identity and cultural significance (Jacques, 2013; Koolhaas & Mau, 1997; Debord, 1967). By prioritizing visual impact and commodification, media architecture risks contributing to cultural homogenization and social alienation (Baudrillard, 1983; Stiegler, 2010; Musto, 2010), as architecture increasingly serves commercial interests rather than communal needs (Sharpe, 2017; D'Arcy-Ree, 2019).

2.3.2 From “Static Building” to “Dynamic Building”

The transition of a building from a static structure to a dynamic one involves a significant shift in its design, functionality, and interaction with its environment. Traditional static buildings refer to structures with fixed elements and limited adaptability to changing conditions (Miller, 2017). In contrast, dynamic buildings incorporate elements that allow for movement, flexibility, and responsiveness to various stimuli, transforming them into more interactive and versatile spaces (Ron, 2012). This evolution involves both structural and functional considerations. In the context of architecture, this transition may involve incorporating kinetic elements, such as movable facades or interior partitions that can adjust to different needs and conditions (İnan & Yıldırım, 2021). Dynamic buildings are designed to respond to environmental changes, user interactions, and technological advancements, creating spaces that are more engaging and adaptable over time.

Some historical and architectural movements have viewed architecture as a dynamic, organic living organism, emphasizing constant change and renewal. In the 1960s, architectural movements emerged that focused on perceiving architecture as a dynamic entity with its own metabolism, mainly represented by Archigram in London, England, and Metabolism in Tokyo, Japan. Archigram was an avant-garde architecture group formed in the 1960s at the Architectural Association in London. The prominent members of the group included Peter Cook, Warren Chalk,

Ron Herron, Dennis Crompton, Michael Webb, and David Greene, with designer Theo Crosby as the "hidden hand" behind the group (Sadler, 2005: 161). Archigram's vision was manifested in projects such as the Plug-In City (Peter Cook, 1960), the Walking City (Ron Herron, 1964), and the Instant City (Peter Cook, 1968-1970). Metabolism, led by figures such as Kiyonori Kikutake and Kisho Kurokawa, also influenced the practice of later architects like Kenzo Tange. The term "Metabolism" describes the process by which an organism maintains the renewal of living cells. After World War II, young Japanese architects used this term to describe their innovative ideas for future urban design and public space. Metabolists believed that cities and buildings were not static entities but constantly evolving organic "life" forms. The commonality between these movements was their perception of architecture as a dynamic phenomenon rather than a stable object, challenging the binary relationship between the dynamic and static in the interaction between people and architecture. Ian Bentley further explored this concept within the framework of responsive architecture, emphasizing aspects such as legibility, variety, robustness, visual appropriateness, richness, personalization, and permeability (Bentley, 1985, p. 9). This further expanded the discourse on the potential of a dynamic city.

The manifestation of "dynamic" in contemporary architecture is represented by electronic media. The Graz Art Museum, designed by Archigram founder Peter Cook for the European Capital of Culture celebrations in Austria in 2003, features the BIX Façade on the surface of the building, consisting of 930 fluorescent lamps that can be individually adjusted. Some architectural historians and enthusiasts may recognize similarities between the Graz Art Museum and the Walking City (1964) proposed by Ron Herron, another Archigram member, in terms of the organization of form and function. The BIX Façade can be seen as a conceptual alternative to the Walking City's approach to movement, responding to the ever-changing nature of urban life through a façade that changes using LED technology. Reflecting on Archigram's work, it appears that the complexities of urban architecture were addressed by creating "moving architecture", with megastructures serving as a means of expression. The development of sensors, LEDs, big data, and technological advancements has changed both the medium and the audience of architecture. The interactive and media-driven characteristics of architecture have been extensively developed, making architecture one of the new mediums for urban representation.

2.3.3 From a "Hidden City" to an "Explicit City"

Certain areas within a city are segregated or "hidden" due to the physical environment that defines them, creating borders and vacuums (Douvlou et al., 2008). The transition from a "Hidden City" to an "Explicit City" represents a shift towards greater transparency and intentionality in urban development and governance. This evolution encompasses various aspects, such as addressing social issues, meeting citizen needs, promoting sustainability and resilience, and enhancing knowledge management within the urban context (Stephane et al., 2024). Urban planning and the design of monumental structures not only shape the image of the city but also profoundly influence life in public spaces and the cultural experiences of its inhabitants. Plan Voisin, a redevelopment plan for Paris by the French-Swiss architect Le Corbusier, exemplified the concrete real*i*zation of a city in the context of contemporary life (Corbusier, 1910). Subsequent urban projects influenced by Plan Voisin further shifted the city's dynamics from planning and human activity to a coexistence of chaos and order (Medina and Monclús, 2018).

The transition from a “Hidden City” to an “Explicit City” aligns with Jane Jacobs’ ideas in *The Death and Life of Great American Cities* (Jacobs, 1962). Jacobs emphasized the importance of urban diversity, community vitality, and resident participation, which are the core elements of an Explicit City. While Hidden Cities often suffer from hidden social problems, unequal resource distribution, and lack of transparency, the Explicit City promotes inclusiveness, transparent governance, and sustainable development, actively addressing urban challenges and encouraging open discussion. Through community engagement and incremental development, the Explicit City strives to create a diverse, transparent, and vibrant urban environment, complementing Jacobs’ urban development philosophy.

Rem Koolhaas describes the contradictions and complexities of architecture as contributing to a modern metropolitan life characterized by instability, unqualified and somewhat disorderly cultural environments (Koolhaas, 2014). The appeal of monumental structures manifests the city’s allure. After Joseph Paxton’s design of The Crystal Palace for the Universal Industrial Exposition of 1851, monumental structures once again became spectacles that captivated city dwellers. Influenced by The Crystal Palace, the Italian Radical Architecture Movement group, Superstudio, designed The Continuous Monument, an abstract element that expanded the architectural imagination of the city. Architecture, shaped by variety, complexity, contradiction, and uncertainty, becomes an integral part of urban life, extending the city’s functions and responding with megastructures that create public spaces as responses to borders and vacuums.

The unique participatory mechanisms of media architecture give it a distinct advantage in fostering innovative models of community interaction, thus contributing to the public life of the Explicit City. For instance, scholars have used media architecture to explore the voices of social groups, including the elderly, children, Indigenous peoples, LGBTQ+ communities, refugees, and those affected by COVID-19 (Caldwell, 2014; Van, 2018; Anderson, 2021; Offenhuber, 2021). On one hand, the technologies behind media architecture, such as interaction models, prototyping of interactive systems, data visualization, and algorithm development, support the interaction between buildings and people remotely. On the other hand, media architecture’s interaction mechanisms allow for selective engagement with different groups, offering insight into their reactions. In his research, Caldwell proposes “DIY media architecture" to demonstrate how the interaction between media architecture and people serves as a driver of place-making (Caldwell, 2014). Allen addressed the basic need for public space, while Sotres examined the effects on urban regeneration through screens that evoke collective memory (Allen, 2012; Sotres, 2021). Papastergiadis built upon Socrates’ concept of ”cosmopolitan citizenship” and Stoicism, explaining the motivation behind media construction as “aesthetic cosmopolitanism” (Papastergiadis et al., 2013). Under this concept, the urban screen has become an incubator for innovative models of place, a connector across cultural territories and countries, a tool for public education, and an alternative form of public life. Therefore, understanding how media architecture engages and interacts with communities can enhance the relationship between buildings and people.

Media architecture is a powerful tool that responds to the increasingly open city through its

participatory mechanisms and attention to public life. It merges architecture (physical spatial structures) with media (images produced on or inside the building). Media content becomes a central component of the project (Ptichnikova, 2019). Relying on a vast array of light sources (which may include dynamic components) and electronic texts, media architecture conveys information in a “readable” and “viewable” way, facilitating communication between buildings and viewers (Aiello, 2020). Installations can provide various forms of interaction, where residents or passers-by can influence media content, thereby establishing a strong connection between the cityscape and the urban atmosphere (Ayad & Omayer, 2022). These characteristics render media architecture a potent instrument for place-making. Meanwhile, the controlled environments and architecture functioning as media redefine the appearance of our cities in the present day.

2.3.4 Brief

Based on the three aforementioned lines of inquiry (Figure 1), this study posits that media architecture is an effective tool for providing and creating urban public spaces. Media architecture plays a significant role in addressing consumerism, adaptivism, and urban planning. It offers opportunities to respond to the evolving city, serving as a carrier of public space amid urban changes, while utilizing electronic media as a mode of perception. This study aims to explore the role of media architecture in enhancing public space interaction and influencing urban public spaces. The arguments presented corroborate the importance of media architecture in urban public spaces and lay the groundwork for further investigation into the research questions.

In addition, The literature review has systematically unpacked the theoretical and empirical foundations of media architecture, emphasizing its role as a hybrid domain bridging architecture, media studies, and urban theory. To construct a robust conceptual framework, this section foregrounds the intellectual contributions of key theorists whose work anchors the study’s analytical lens. Marshall McLuhan’s media ecology provides the bedrock for understanding media architecture’s sensory and perceptual impacts. Scott McQuire’s theorization of the “media city” offers a critical framework for analyzing media architecture’s socio-political dimensions. The Media Architecture Institute (MAI) and associated scholars offer the research views in different aspects in media architecture. MAI’s taxonomy of media architecture typologies structures the study’s typological analysis.

Figure 1. Three Clues of Media Architecture

2.4 Current State and Gaps

In the previous research, the background and important clues of the generation of media architecture were explored, confirming the rationality of exploring public space through media architecture. However, there are still some research gaps in terms of research method, research purpose, and research value.

2.4.1 First Gap：Lack of a Systematic Research Method

Taking the literature review and comparison as a beginning to analyse the research methods gap in public space in media architecture through the core clustering research, the perspective argues that research needs to be supplemented with scientific and systematic research methods. CiteSpace is a professional software used for systematically organizing literature (Chen, 2006). CiteSpaceIn Figure 2 Analyses of media architecture and public spaces through CiteSpace (A software for cluster analysis in academic research), 13 clusters were derived from the documents, and the results are clearer (Modularity Q=0.8074). The clusters are tighter and more separated (Silhouette Score=0.9569), and the clustering results are credible.

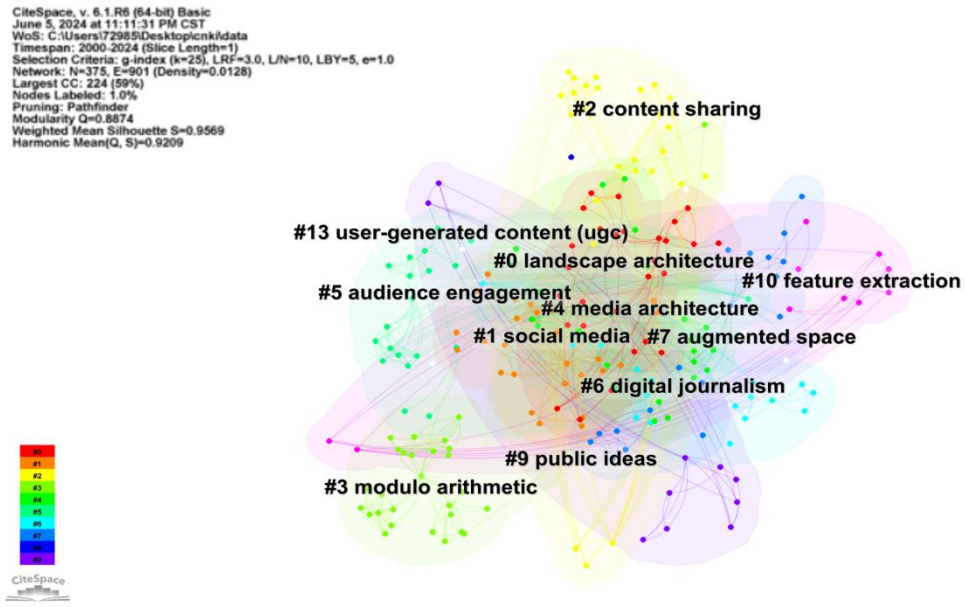


Figure 2. CiteSpace Analysis of Media Architecture and Public Space

By reclassifying into Table 3, the cluster analysis map reveals four major themes and their significance, with a detailed analysis explaining the relevance and role of each cluster. Firstly, in the realm of public construction, landscape architecture (#0), media architecture (#4), and augmented space technology (#7) are key research areas. Landscape architecture (#0) involves the design of urban parks, green spaces, and public squares, highlighting its core role in shaping urban public spaces. Media architecture (#4) enhances the functionality and appeal of public spaces by integrating interaction and information display into the urban environment. Augmented space technology (#7) enriches public space experiences through AR technology, adding new dimensions of interaction and participation. Secondly, in terms of public engagement, social media

(#1), audience engagement (#5), and user-generated content (#13) significantly enhance public interaction and involvement. Social media (#1) serves as a crucial platform for modern public discussions and event organization, greatly influencing the ways and levels of public participation. Audience engagement (#5) research reveals methods and strategies to increase public involvement, improving public interaction and feedback mechanisms. User-generated content (#13) enriches public discourse and enhances individuals' proactivity and creativity in public participation. Thirdly, regarding public culture, digital journalism (#6) and public ideas (#9) play important roles in disseminating public information and ideas. Digital journalism (#6) studies the dissemination, impact, and relationship of digital news with traditional journalism, transforming how public information is accessed and spread. Public ideas (#9) explore the dissemination and acceptance of various public ideas in public spaces, helping to understand the spread and recognition of social values and policies among the public. Lastly, in terms of public sense, content sharing (#2), modulo arithmetic (#3), and feature extraction (#10) use technical methods and data analysis to reveal the formation and dissemination of public awareness. Content sharing (#2) platforms play a crucial role in facilitating the extensive dissemination of knowledge and opinions, thereby exerting a significant influence on the formation of public opinion and ideology. Although modulo arithmetic (#3) and feature extraction (#10) may appear to have less direct relevance to public awareness, their technical approaches offer valuable tools for large-scale data analysis, which assists in revealing intricate patterns within the formation process of public awareness.

Table 3. Four Concepts after Cluster Analysis

Title: Media Architecture and Urban Public Space

Aspect	*Argument Steps*	*Relevent References*
Media Architecture and Urban Public Space	Public Construction	Pihlajaniemi et al. 2014; Verhoeff, 2015; Innocent, 2016, 2018; Ji et al. 2021
	Public Engagement	Hespanhol & Tomitsch, 2012; Pihlajaniemi et al. 2012; Memarovic et al. 2012; Fredericks, 2016; Lodi & Batal, 2018
	Public Culture	Colangelo, 2016; McArthur & Xu, 2021
	Public Sense	Memarovic et al. 2014; Toft, 2014; Caldwell & Foth, 2014, 2018; Kjær Søgaard et al. 2021

Throughout the approaches to the study of the role of media architecture in public space (Table 4), it can be observed that there is a lack of theoretical extension and systematicity among the existing studies. The vast majority of the studies in Table 3 are case studies based on actual media architecture projects carried out in public spaces, containing participatory (Innocent, 2018) and relevant observational studies (Hespanhol & Tomitsch, 2012; Memarovic et al. 2012). Besides, they also include experiments (Colangelo, 2016) and evaluations (Kjær Søgaard et al. 2021) after the projects have been built. Although studies have utilised theoretical frameworks to understand the role of media architecture in public space (Toft, 2014), there is still a certain distance between data and theory, as well as the completeness and systematisation of theories. In terms of research methodology, scholars have conducted workshops (McArthur & Xu, 2021), focus groups (Fredericks, 2016), and ethnographic studies (Pihlajaniemi et al. 2012). Some progress in research has been achieved, but there is still some space for improvement in the depth of the final theory.

For the first research gap, it is mainly hoped that methodology will be the central starting point,

and it is planned to use scientific and systematic research methods to link data and theory. In addition, it is hoped that more diverse opinions can be accommodated in the data collection process and that a certain systematic logic can be followed. It is also hoped that this systematicity can be reflected in the eventual exploration of Chinese expectations of media architecture in public space and that the system can be transformed into a relevant theory that will guide the design and management of media architecture in China, and at the same time provide China's specific experience, thus responding to the main purpose of this research.

Table 4. Research Methods in Media Architecture in Urban Public Space

Title: Research Methods in Media Architecture in Urban Public Space

Author(s), date	*Method*	*Details*	*Strengths and Weaknesses*
Pihlajaniemi et al. 2014; Verhoeff, 2015; Innocent, 2016; Lodi & Batal, 2018 ; Ji et al. 2021	Case Study	/	S: Exhaustive introductory project W: Subjective, lack of scientific
Innocent, 2018	Participatory	Using code as a co-participant	S: Getting more accurate advice W: Small sample size
Hespanhol & Tomitsch, 2012	Observation log	Conduct on-site research and record logs	S: Intuitive access to information W: Lack of depth
Memarovic et al. 2012	Observational research	Data was collected from over 50 passers-by through observation and follow-up records, and semi-structured interviews were conducted with 37 users	S: Get more details W: Insufficient theoretical density
McArthur & Xu, 2021	Workshop	Dialogue and reflection between researchers and participants	S: Creating an equal dialogue W: Lack of theoretical depth
Fredericks, 2016	Focus groups	Focus groups with industry professionals to discuss the results of the temporary intervention	S: Get more professional advice W: Easy to ignore other voices
Colangelo, 2016	Experimentation	Collaborated with artists to create a public data visualisation project	S: Well-established testing process W: High cost
Kjær Søgaard et al. 2021	Post-occupancy evaluation	Cyclic evaluation of completed public space interactions to identify primary and secondary factors	S: Rationalisation of after-use space W: Bringing in the cost of conversion
Toft, 2014	Theoretical Framework	Introduces theoretical frameworks such as 'spatial determinism' and 'situated existence'.	S: Bringing academic depth W: Lacks adaptability for application
Pihlajaniemi et al. 2012	Ethnography	Observed for 25 days, questionnaires, interviews, and recorded feelings of 105 participants.	S: Comprehensive and scientific W: Failure to develop an understandable theory

2.4.2 Second Gap：Lack of Interdisciplinary and Humanistic Perspectives

Research on media architecture in public spaces has made significant progress, but several gaps remain to be addressed, especially at the level of interdisciplinary and humanistic perspectives. Media architecture studies focused on the expression of content and the interaction process (Rhein, 2023). However, there is a certain lag in the research of urban public space and media architecture,

which is reflected in aspects such as management and design. City administrators still view the increasing number of screens as urban advertising, most of them are contracted by the corresponding media companies, neglecting non-commercial values such as the value of media architecture in public education and public interaction in pursuing economic benefits (Struppek, 2006; Wallace, 2012; Ergin & Fatah, 2018). According to Wouters, the benefits of media architecture are more non-commercial than the immediate commercial returns of advertising (Wouters et al. 2021, p.57). In Lee's study of media architecture in Seoul, he attributes the value of media architecture to the cultural elements of the city, the creation of inter-regional differences and the technological dynamics of hardware and content (Lee, 2016, p.4). McArthur defines media architecture as a tool for national identity, a synergist of commercial and cultural innovation and a means of participatory urban planning and governance (McArthur, 2018, p.10).

By delving into the research perspectives presented in the preamble, a second research gap emerges. This involves incorporating interdisciplinary and humanistic perspectives to address existing research gaps. Beyond systematic assessment, a deeper exploration of data is needed to better account for the growing humanistic aspect in urban public space and media architecture. An interdisciplinary and comprehensive system is required to collect and evaluate research on media architecture experiences, which will better guide practice in the field.

2.4.3 Third Gap：A Broader View - A Perspective from China

China represents a microcosm of urbanisation, marketisation and mediaisation in Asia, and media architecture is a prominent product of this process. A study of media architecture in urban public spaces in China could bring new perspectives and experiences to the existing field of media architecture research. Urbanization, marketization, and media in China have intricately intertwined to shape the country's urban landscape and societal dynamics. China's rapid urbanization and economic growth over the past few decades have brought about significant changes in urban spaces, media consumption patterns, and market structures (Chen et al., 2015; Cui et al., 2022). The emergence of new towns, ghost cities, and the revitalization of industrial heritage sites implies the evolving urban fabric in China (Yin et al., 2017). Additionally, the media's role in influencing public sentiment, urban rejuvenation, and community resilience during crises like the COVID-19 pandemic underscores its importance in contemporary Chinese society (Chen & Ru-liang, 2023; Zhou et al., 2022; Liang, 2024). Media architecture is an innovative approach that integrates digital media with physical spaces, particularly in public settings such as large-scale advertisements and governmental declarations. This concept creatively enhances architectural environments, providing new ways to interact with public spaces (Moere & Wouters 2012). By incorporating media elements into architectural design, media architecture plays a crucial role in transforming the public sphere into an interactive and dynamic experience, influencing how individuals engage with and perceive urban environments (Colangelo, 2019). By utilizing large screens and public space broadcasting, media architecture reshapes public behavior through establishing engaging and entertaining spaces, transitioning from traditional static structures to dynamic and interactive installations that mirror the evolving nature of media in public spaces (McQuire, 2009). All of the above studies have demonstrated that media architecture is becoming an increasingly important vehicle for media in today's Chinese cities and that it uses its urban public spaces as the main means of communication.

Figure 3. Higher Education Situation in Media Architecture (Halskov, 2021: p. 12)

Media architecture has become a building trend in China (Haeusler & Tscherteu, 2012; McArthur, 2018; Schielke & Ma, 2021), but higher education and research on architecture media have not developed on a large scale. Figure 3 shows that, according to a study by the Australian University of Applied Sciences on architecture universities around the world, research on media architecture is more concentrated in Europe (Barnard, 2021). The introduction of media architecture in modern architectural education is necessary to allow students to engage, visualise, communicate, test, and develop architectural knowledge with dynamic properties (Jenek et al. 2020, p.159). Although scholars in some Asian countries have realised this phenomenon and have begun to conduct research, however, the force of an individual is still limited (Tovarović et al. 2016; Chang et al. 2019; Kosasih & Sangaras, 2022; Schielke, 2023). Research in media architecture has shown a growing portfolio of global projects, indicating a sustained interest in the field (Wouters et al., 2021). Therefore, it is imperative that systematic research and public education on media architecture, from the government to business to education in China.

> The Chinese government has used this new type of media architecture for important political events for representation.
>
> (Schielke & Ma, 2021, p.225)

China is an experimental field for media architecture, and conducting research in urban public spaces can assist with related research in other countries and regions. Shiqiao suggests that the generation and consumption of images in China's architectural sector is very strong and compelling, with almost every city wanting to have prestigious architecture (Shiqiao, 2008). At the same time, China is the world's largest producer of LEDs and the world's largest supplier of media architectural equipment (Wang et al., 2021; Mordor, 2024). Media architecture can be a creative practice that satisfies the need for China's urban image while taking advantage of the Chinese industry. There is a part of scholars who are already focusing on the research of media architecture

in China. Haeusler and Tscherteu have described the growing phenomenon of screen architecture in China (Haeusler & Tscherteu, 2012). McArthur has mapped the urban media ecology based on the ubiquitous digital media in Chongqing, exploring the possibility of small-scale testing interventions by property developers, manufacturers, and architects at the community level (McArthur, 2018). In a subsequent study, Schielke examined the Chinese media landscape regarding state power, urban design, architectural tradition, government intervention, and the night-time economy to examine the Chinese media landscape (Schielke & Ma, 2021). Existing studies on media architecture in China focus more on the changes in perception and image that media architecture has brought to Chinese cities, but there are few studies, especially systematic surveys, on the perceptions and evaluations of media architecture. This state of affairs is also reflected in the research of Chinese scholars, including Chang, Zhou and Cai (Chang et al., 2019; Zhou & Xie, 2020; Cai et al., 2022).

Overall, media architecture has become a notable architectural trend in China during the process of urbanisation, marketing, and mediation. Although higher education and research on architectural media has yet to develop on a large scale, China as a testing ground for media architecture in urban public space is not only academically important but also provides valuable insights and references for research on public space in media architecture in other countries. This study fills this gap in terms of research objects.

2.5 Chapter Summary

In summary, this literature review has delineated the evolution and significance of media architecture in the context of urban public spaces. The theoretical foundation was established through the concept of mediatization, highlighting the role of architecture as a medium for storytelling and urban expression. This review further explored the transformation of urban public spaces through media architecture, identifying new interactive environments and audiences as pivotal developments. The discussion is based on the three main clues: transitioning from “Advertising Architecture” to “Media Facade”, from “Static Building” to “Dynamic Building”, and from a “Hidden City” to an “Explicit City”, providing a comprehensive understanding of how media architecture reshapes urban landscapes. The analysis underscored the importance of dynamic, interactive, and participatory elements in contemporary architectural practices.

However, significant research gaps remain. The lack of a systematic research method, interdisciplinary perspectives, and a broader view, especially from China’s context, have been identified as critical areas needing further exploration. Addressing these gaps is essential to advance the field of media architecture and its application in urban public spaces. Building upon the identified gaps, the next section will detail the chosen methodology, influenced by the need for a systematic, interdisciplinary, and contextually relevant approach. The methodology will encompass scientific and systematic research methods to bridge data and theory effectively, incorporating interdisciplinary insights to enrich the analysis. Additionally, the unique perspective of media architecture in China will be integrated to provide a comprehensive and individually relevant study.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter mainly aims to introduce the research methodology and discuss the philosophical foundations, research design, and specific data collection and processing methods utilized in the doctoral-level research conducted by the author. In the literature review, it was identified that gaps in the research primarily existed in the methodology, perspective, and focus of the study. This chapter addresses these gaps by proposing a methodological approach tailored to bridge them. During the author's doctoral studies, several attempts and experiments were conducted based on the research questions, gradually shaping the current research tendencies and decisions. Before formally introducing the methodology, this chapter will also discuss how these pilot researches have influenced the structural organization of the author's research.

3.1.1 Pilot Research

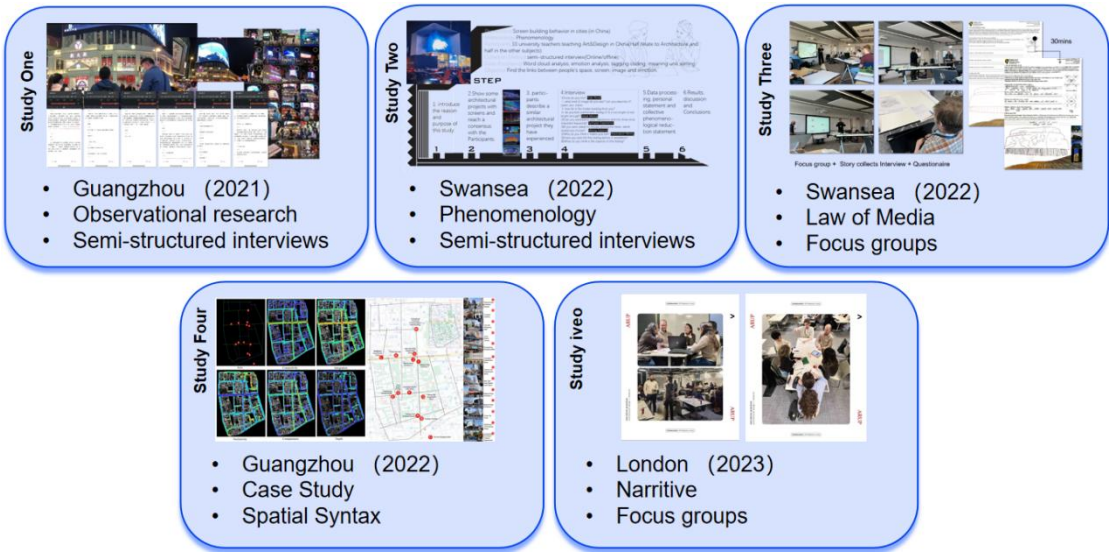


Figure 4. Five Pilot Researches before the Formal Research

This study builds upon five preliminary investigations conducted between 2021-2023 (Figure 4), previously presented in international forums across the UK, Europe and China. These foundational studies informed the research's methodological development and analytical framework through progressive experimentation.

The initial Guangzhou-based study (Research 1, Not publish yet) established media architecture's unanticipated impact as urban symbols through behavioral observation and interviews, particularly among tourists. This prompted Research 4's advanced methodological innovations, employing spatial syntax for locational analysis and machine learning to quantify perceptual changes pre/post-media architecture installation (Ruan & Wu, 2023).

Complementary studies employed diverse methodological approaches: Research 2's

phenomenological interviews with architecture/design faculty revealed media architecture's essence as sensory scaling and technological dynamism (Ruan, 2022a). Research 3's narrative co-creation workshop with architecture students demonstrated its role in building identity formation (Ruan, 2022b). Research 5's professional focus group at Arup London positioned media architecture as a portal to virtual urban futures (Not publish yet). Collectively, these investigations shaped the study's theoretical orientation and methodological pluralism.

3.1.2 Brief

Building on these foundational studies, this research adopts a postpositivist framework that integrates subjective experience with objective analysis through mixed methodologies. The study employs walking studies, space syntax, and grounded theory to systematically examine media architecture in Chinese urban contexts, addressing both methodological gaps and existing research limitations in this field. By applying grounded theory to analyse public perceptions and expectations, the research ultimately aims to develop a comprehensive framework to inform future media architecture design, management, and urban renewal strategies. This approach not only bridges current theoretical and practical gaps but also establishes a replicable methodology for studying technologically-enhanced urban spaces.

3.2 Research Philosophy

Postpositivism, as a research paradigm, emerges as a critique of positivism, advocating for a more nuanced and subjective understanding of research (Salzmann-Erikson, 2024). postpositivism emphasizes the recognition of the complexity inherent in research and the importance of embracing subjectivity (Pathak & Thapaliya, 2022). Unlike positivism, which focuses on objective truths, postpositivism acknowledges multiple realities and the revisability of theories, especially in social sciences and quantitative research (Routledge, 2007, p.17). Post-positivist researchers aim to use an objective approach to analysis to provide explanations or predictions while minimizing biases and errors (Levitt et al., 2017). In conclusion, postpositivism represents a shift towards a more nuanced, subjective, and multi-faceted approach to research, challenging the traditional positivist notions of objectivity and absolute truths. By embracing complexity, subjectivity, and multiple realities, postpositivism provides researchers with a framework to navigate the intricacies of modern research inquiries.

In this study, choosing postpositivism as the philosophical foundation, its multi-method integration and profound understanding of the complexities of reality are leveraged to explore the impact of media architecture in urban public spaces on society and individuals. postpositivism emerged from critiques of traditional positivism, which overly relies on objective data and experimental methods but neglects the subjective experiences and complexities inherent in social sciences (Tanlaka et al., 2019). postpositivism acknowledges the existence of objective reality while simultaneously emphasizing the researcher’s reflexivity, engagement, and recognition of multiple realities (McMurtry, 2020). Its theoretical foundation encompasses reflexivity, methodological pluralism, and an appreciation of the complexity of reality. Firstly, postpositivism stresses that researchers should reflect on how their values, backgrounds, and assumptions influence the research process. Researchers are both objective observers and integral parts of the research process; this reflexivity enhances the transparency and credibility of the research

(Ponterotto, 2005, p.126). Secondly, postpositivism encourages to employ diverse research methods, encompassing both quantitative and qualitative approaches. This methodological pluralism facilitates a comprehensive understanding of the complexity and multidimensionality of the research subject (Mangan et al., 2004; Shah & Corley, 2006). Lastly, postpositivism acknowledges the complexity and multiplicity of the real world, emphasizing the consideration of different perspectives and contexts in research. This recognition of complexity ensures that research outcomes are more comprehensive and realistic (Ponterotto, 2005, p.128).

The primary reasons for selecting postpositivism as the philosophical foundation of this study are threefold. Firstly, the research requires both quantitative methods, such as space syntax analysis, and qualitative methods, like surveys and interviews, to analyse media architecture in urban public spaces. postpositivism provides the theoretical framework to integrate these diverse methodologies, leveraging the strengths of each approach. Secondly, the complexity of the media architecture's impact involves multiple factors and stakeholders, and postpositivism's emphasis on multiple perspectives allows to comprehensively examine this phenomenon. Lastly, the principle of reflexivity inherent in postpositivism enables researchers to critically evaluate their biases, enhancing the transparency and credibility of the research. This methodological combination gives rise to findings that possess theoretical robustness as well as practical significance, thereby rendering postpositivism a highly suitable foundation for this research.

Opting for postpositivism as the philosophical foundation brings several key advantages. One of the foremost benefits is its methodological flexibility. Researchers can select and integrate various approaches based on the specific needs of their study, allowing for a more nuanced understanding of the subject matter. This flexibility enables analyses at different levels and from multiple perspectives. By incorporating quantitative and qualitative methods, the research captures data from diverse angles to obtain more comprehensive findings. Such thoroughness is crucial for explaining and understanding complex social phenomena. Moreover, postpositivism's focus on the complexity of reality and the integration of multiple perspectives ensures that research outcomes are closely aligned with actual situations to enhance their relevance and applicability to real-world problem-solving and decision-making.

In conclusion, selecting postpositivism as the philosophical foundation of this study not only leverages the advantages of multiple methods to deeply understand media architecture in urban public spaces and its impacts but also enhances the comprehensiveness and practical significance of the research, thereby increasing its credibility and applicability.

3.2.1 Philosophical Reflection

Before elaborating on the methodology, this study wishes to introduce a certain amount of philosophical reflection to reach the height of an overarching ideological principle. Haeusler and Tscherteu, who are founders of MAI, identified three critical concepts in Media Architecture: Media Façade, Media Architecture, and Media Content (Haeusler and Tscherteu, 2012, p.99). The following attempts to examine the relationship between architecture, façade, and content from a philosophical perspective.

The terms entity and ontology originate from Aristotle and Kant's studies of metaphysics (Smith & Ceusters, 2010). As nouns, the difference between entity and ontology is that an entity is something that has a distinct existence as an individual unit, often used for organizations that have no physical form (Smith & Ceusters, 2010, p.140), while ontology is the branch of metaphysics that addresses the nature or essential characteristics of being and of things that exist; the study of being qua being (Lean, 2021). Media architecture can be incorporated into the thinking of entity and ontology (Aksamija et al., 2010). When media architecture is examined in isolation, the entity of media architecture is the building itself, the content on the architectural screens is its ontology, and the screens become the mediating medium (Wiethoff & Hussmann, 2017, p.27). Whether abstract or figurative, the content of media architecture expresses the core ideas of the building, and content is the soul of architectural expression (Moere & Wouters, 2012). Some of the advertisements in commercial buildings may not necessarily be the most desirable content for the building and its owner, but the commercial elements behind them represent the genuine wishes of the building (Alaily-Mattar et al., 2021).

Through this philosophical reflection on these concepts, the role and impact of media architecture in urban public spaces can be understood more comprehensively. This integrated perspective not only helps to better explain and understand complex social phenomena but also enhances the practical applicability and credibility of the research findings. Figure 5 presents a model for understanding media architecture, which the researcher named "Screen inside the screen", aiming to understand the connection between architecture, content, and façade. The study of screen culture often comes from scholars of film who understand the screen as a visual element (Chisholm, 1989, p.17). This model illustrates how the screen, as a visual element, mediates the process of transferring an understanding of media architecture from the ontological to the physical, and helps researchers delineate the research object of the media architecture.

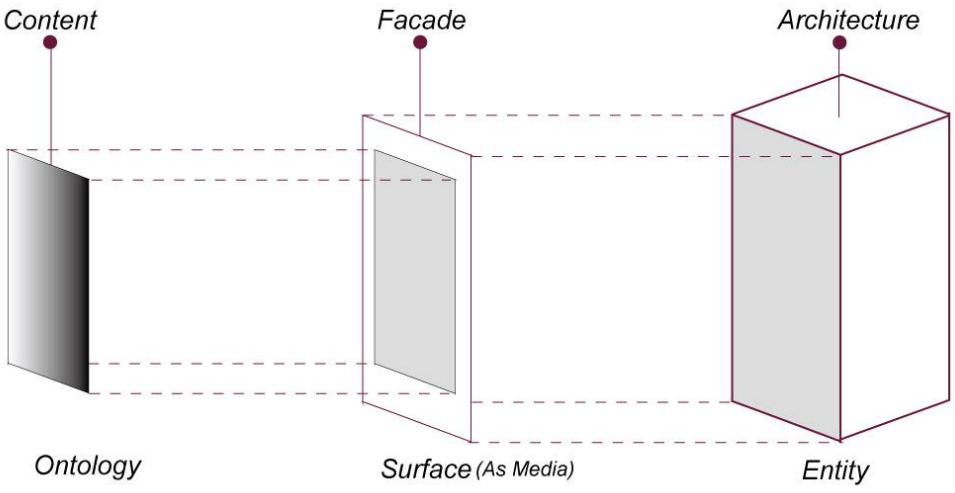


Figure 5. Screen Inside the Screen: A Philosophical Understanding of Media Architecture

3.3 Research Design

Postpositivism, as a research paradigm, emphasizes a departure from the strict objectivity and determinism of positivism towards a more nuanced understanding that acknowledges the

complexity and subjectivity inherent in research (Timans et al., 2019; Salzmann-Erikson, 2024). This shift challenges the dominance of positivism, which often relies on randomized control trials as the gold standard of evidence (Holmes et al., 2006). Postpositivism is characterized by methodological pluralism or eclecticism, which involves integrating multiple research methods to enhance the quality of research outcomes (Johnson & Onwuegbuzie, 2004).

Using mixed methods in research on media architecture in urban public spaces offers significant advantages. Firstly, urban public spaces and media architecture are complex phenomena that involve multiple factors and stakeholders (Kong et al., 2016). Mixed methods can provide a more comprehensive research perspective by utilizing qualitative and quantitative approaches simultaneously (Ivankova & Wingo, 2018). Quantitative data can reveal usage patterns and the popularity of specific media architectures, while qualitative data can offer deep insights into people's experiences and perceptions (Creswell & Plano Clark, 2017). Moreover, mixed methods enhance the reliability and validity of the research. By integrating various methods, researchers can cross-validate results, thereby increasing the credibility and thoroughness of their findings (Roberts & Povee, 2014). Quantitative data provides breadth while qualitative data provides depth, both compensating for the limitations of single-method approaches (Dellinger & Leech, 2007). For instance, the analysis of quantitative data can be supplemented and explained through qualitative interviews, ensuring the comprehensiveness and reliability of the research outcomes (Johnson & Onwuegbuzie, 2004).

Mixed methods also accommodate the diverse data sources needed for research on urban public spaces and media architecture, such as behavioral observations, interviews, surveys, and environmental analyses. This methodological flexibility allows researchers to gather rich, multi-layered data. Sandaruwan & Hewawasam present a methodology involving onsite observations, questionnaire surveys, interviews, and photographic documentation to evaluate the publicness of urban public spaces, demonstrating the multi-layered approach needed for comprehensive research in this area (Sandaruwan & Hewawasam, 2021). Furthermore, mixed methods address the diverse nature of research problems, encompassing architecture, urban planning, sociology, psychology, and other fields. By combining methods and theories from these disciplines, mixed methods can provide a comprehensive explanatory framework. Qualitative analysis helps to understand social interactions, while quantitative analysis evaluates spatial design effects (Creswell & Plano Clark, 2017). Finally, mixed methods can offer practical policy and management recommendations for media architecture in urban public spaces (Koohsari et al., 2015). Besides, quantitative research provides concrete statistical data to support decision-making, while qualitative research offers contextual information and in-depth insights, aiding the formulation of more human-centred and effective policies. Through integrating results from different methods, researchers can identify the most popular design elements and understand the reasons behind their appeal, thereby providing more targeted suggestions for future design and management (Johnson & Onwuegbuzie, 2004).

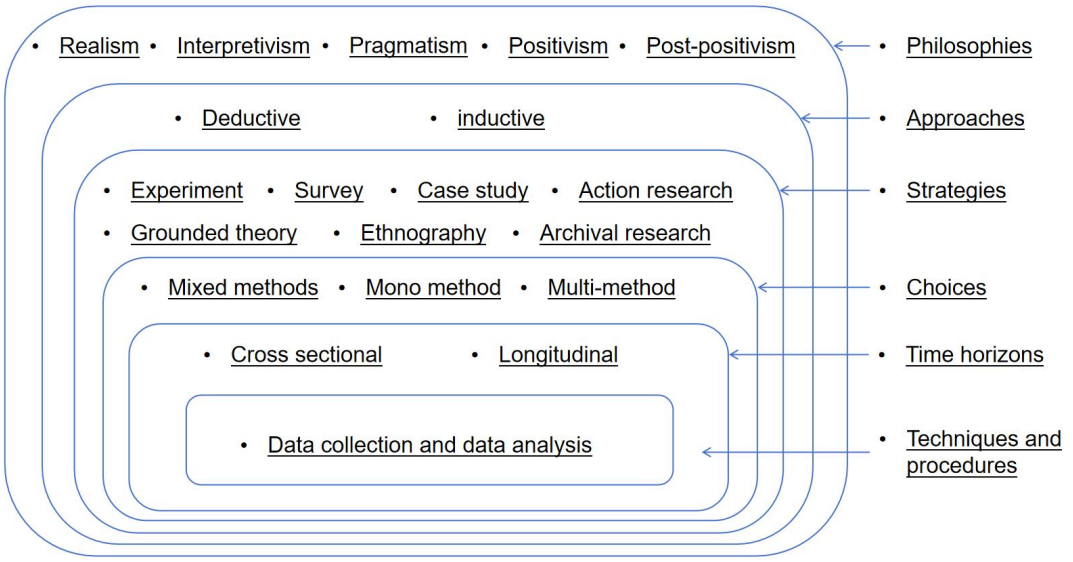


Figure 6. Research Onion (Saunders et al., 2009: 138, Author altered drawing)

The research onion, proposed by Saunders et al. (Figure 6), serves as a research framework addressing research questions and gaps at two levels: the research philosophy and the research methodology (Saunders et al., 2009, p. 136). By utilizing this structure to organise the research logic (Figure 7), this study adopts a post-positivist approach. It acknowledges epistemological diversity, subjectivity, and methodological plurality, and emphasizes reflexivity and criticality in the knowledge generation process. Grounded theory is employed as the research strategy to address the lack of methodological rigor in the previous study. The mixed-method research approach aligns with postpositivism and contributes various layers of knowledge, providing an interdisciplinary and humanistic perspective for the study on media architecture in urban public spaces.

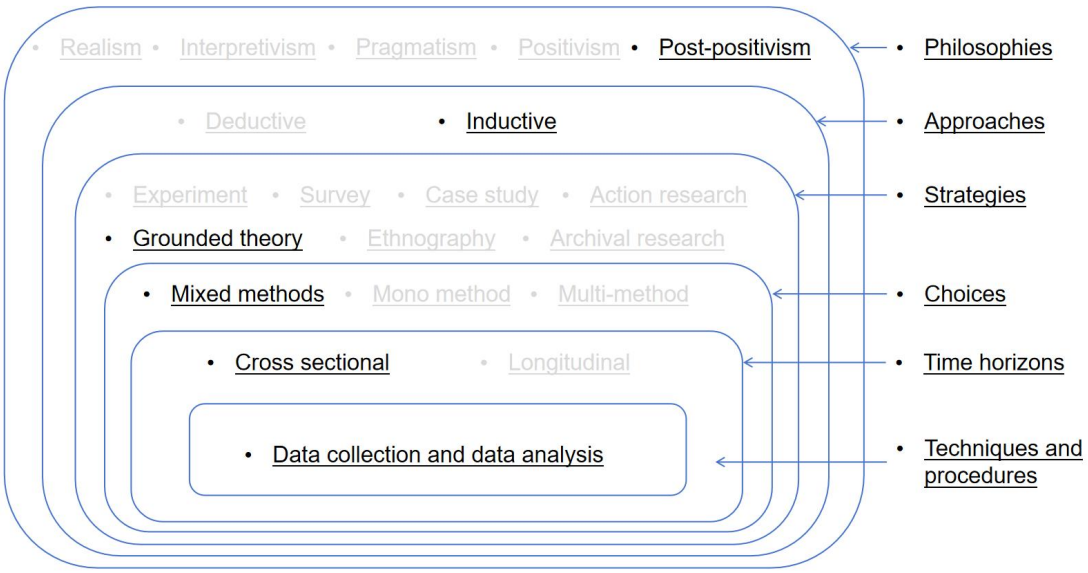


Figure 7. Research Onion of this Research

Grounded Theory, as a qualitative research method, provides significant advantages for studying

media architecture in urban public spaces (Glaser & Strauss, 2017). This approach emphasizes generating theories from empirical data (Corbin & Strauss, 2014), which is crucial for exploring the specific roles and impacts of media architecture when there are limited theoretical frameworks available in this area (Pollastri et al., 2021, p.55). By deriving theories directly from observations and interviews, the findings more accurately reflect real-world situations (Mohajan & Mohajan, 2023). The complexity and multi-layered nature of urban public spaces and media architecture, encompassing technological, social, and cultural factors, are effectively addressed through the flexibility of the Grounded Theory (Krasilnikova & Klimov, 2016). This flexibility allows researchers to continuously adjust their research direction during data collection and analysis, capturing dynamic complexities (Locke, 2000; Brătianu, 2020). Furthermore, Grounded Theory values the subjective experiences and perspectives of research participants to enable a deeper understanding of how different groups, such as citizens, designers, and policymakers, perceive and use media architecture and its impact on them (Locke, 2000). Through in-depth interviews, researchers can uncover these viewpoints and experiences and then identify new research questions (Corbin & Strauss, 2014). Grounded Theory also aids in revealing previously unrecognized phenomena and issues, providing new research directions for relatively unexplored fields (Bowen, 2008; Cleland, 2017). Moreover, the findings of Grounded Theory research often possess strong practical significance (Suddaby, 2006). By thoroughly analyzing empirical data, researchers can provide specific recommendations for urban planners, architects, and policymakers and aim them in designing and managing media architecture more effectively to meet public needs (Bollo & Collins, 2017; Lianto, 2019). Therefore, the data-driven, flexible, in-depth, problem-discovering, and practice-oriented characteristics of Grounded Theory provide unique advantages for studying media architecture in urban public spaces, facilitating the generation of theories and recommendations that are both realistic and insightful.

Within the methodology of Grounded Theory, Glaserian Grounded Theory and Straussian Grounded Theory represent two primary approaches (Mohajan & Mohajan, 2023). Glaserian Grounded Theory emphasizes the natural emergence of theory from data without a pre-existing framework (Stern, 2016), whereas Straussian Grounded Theory focuses on systematic coding procedures and a structured analytical process (Thai et al., 2012). These two approaches differ significantly in terms of data analysis flexibility and systematization. The former is more flexible and the latter provides clear guidelines and steps (Van Niekerk & Roode, 2009; Heath & Cowley, 2004).

The Straussian Grounded Theory method was adopted in this study. This approach offers several notable advantages. First, the systematic and structured coding procedures of Straussian Grounded Theory make the data analysis process more rigorous and reproducible. By employing steps such as open coding, axial coding, and selective coding, it is possible to systematically analyse data and construct a clear and coherent theoretical framework (Williams & Moser, 2019, p.47). Second, the coding paradigm model is employed to effectively guide the analytical process, enabling researchers to better understand the complex relationships and patterns within the data (Pidgeon & Henwood, 2004, p.630). The structured approach of Straussian Grounded Theory helps to clarify the complexity and diversity of the data, leading to the construction of an explanatory theoretical model (Thornberg, 2017, p.431). Through this method, it is possible to systematically explore and

understand the role and impact of media architecture in urban public spaces, making the research findings more reliable and convincing.

Current research on media architecture lacks robust theoretical frameworks, is limited in empirical scope, and insufficiently considers stakeholders. Meanwhile, it also fails to fully address the complexity of urban spaces and their integration of social, cultural, and technological factors. By employing the Grounded Theory, this study generates theories from real-world data, offers a flexible and comprehensive approach that bridges these gaps, and provides practical insights for urban planning.

In summary, the data-driven, flexible, and practical nature of the Straussian Grounded Theory makes it an ideal methodology for this study, facilitating the generation of theories and recommendations that are both empirically grounded and applicable to the design and management of media architecture in urban public spaces.

Figure 8 which draw by the author presents the basic logic of this research, showing how to select methods or strategies to respond to the research gap identified in the previous section. In addition, the choice of methodology considers the strengths and weaknesses of the pilot research and reflects on the state of the complex urban problem in the context of the research philosophy. In the next subsection, the discussion will focus on the methodology of data collection, including the sampling and saturation validation methods.

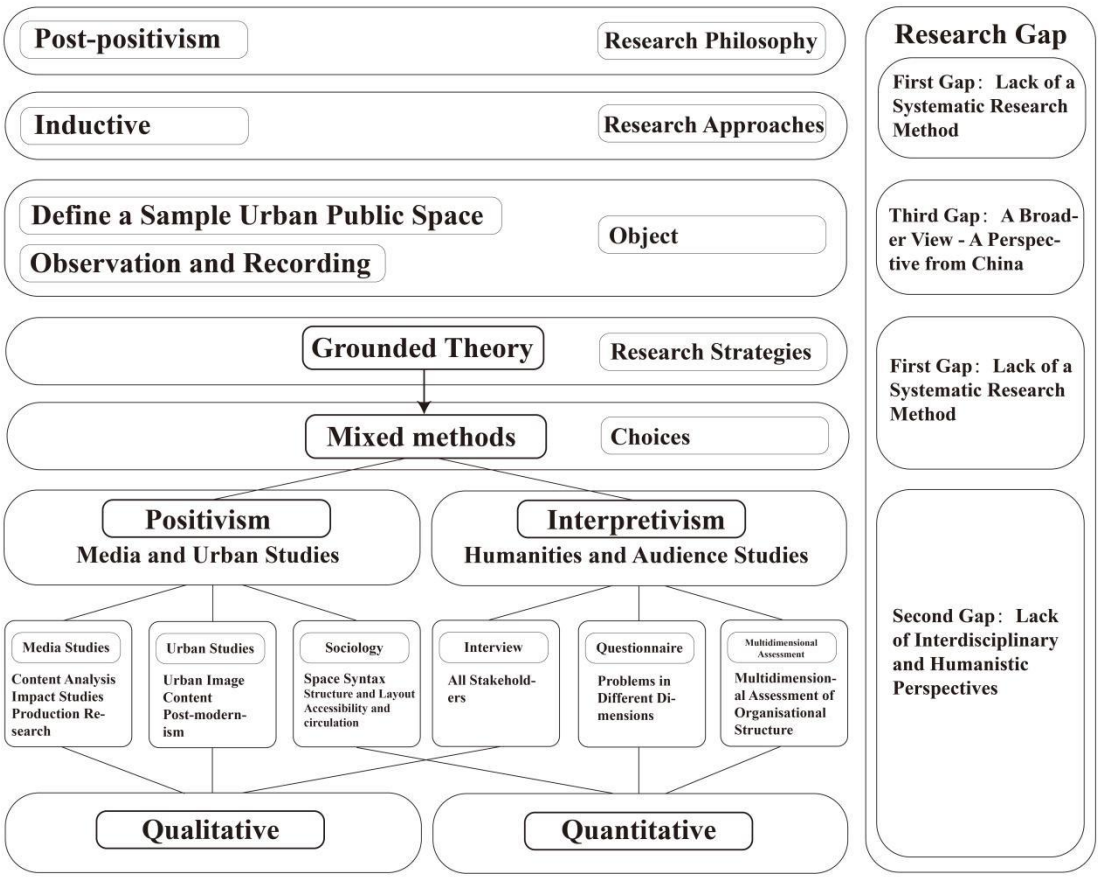


Figure 8. Research Design

3.4 Data Collection Methods

Postpositivism, as a research paradigm, acknowledges the limitations of strict objects and embraces the inherent complexity and subjectivity during the research process. This paradigm advocates for a more inclusive approach to data collection, known as methodological diversity or eclecticism, which improves the quality and comprehensiveness of research findings through integrating multiple research methods (Clark & Creswell, 2008, p. 47). Additionally, the data collection process should emphasize adapting research methodologies to the specific context and nature of the research question rather than rigidly adhering to a single method. This often involves combining qualitative and quantitative methods to understand the research in a richer and more nuanced way (Johnson & Onwuegbuzie, 2004, p. 26). Finally, researchers should critically reflect on their biases and assumptions and consider their potential impact on the research process and outcomes. Such reflection is crucial for understanding the interaction between the researcher and the research objects (Holmes et al., 2006, p. 186). This subsection will describe the data collection tool used in this study and briefly state the reasons for the choice, advantages, and limitations.

3.4.1 Media Studies Perspectives

Media studies is an interdisciplinary field encompassing various aspects of media, communication, and society. It involves analyzing the role of media institutions, practices, and content in influencing society, politics, and culture (Flew, 2014). Scholars in this field have explored topics such as media effects, media cultures, audience fragmentation, and the framing of news (Couldry, 2008; Esser, 2008; Lindell & Hovden, 2018; Strömbäck & Aelst, 2009). Rodgers discusses how urban media architectures, such as urban screens and outdoor advertising, aid in comprehending contemporary cities by examining the circulation of media forms (Rodgers, 2014). Colangelo explores the critical spatial practice of media architecture, emphasizing how urban screens and LED façades challenge conventional practices by merging digital and physical spaces in smart cities (Colangelo, 2021). These discussions underscore the role of the content within media architecture in shaping urban landscapes and engaging with public spaces in the field of media studies.

In this study, media studies is primarily employed to analyse the content presented by media architecture. Through fieldwork, changes in the content, as depicted in videos, are examined to infer its intentions and evaluate its alignment with the needs of urban public spaces. Furthermore, an in-depth analysis is conducted on the themes, narrative structures, symbols, and implied meanings embedded in the media content. By systematically organizing the content within urban public spaces, the study aims to elucidate the dissemination methods and pathways of media content by applying media theories and dissemination mechanisms.

As for the specific research method, the researcher will take a two-minute video of media architecture in a selected sample of urban public space to record the content while reflecting on the reasons and purposes behind the design of the media architecture's content, summarising and exploring it.

3.4.2 Urban Research Perspectives

The perspectives of urban research are complex and integrated. A widely cited definition was

given by Kevin Lynch, in which the city is not only a collection of physical spaces but also a place of perception and experience (Lynch, 1964, p.5). Lynch emphasised that the image of the city has a profound effect on the identity and behaviour of its inhabitants (Lynch, 1964, p.10). In addition, Robbins and El-Khoury explored the definition of urban studies. Through an in-depth study of historical, theoretical and design case studies of different cities, they revealed the multiple processes that shape cities and introduce key methods and tools for describing and theorising complex urban environments (El-Khoury & Robbins, 2004).

Urban studies should consider the dynamic nature of modern cities and introduce interdisciplinary and integrated approaches to research. In *Reconsidering the image of the city*, Kevin Lynch provides an in-depth reflection and development of the theories he presented in *The Image of the City*. He recognises that although his five elements (paths, boundaries, zones, nodes and landmarks) play an important role in explaining the cognitive aspects of urban environments, these concepts do not fully encompass the complexity of urban environments (Rodwin & Hollister, 2013, p.151). Therefore, he adds dynamic and memory elements to the study of urban imagery, emphasising time and multi-sensory considerations. More importantly, he advocates that the study of urban imagery should not be confined to the field of urban planning and design, but rather incorporate multidisciplinary theories and methodologies such as sociology, psychology, economics, and environmental sciences, to form a comprehensive research perspective.

The relationship between media architecture and a city's image extends beyond aesthetics, incorporating urban communication and engagement. Media architecture functions as a tool for comprehending the complexity of urban environments and the interactions within cities. As a communication medium, it reaches a broad audience and fosters emotional connections with the city (Wouters et al., 2018). Furthermore, it contributes to creating digital atmospheres that influence the visualization and marketing of urban redevelopments (Degen et al., 2016). Media architecture also reveals interactions involving more-than-human nature in cities, offering insights that can inform urban planning and decision-making processes (Pollastri et al., 2021). Additionally, it opens up alternative ways for people to engage with urban environments and provides enchanting and enriching experiences that redefine how individuals interact with urban spaces (Clarke et al., 2016).

Based on an integrated and dynamic urban perspective, the researcher will attempt to categorise media architecture in terms of urban imagery and deeply discuss the connection between various types of media architecture and urban public spaces.

3.4.3 Sociology Perspectives

The relationship between space and society is a multifaceted topic that has been explored across various disciplines. Scholars have delved into the interplay between social structures, relationships, and spatial practices to understand how society shapes and is shaped by physical spaces (Valentine, 2014). This dissertation aims to explore the role and impact of media architecture in urban public spaces by integrating Henri Lefebvre's theory of social space with Bill Hillier's space syntax methodology, thus revealing the underlying social and spatial logic of media architecture.

By integrating Lefebvre's social-spatial theory with Hillier's space syntax method, this dissertation comprehensively analyses media architecture's role and impact in urban public spaces, thereby deepening our understanding of modern urban complexities and offering innovative insights for urban planning and design. Henri Lefebvre's theory of social space provides a crucial theoretical framework for understanding urban space. Lefebvre posits that space is not merely a physical entity but a product of social relations and power structures. He argues that space is produced by social forces, reflecting the combined effects of capital, power, and culture (Lefebvre, 1974). Through this lens, media architecture is understood both as an embodiment of technology and design and a material manifestation of social practices and power relations. Complementing this perspective, Bill Hillier's space syntax methodology offers a micro-level analytical tool for examining the relationship between spatial configuration and social behavior. Space syntax uses quantitative and model-based techniques to uncover how spatial structures influence human behavior and social interactions (Hillier & Hanson, 1989). Therefore, this method is employed to specifically analyse the layout and configuration of media architecture in urban public spaces and investigate its effects on pedestrian flow, interactions, and social relationships.

3.4.4 Humanities and Audience Studies

While the positivist perspective focuses on researching, documenting, and quantifying the current state of media architecture in urban public spaces, postpositivism demands a more nuanced approach. This approach necessitates a multilayered perspective, where research design seeks to incorporate and accommodate the opinions and evaluations of viewers of media architecture.

3.4.4.1 Semi-structured Interviews

Semi-structured interviews present several advantages for studying media architecture in urban public spaces. These interviews provide a flexible approach that facilitates an in-depth exploration of the topic while still maintaining a certain degree of structure (Adeoye-Olatunde & Olenik, 2021). They enable researchers to focus on specific aspects of media architecture and concurrently permit the exploration of unforeseen concepts that might surface during the course of the interview, thereby augmenting the comprehension of the subject under investigation (Kao, 2021). Additionally, semi-structured interviews have been used effectively in collecting qualitative data related to architectural design, such as in the study on how the COVID-19 pandemic would change the future of architectural design (Alhusban et al., 2021).

In this study, a systematic semi-structured interview will be considered by emphasizing the role of the interviewee. Multiple levels of media architecture stakeholders with different identities, such as experiencers, designers and review experts, will be considered to uncover more expectations about media architecture in urban public space.

3.4.4.2 Multidimensional Assessment and Questionnaire

To conduct an architectural study of urban public space media using the Analytic Hierarchy Process (AHP), it is essential to consider the advantages of this method in decision-making and prioritization. The Analytic Hierarchy Process is a structured technique that helps in dealing with complex decisions by breaking them down into a hierarchy of criteria and alternatives, allowing for a systematic comparison of different factors (Vaidya & Kumar, 2006). This method provides a

framework for evaluating and ranking various aspects of urban public space media architecture based on functionality, aesthetics, sustainability, and user experience.

Questionnaires are valuable tools for capturing user perceptions and preferences regarding media architecture in urban public spaces. Studies illustrate how questionnaires can uncover trends in public space usage, attitudes toward urban initiatives, and the potential for ecological landscape architecture in urban environments (Daugelaite et al., 2018). By designing questionnaires that address the impact of media architecture on community spaces, urban aesthetics, and social interactions, researchers can obtain valuable insights into the role of architectural design in shaping urban experiences.

3.4.5 Brief of Data Collection Methods

This study's adoption of a post-positivist paradigm enables a nuanced investigation of Chinese expectations toward media architecture in urban spaces, recognizing both the value and limitations of diverse methodological approaches. By synthesizing media studies' content analysis, urban research's interdisciplinary environmental examination, sociology's spatial configuration theories (Lefebvre and Hillier), and humanities' audience perception methods, the research constructs a multidimensional analytical framework. This integrative approach allows for simultaneous examination of architectural content, urban contextual dynamics, socio-spatial relationships, and user experiences while acknowledging each method's inherent constraints - including potential content myopia in media analysis, theoretical-reality gaps in spatial syntax, and subjective biases in interview data. The methodological design consciously addresses these limitations through strategic interleaving of perspectives, creating compensatory mechanisms where one method's strengths counterbalance another's weaknesses. This carefully calibrated pluralism enhances the study's capacity to capture the complex interplay between technological mediation and cultural reception in Chinese urban contexts, while maintaining rigorous standards for data collection and analysis as the research progresses to its empirical phase. The framework ultimately provides a robust foundation for understanding how media architecture functions as both aesthetic object and social practice within China's distinctive urban development paradigm.

3.5 Sampling and Saturation Strategy

A scientifically sound sampling strategy is crucial when researching Chinese people’s expectations of media architecture in urban public spaces. First, the target population of this study includes various groups with expectations and opinions about media architecture in urban public spaces. These groups specifically include urban residents, media architecture designers and planners, city managers and decision-makers, media and advertising professionals, and sociologists and urban studies scholars. Defining the target population helps to ensure the focus and effectiveness of data collection. The sampling frame is the complete list from which the sample will be drawn (Acharya et al., 2013). In this study, the sampling frame will include lists of residents in different urban areas (such as city centres and suburbs), members of designer associations, and lists of staff from city management departments. Ensuring the completeness and diversity of the sampling frame is key to obtaining a representative sample (Battista, 2002).

Based on the research objectives and available resources, this study will integrate probability and

non-probability sampling methods to ensure a comprehensive and representative data collection process. For the probability sampling, cluster sampling will be utilized. This approach involves grouping the target population by geographic areas or other relevant characteristics then randomly selecting specific clusters for inclusion in the study. Cluster sampling is particularly suitable for large-scale surveys, allowing for efficient data collection across a broad population (Sedgwick, 2014, p.348). In addition, purposive sampling will be employed as the non-probability sampling method. This technique involves deliberately selecting individuals with valuable insights relevant to the study (Rai & Thapa, 2015, p.8), such as media architecture designers and city managers. The selection criteria will contribute meaningful information to the research by focusing on their expertise and potential .

The sample size will be determined based on the study's scope and available resources to achieve a sufficiently large sample to ensure both representativeness and statistical power (Gentles et al.2015). Adherence to the chosen sampling methods will be strictly maintained to uphold the randomness and representativeness of the sample. Following data collection, the sample will undergo validation procedures to assess its representativeness and completeness. By implementing this comprehensive sampling strategy, the study aims to ensure the scientific validity of the collected data. This rigorous approach will provide a reliable foundation for understanding Chinese citizens' expectations regarding media architecture in urban public spaces.

Grounded Theory is a qualitative research method focusing on developing theories through systematic data collection and analysis. In this approach, data saturation plays a critical role. Data saturation is the point in data collection where new data ceases to provide additional theoretical insights or categories (Saunders et al., 2017, p.1901). It is a methodological principle widely accepted in qualitative research (Saunders et al., 2017, p.1893). When saturation is utilized outside the framework of Grounded Theory, it may become detached from the iterative procedures of sampling, data collection, and analysis. These procedures are of utmost importance for its proper and efficacious implementation (Hennink et al., 2016, p.597). Grounded Theory involves theoretical sampling, which is a key component in reaching saturation (Nelson, 2016, p.555). The process of theoretical sampling, inherent in Grounded Theory, is crucial for achieving saturation in qualitative research (Nelson, 2016, p.566). This method allows for developing theory grounded in systematically gathered and analysed data (Bowen, 2008, p.138). The constant comparative method in the Grounded Theory involves moving back and forth between codes, categories, data, and the evolving theory, ensuring that the theory is firmly grounded in the data (Cilesiz & Drotos, 2014, p.12).

In this study, we will adhere to three principles of saturation: conceptual saturation, category saturation, and theoretical saturation. Conceptual saturation is defined as the point at which the collection of new data no longer results in the generation of new concepts or categories (Nelson, 2016, p.555). This will be assessed through a systematic examination of the data to identify recurring concepts. When the analysis of new data repeatedly confirms existing concepts without introducing novel ones, conceptual saturation will be considered to be achieved (Thornberg & Charmaz, 2014, p.168). Category saturation occurs when the properties and dimensions of each category are fully developed, and no additional properties or dimensions emerge from further data

collection (Nelson, 2016, p.560). To determine this, each category will be scrutinized to ensure that all possible attributes and dimensions have been comprehensively described and understood. If new data fails to expand the attributes or dimensions of the categories, the categories will be regarded as saturated (Nelson, 2016, p.560). Theoretical saturation is defined as the stage at which the explanatory power and complexity of the developed theory are sufficient to account for all observed phenomena within the data (Nelson, 2016, p.567). This will be evaluated by reviewing the theoretical framework to ensure that it can adequately explain all the collected data. When new data does not enhance the explanatory power or complexity of the theory, it will be considered that the theoretical saturation is achieved.

Constant comparative method, code saturation check, participant saturation, and theoretical validation will be employed to ensure the adequacy of the research data and the completeness of the theoretical framework (Glaser, Strauss,1967; Ando et al., 2014; Guest, 2014). This rigorous approach will ensure that the study is both comprehensive and robust.

3.6 Chapter Summary

This chapter presents a three-phase methodological framework to address the research gap through systematic investigation of media architecture in Chinese urban contexts (Figure 9). Grounded in post-positivist philosophy and grounded theory methodology, the approach combines methodological pluralism with adaptive rigor to examine both objective manifestations and subjective experiences of media architecture.

This structured approach enables comprehensive examination of media architecture while maintaining methodological coherence. The framework not only addresses current research limitations but also establishes a replicable model for interdisciplinary urban media studies, balancing empirical analysis with theoretical development. By systematically documenting the interplay between technological mediation and cultural practice in Chinese cities, the methodology provides foundations for future comparative studies of digital placemaking across diverse urban governance contexts.

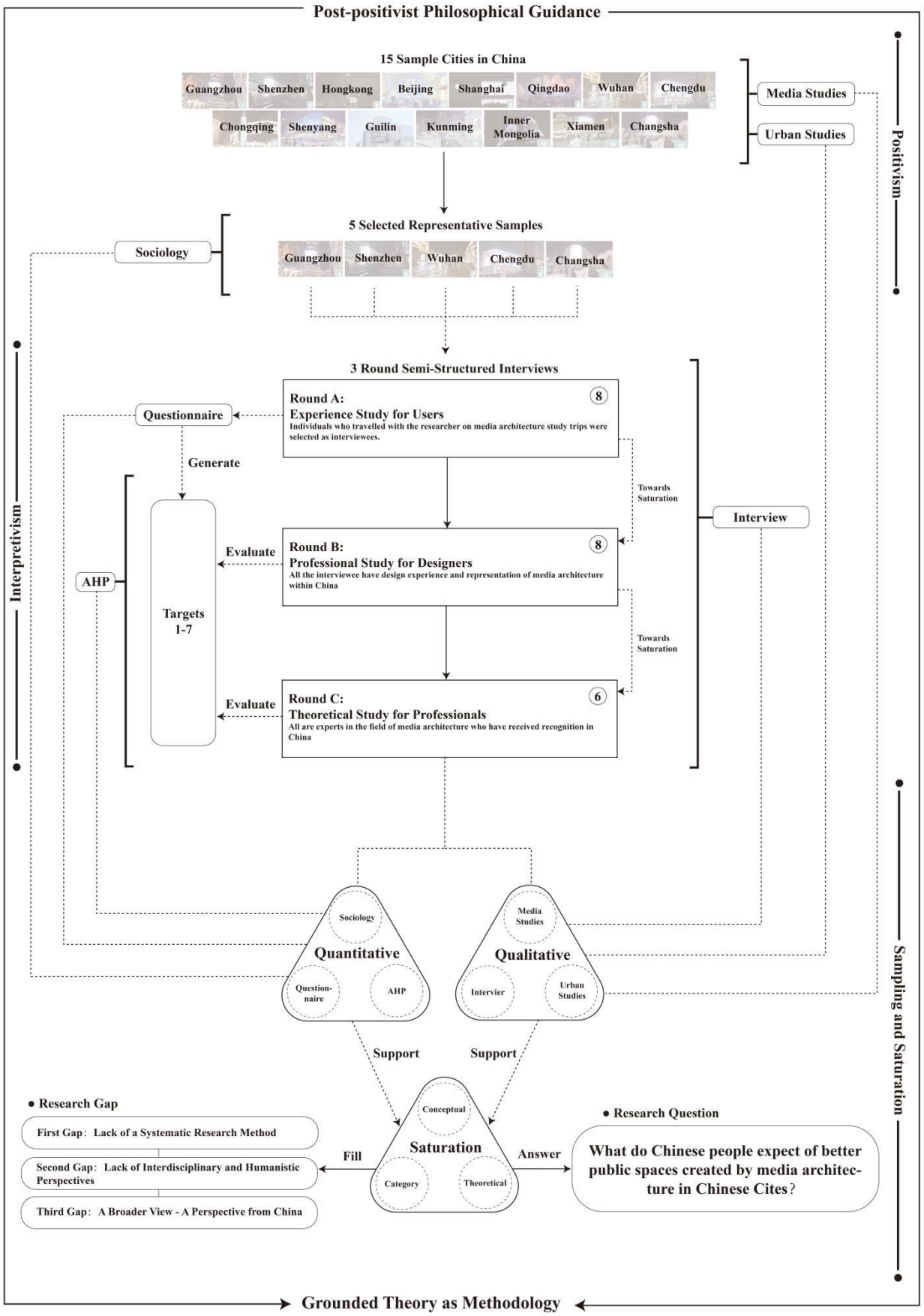


Figure 9. Research Steps and Framework

CHAPTER FOUR

DATA

4.1 Introduction

Following the Research Steps and Framework (Figure 9), this research consists of three important parts and is guided by a post-positivist philosophy, with grounded theory as the research methodology for data collection. The first part of data collection adheres to a positivist methodology, which encompasses research on the walking records of 15 cities in China, investigations in media and urban studies, and an in-depth examination of five exemplary cities by means of the perspectives and tools of sociology research. The second part of data collection adopts an interpretivist approach, utilizing grounded theory methodology to conduct multiple rounds of semi-structured interviews and questionnaires, combined with the Analytic Hierarchy Process (AHP) for multidimensional assessment. The third part involves sampling and saturation testing, using both probability and non-probability sampling methods, and three types of saturation (conceptual, category, and theoretical) to ensure saturation reflection. At the end of data collection, a triangulated evaluation combining quantitative and qualitative research will be conducted to test and validate the study data, providing a basis for data processing and discussion in subsequent chapters.

4.2 Positivism Research

Positivist research studies are characterized by their emphasis on empirical evidence, observable data, and the identification of patterns and trends (Salzmann-Erikson, 2024). Positivist researchers prioritize the search for regularities and causal relationships in reality through non-statistical means, aiming to generalize findings based on identified patterns (Bonache 2020, p.37). They consider criteria such as internal validity, reliability, construct validity, and external validity as essential for ensuring the quality of research (Healy & Perry, 2000, p.118). The positivist paradigm advocates for quantitative research methods, focusing on precision, accuracy, and reliability in data collection and analysis (Mingers, 2001, p.240).

In this research, media studies focus on the direct recording and understanding of media architecture phenomena in urban public spaces in China, emphasizing empirical evidence and data observed during the urban walking research process. Urban studies emphasize recording and classifying existing media architecture phenomena in public spaces using urban imagery theory, aiming to identify patterns or causal relationships regarding their location and role in the city. The sociology research aspect adheres to a certain level of internal institutional dependability. It draws inspiration from Lefebvre's comprehension of space and society and concurrently utilizes the spatial syntax of quantitative research to investigate media architecture within urban public spaces.

4.2.1 Media Studies

Between 2022 and 2023, the researcher travelled to more than 20 cities in China and finalised 15 cities with public space media architecture as the research objects. These 15 cities are mainly located in southeastern China (Figure 10). The selected cities included Guangzhou, Shenzhen,

Hongkong, Guilin, Kunming, Chengdu, Chongqing, Changsha, Wuhan, Xiamen, Shanghai, Qingdao, Beijing, Shenyang, and Inner Mongolia. The south-central part of China, which has better economic conditions (Li & Ren, 2023), is also considered in the research. The reason for focusing on southeastern China is that it is commonly known that construction in this region depends on economic growth (Schielke & Ma., 2021, p.221).

Figure 10. Media Studies of Media Architecture in Urban Public Space

Media architecture also supports its content operations by highly relying on commercial and economic development. After travelling, observing, and documenting these 15 cities, a sample of media architecture in prominent public spaces in the cities was selected and corresponding themes and content were qualitatively summarised (Figure 11). The vast majority of media architecture was found to be broadcasting commercial content, with only three of the selected 15 samples not displaying commercial content, namely two art museums and large urban clusters. Media architecture is closely intertwined with commercial advertising and economic development. The relationship between media architecture and commercial advertising is crucial for sustaining economic growth and viability. Commercial advertising significantly influences the design, functionality, and purpose of architectural structures within the media landscape (Hudders et al. 2017). The economic development of regions is often linked to the presence of media architecture, as these structures serve as platforms for advertising and revenue generation (Keser, 2016). Furthermore, integrating advertising into media content, including architectural elements, is a common practice aiming to maximize profits and attract audiences (Dukes, 2006).

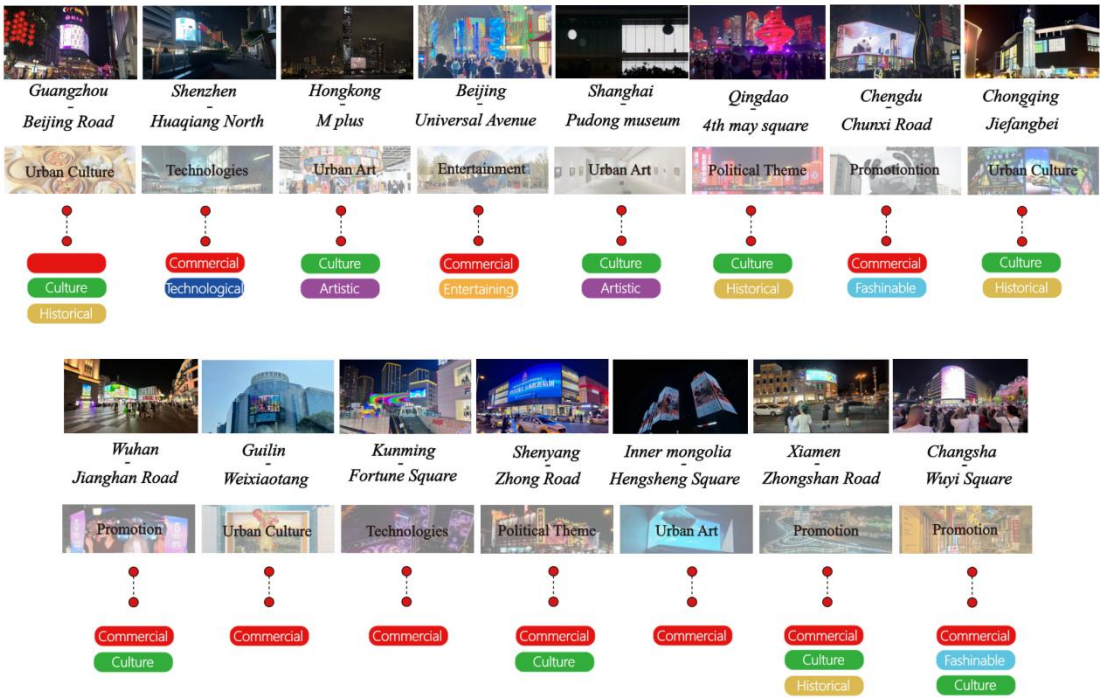


Figure 11. Content of Media Architecture in City Samples

By further exploring and excavating the media content of media architecture and categorising it according to the situation, it is found that it can be mainly categorised into three attributes of media architecture in China (Table. 5). As Schielke and Ma mentioned that the Chinese media landscape presents a unique ecological system (Schielke & Ma, 2021, p.221), and Chinese media architecture should present and excavate its unique personality. Unlike MAI's definition of media architecture types, Chinese media architecture has a strong political and propagandistic character. Due to the high construction, content management, and operation costs, it tends to present only a small portion of the content, most of which is controlled by media companies run by the Chinese government. City Advocate is a typical form of media architecture in China, which was primarily designed to promote the city's image and disseminate government notices. These structures are often located in central city areas and use promotional videos to showcase the city's appearance. In areas with good transport links, people often see media architectures aimed at promoting commercial advertisements and products, which helps to boost the local economy. This type is commonly surrounded by street vendors and bustling markets called Hawkers. Another type of media architecture, known as "partygoers", focuses more on creating an atmosphere through the use of light, shadow, and color rather than presenting the information, and it can significantly enhance the city's nightscape and overall nighttme ambiance.

Table 5. Sample Classification of Chinese Media Architecture

Category	Location	Audience	Content	Aims
City Advocate	Most central	Visitors	City Promotion Video	Creating a city image
Hawkers	High-traffic areas	Residents	Commercial advertising	Sale of merchandise
Partygoers	Random	Consumers	Consumer Decisions	Creating a playable city

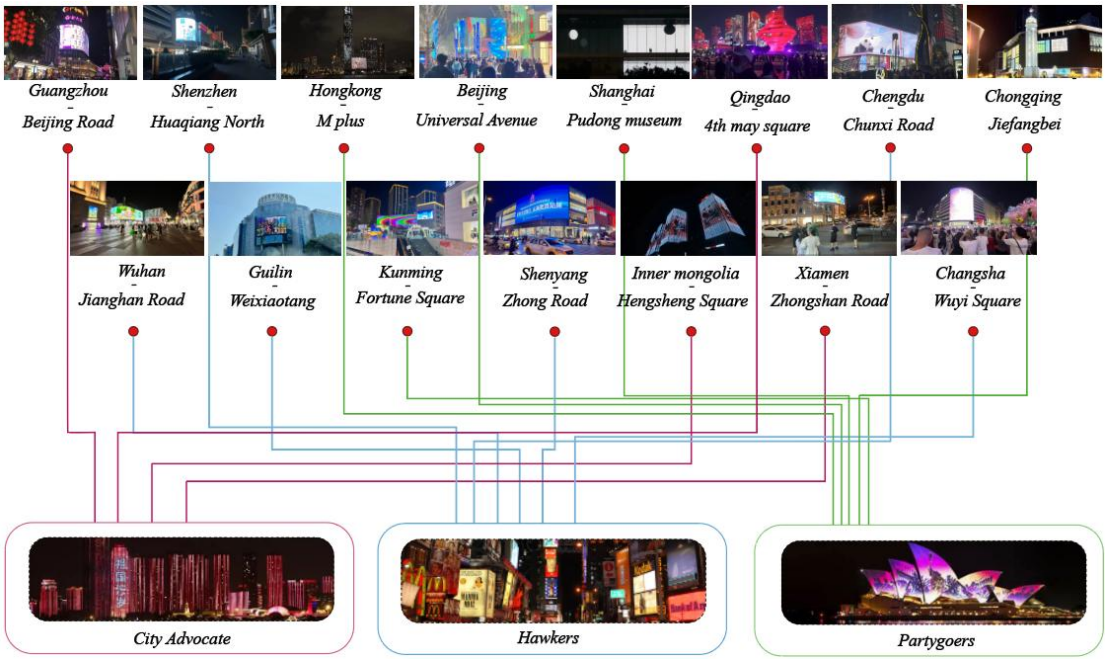


Figure 12. Classification of Media Architecture

Media architecture has an outstanding advantage through its content at the level of highlighting the city's image, promoting commercial messages, and contributing to its visual imagination. Media architecture plays a significant role in enhancing its visual imagination. Dynamic colours and visual elements are considered important causes for the visual imagination of the environment (Hansen & Machin, 2013). Media architecture integrates art, technology, and urban design to create visually engaging and interactive structures that contribute to the aesthetic appeal and cultural identity of urban spaces. By incorporating visual communication and informational impact, media architecture has the potential to transform how people perceive and experience the city environment (Ptichnikova, 2019). Creative design in urban spaces, including the use of public art, unique architecture, and visual media, significantly influences urban living experiences and shapes the overall ambiance of the city (Razali 2023, p.31). City Advocate, Hawkers or Partygoers all create subjects for urban public spaces in China that provoke the visual imagination of the environment.

4.2.2 Urban Studies

According to Kevin Lynch's theory, the role of media architecture in urban environments can be understood through several key elements. First, media architecture is often located in areas with convenient transportation and high foot traffic, enhancing the legibility and memorability of these paths (Colangelo, 2014). Second, media architecture can serve as spatial boundaries within the city, clearly delineating specific functional zones and emphasizing the importance of certain areas. For example, media architecture of Huangqiang North around commercial centres or municipal squares defines the boundaries and functions of these areas. Additionally, the media architecture of Chunxi Road reinforces the characteristics of different districts by enhancing the commercial nature of business districts through advertisements and product promotions or highlighting the cultural qualities of cultural districts through artistic displays.

Media architecture is also commonly found at urban nodes such as squares, transport hubs, or major intersections, becoming focal points for gathering and interaction (Figure 13). It reinforces the significance of these nodes through visual and informational dissemination. Finally, media architecture itself can become a landmark in the city. Its unique design, prominent location, and striking content make it an important reference point for orientation. For instance, the media architecture of Hengsheng Square serves as a notable landmark in Inner Mongolia. The media architecture not only serves as a tool for information dissemination but also strengthens the spatial structure and image of the city in terms of paths, edges, districts, nodes, and landmarks. This enhances the city's legibility and memorability while improving its functionality and visual appeal.

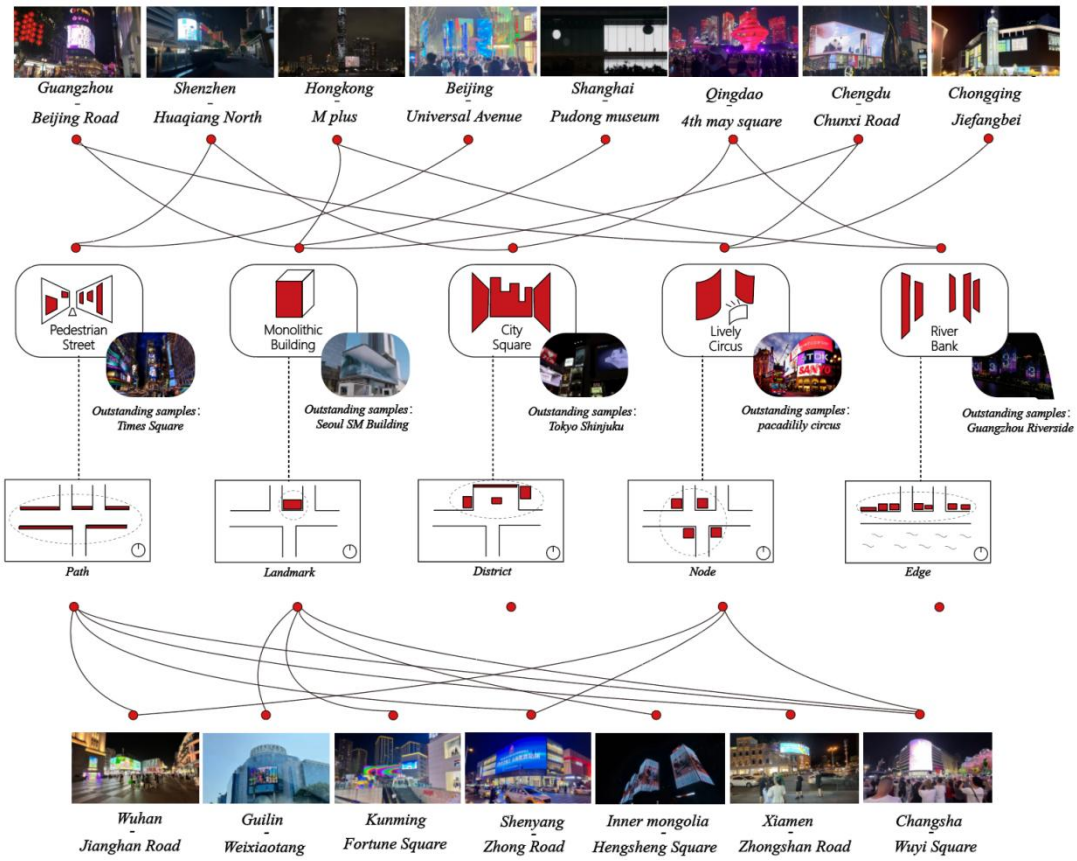


Figure 13. Media Architecture in the Understanding of the Image of the City

Building on this foundation of media architecture understood as the image of the city, the advancement of digital placemaking in the dynamical city has further underscored the importance of media architecture. In Lynch's later work, he emphasised the significance of dynamics in urban studies and added the concept of time to urban studies (Lynch, 1984, p.158). Digital placemaking refers to using digital media to create a sense of place for oneself and others, leveraging digital media capabilities to cultivate or maintain an attachment to that place (Halegoua & Polson, 2021). The construction of media architecture is understood as a significant manifestation of the relationship between architectural dynamics and the playable city, and this digital placemaking is also considered as a connection between bits and atoms (Foth, 2017, p.205). The interactive screens and projection technology can transform ordinary public spaces into vibrant hubs of

activity, promoting social interaction and enhancing the overall urban experience. Moreover, the flexibility of media architecture allows its application in various environments and scales, from small installations in local communities to large displays in metropolitan areas, aiming to cater to diverse needs and preferences. Therefore, media architecture plays a crucial role in creating digital places and making urban spaces more connected, dynamic, and meaningful. This not only enhances the visual appeal of the city but also strengthens residents' and visitors' sense of place and belonging, further driving urban development and innovation.

4.2.3 Sociology Research

The application of a social perspective to the study of media architecture is well-supported by the theoretical foundations laid by Henri Lefebvre in *The Production of Space* (Lefebvre, 1974) and Bill Hillier in *The Social Logic of Space* (Hillier & Hanson, 1989). These seminal works investigate the social and structural dimensions of space from different perspectives, providing a robust framework for understanding the role of media architecture in urban environments. Building on these theories, it is possible to extend their application to the concepts of the spatial triad and space syntax. Although the spatial triad and space syntax originate from different theoretical backgrounds and research traditions, they exhibit certain correlations and complementarities in studying and understanding space. The spatial triad focuses on the production and experience of social space, emphasizing its social, cultural, and political dimensions, and proposes that space consists of spatial practice, representations of space, and representational spaces (Baydar et al., 2018). In contrast, space syntax concentrates on the formal and functional relationships of spatial configurations to analyse spatial structures and their impact on human behavior and social interaction through mathematical and graph-theoretical methods (Karimi, 2012).

In terms of understanding space, there are direct connections between Lefebvre and Hillier (Mavridou, 2003; Griffiths & Vaughan, 2020). Spatial practice involves how people use and experience space in their daily lives, which directly relates to space syntax's analysis of spatial accessibility, connectivity, and visibility. Space syntax provides quantitative tools to understand the specific manifestations of spatial practice, such as densely populated areas and commonly used paths (Van Nes & Yamu, 2021, p.250). Representations of space involve the conceptual presentation of space through urban planning and architectural design, which aligns with space syntax's methods of analyzing urban planning and building layouts. Both approaches focus on the impact of spatial design and configuration on human behavior (Mavridou, 2003, p.17). Representational spaces involve the symbolic and cultural meanings of space. Space syntax, through analyzing spatial visibility and interaction, can indirectly reflect the symbolic and experiential aspects of space. For example, spaces with a high level of integration might possess substantial social and cultural significance within representational spaces.

Mixing the two research methods allows for a more thorough study of media architecture in urban public space from a social perspective. The spatial triad is mainly qualitative, emphasizing the social and cultural significance of space (Ilako et al. 2020), whereas space syntax provides quantitative methods to measure and analyse spatial structures (van & Yamu, 2017). The integration of these two methodologies furnishes a more exhaustive vantage point for spatial

research. The spatial triad presents a macro-theoretical framework, while space syntax provides specific analytical tools and methods. Collectively, they enable the comprehension of the intricacy of space spanning from macro to micro dimensions. Therefore, integrating the spatial triad with space syntax not only offers a more holistic framework for understanding and analyzing space but also provides richer theoretical support and practical guidance for urban planning and architectural design (Khairanisa, 2022; Wang et al. 2024). This combination helps reveal the multi-dimensional attributes of space, promotes the advancement of spatial research, and drives innovative applications in practice.

In addition, in this phase of the research, the object of the study was focused on 15 Chinese cities to five cities with a special tendency of strong samples, which are Guangzhou, Shenzhen, Changsha, Chengdu, and Wuhan. Firstly, these five cities show a more concentrated distribution of media architecture in public spaces than the samples collected from the other cities, which is helpful for the researchers to collect and evaluate as a group. Secondly, these five cities are popular urban tourism destinations, and conducting social research in these five cities will help to collect more and different data.

4.2.3.1 Spatial Triad Analysis of Media Architecture

Lefebvre's spatial triad is an important concept in the study of spatial theory (Gottdiener, 1994). He divided the production and experience of space into three interrelated dimensions, Spatial Practice, Representations of Space and Representational Space (Lefebvre, 1974, p.33). Spatial Practice refers to how people interact with and use space in their everyday lives, emphasizing the physical and material aspects of space (Lefebvre, 1974, p.38). Representations of Space involve the conceptualization and symbolism of space, often tied to maps, plans, and ideologies constructed by planners, architects, and scientists (Lefebvre, 1974, p.39). Representational Space is about the lived experiences and symbolic meanings attached to space, often expressed through art, literature, and social practices (Lefebvre, 1974, p.39). These three dimensions are interrelated and mutually reinforcing, forming the basis of Lefebvre's argument that space is not merely a backdrop for social activities but is actively produced by them.

In this research, the spatial triad is used to understand the five selected cities and the Spatial Practice dimension documents how the existing people on the site use and experience media architecture in their daily lives. Representations of Space will document how these media architecture are designed and placed in urban planning, reflect on the relationship between the urban neighbourhoods and these media architecture, and think about the relationship between urban areas and these media architecture. Representational Space will further consider how the screens of the media architecture express the urban graphic through their content and reflect people's individual and collective perceptions of space at a socio-cultural and psychological level.

4.2.3.1.1 Guangzhou Media City Map of Beijing Road Pedestrian Street

In terms of spatial practice (Figure 14), Beijing Road Pedestrian Street is a famous historical, cultural, and commercial pedestrian street in Guangzhou, where media architecture is involved in the production of space. Its physical layout and usage reflect the typical characteristics of a modern urban commercial area. Various shops, restaurants, and shopping centres line both sides of

the street, along with many historical sites and cultural attractions. The area is designed exclusively for pedestrians, providing spacious walkways and comfortable resting areas, with no vehicular traffic allowed. Beijing Road Pedestrian Street is a bustling commercial district that attracts numerous residents and tourists daily for shopping and sightseeing. Beyond commercial activities, the street regularly hosts cultural events and festivals, such as exhibitions, street concerts, and traditional holiday celebrations, fostering community interaction and cultural exchange. The high commercial value of the area reflects Guangzhou's economic vitality, drawing significant investment and commercial activities that boost the local economy. The media architecture of Beijing Road Pedestrian Street enhances the attractiveness of the commercial area by drawing customers through dynamic advertisements, electronic screens, and interactive installations, such as samples B and K, which feature promotional videos for a cinema and a goldsmith store (Sample B & K of Figure 14). These media elements have made the pedestrianised street a more vibrant and modern place for shopping and leisure, and in some cases, has even become a travelling destination, boosting commercial activities and foot traffic (Sample H of Figure 14). At the same time, media architecture can provide real-time information such as news, weather forecasts, traffic conditions and upcoming events, making it easy for pedestrians to access information (Sample E of Figure 14). Meanwhile, interactive information screens and guided tours help visitors better understand the facilities and attractions in and around the pedestrianised streets, enhancing the visitor experience (Sample G of Figure 14).

From the perspective of representations of space (Figure 15), the planning and design of Beijing Road Pedestrian Street reflects the characteristics of a modern commercial pedestrian street, and the media architecture plays a unique role in conformity with the overall planning characteristics. Urban planning documents and maps of the area illustrate its detailed layout and functional zoning, facilitating an understanding of its spatial structure and usage. The architectural styles are diverse, ranging from modern malls to traditional buildings, showcasing Guangzhou's rich history and culture. Media architecture is an important part of urban planning and design, shaping the modern image of the pedestrian street through unique design and high-tech displays. These buildings are not only part of the physical space but also convey the image of Guangzhou as an international metropolis through visual elements (Such as the corner which media cluster H, J, I). The development of the pedestrian street reflects the economic and cultural intentions of local government and commercial entities, aiming to enhance the city's image, promote economic development, and preserve and showcase local cultural heritage. Beijing Road Pedestrian Street underwent a complete refurbishment between 2018 and 2020, with the full transformation officially completed around 2021. The modernization of infrastructure, such as lighting, public restrooms, and informational signage, further increases the area's convenience and appeal. Media architecture is often used to convey government promotional messages and public service announcements while displaying commercial advertisements. These messages reflect the intentions and values of the government and commercial organisations and are a tangible expression of power and ideology in the space (Sample A of Figure 15).

In the dimension of representational space (Figure 16), Beijing Road Pedestrian Street is rich in cultural expression and symbolic significance, and the screen of the media architecture becomes a tool for cultural reproduction. Historical sites within the area, such as the Song Dynasty road ruins

and Ming and Qing Dynasty buildings, enhance the cultural depth of the region. The media architecture reinforces the historical narrative of the place. For example, the cultural images shown on Screen I reinforce the historical and cultural atmosphere of the site. Public art, sculptures, and cultural markers reflect Guangzhou's historical and cultural traditions, serving as important vehicles for cultural expression (Sample I of Figure 16). The area also holds significant emotional and mnemonic value for many Guangzhou residents and visitors, representing a part of urban life. Its unique atmosphere and vibrant commercial activities make it a lively urban space. Sample M was originally a historical structure in the area. Due to recent renovations, LED light strips that can change colors based on daily events and celebrations have been installed on its facade. This allows the building to better integrate with its surroundings and creates a facade that residents and travelers can interpret (Sample M of Figure 16). People have a strong sense of belonging and identity associated with this area; the pedestrian street is not only a place for shopping and entertainment but also an integral part of citizens' daily lives. Beijing Road Pedestrian Street is widely represented on short videos in social media, showcasing urban life and culture in Guangzhou. Media and promotional efforts have also established it as a commercial and cultural landmark in Guangzhou, enhancing its public image. The media architecture showcases Guangzhou's culture and history through digital displays, light shows, and interactive art installations. For example, through video displays and light shadow projections, the media architecture can tell stories about Guangzhou's history, display local artworks and enhance the cultural atmosphere of the pedestrianised street (Sample C & H of Figure 16).

The media architecture advertising map of Guangzhou is the result of economic considerations, designed to target different audiences for optimal content delivery. An intriguing phenomenon observed during the study is the variation in the types of advertisements based on the geographical location of the screens and the nature of their advertisements. For instance, Sample A is located at the entrance of the pedestrian street, marking the boundary between the pedestrian and vehicular zones. A large number of pedestrians enter the street from this point. Consequently, the commercial advertisements displayed here are for shops within walking distance, such as mobile phone stores and jewelry stores (Sample A of Figure 16). Sample L is situated along a vehicular road, with the screen positioned at a building corner where it is clearly visible to drivers. Therefore, the advertisements displayed here typically promote real estate properties located approximately 10 to 30 kilometres away from Sample L (Sample L of Figure 16). Sample G is associated with the Tianhe City Department Store, which names its screen "Eye of Guangzhou". The advertisements on this screen predominantly promote commercial events or activities occurring across China. The primary goal is to attract visitors and spectators within the pedestrian street, thereby enhancing the visibility and recognition of these events (Sample G of Figure 16).

Beijing Road Pedestrian Street exemplifies the successful integration of media architecture within urban planning, enhancing both functional and symbolic aspects of urban space. The dynamic use of media elements not only attracts commercial activity but also reinforces cultural identity and historical continuity. This approach underscores the role of media architecture in shaping contemporary urban experiences, making it a critical tool for urban planners who strive to create spaces that are both economically vibrant and culturally resonant. The refurbishment and modernization efforts highlight the ongoing commitment to maintaining the area's relevance and

appeal, ensuring that it remains a vital part of Guangzhou's urban fabric. Through its blend of commercial vitality, cultural heritage, and modern technology, Beijing Road Pedestrian Street stands as a testament to the potential of thoughtful urban design to foster a lively and meaningful public realm.

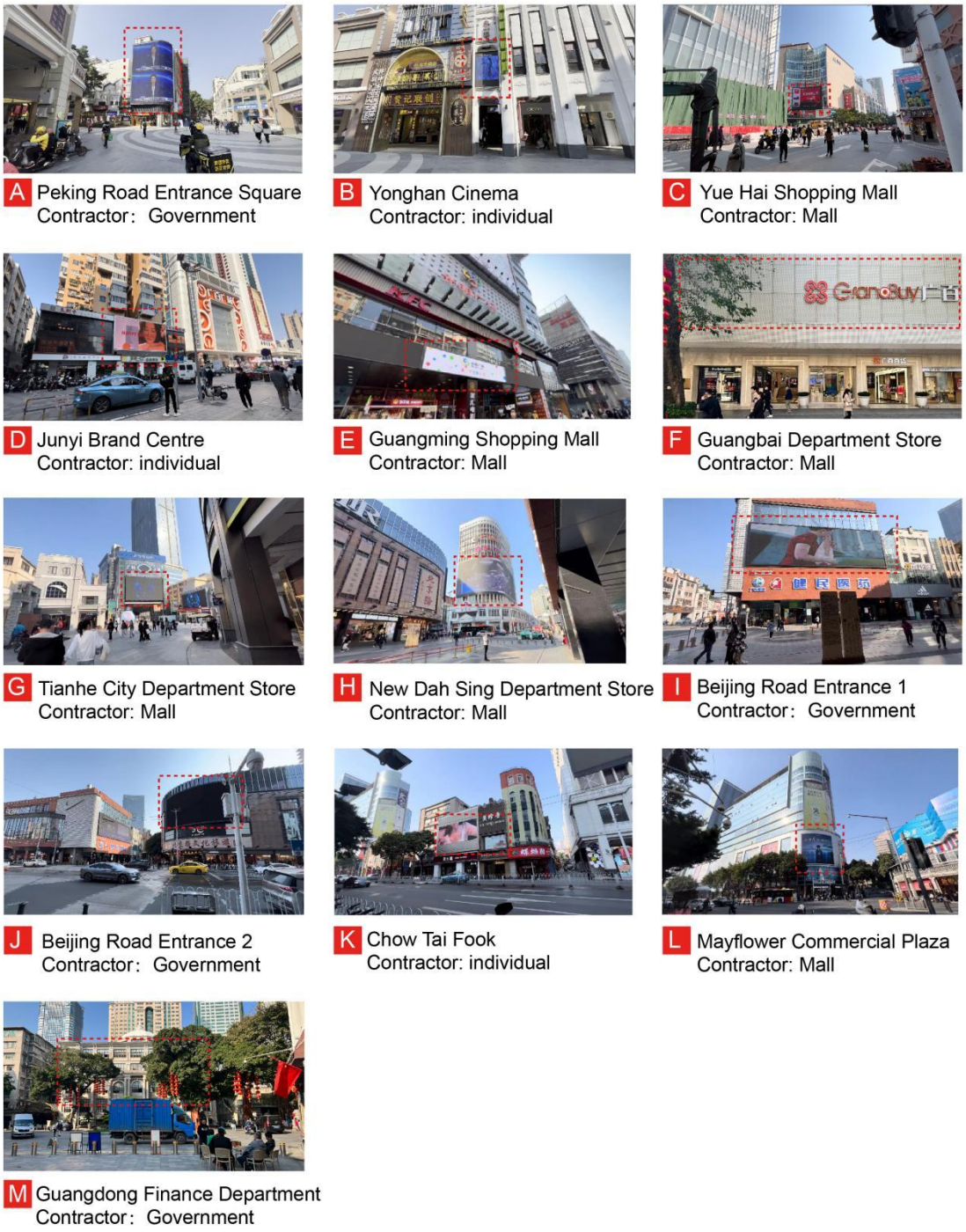


Figure 14. Spatial Practice of Guangzhou Media City Map

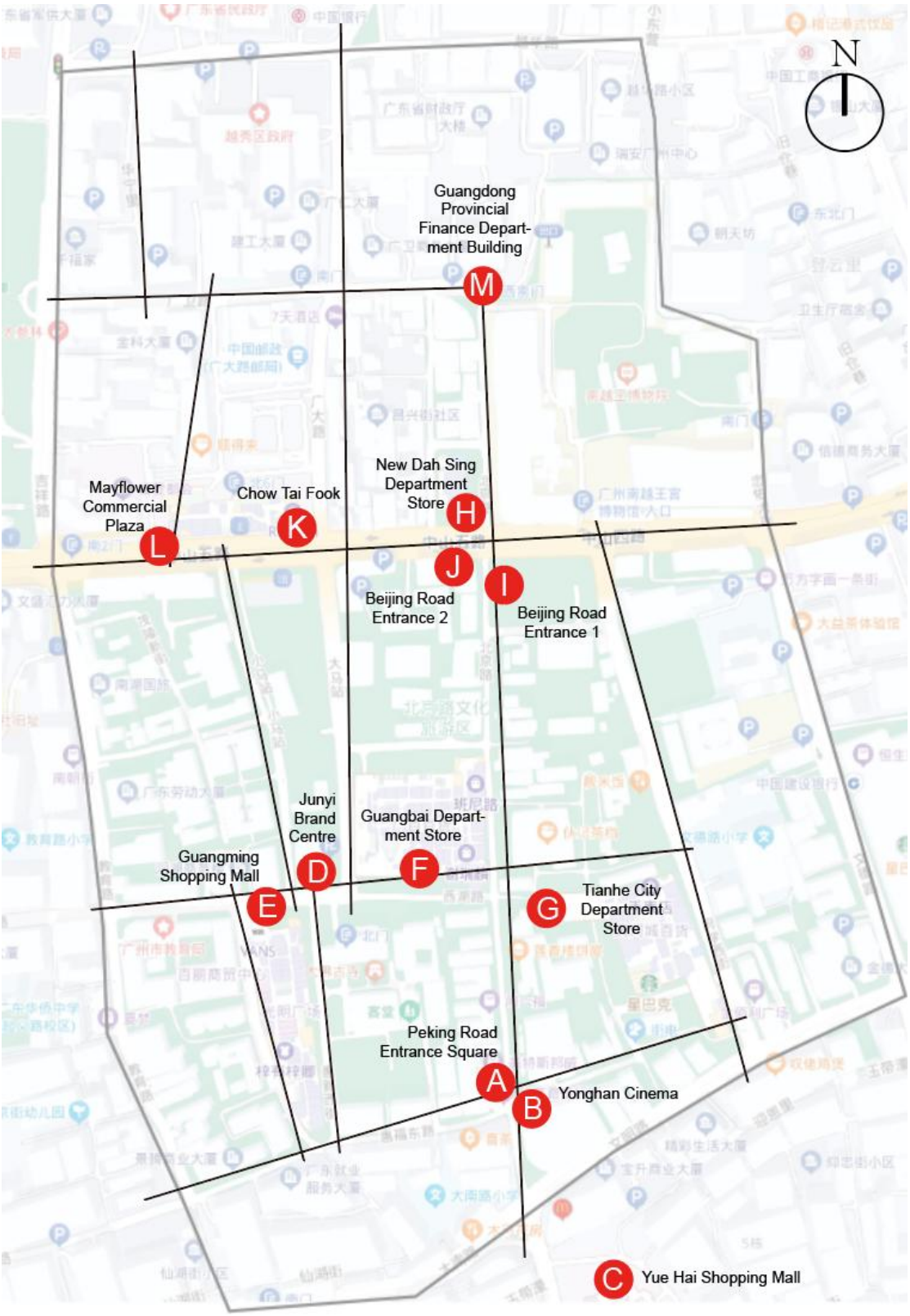


Figure 15. Representations of Space of Guangzhou Media City Map

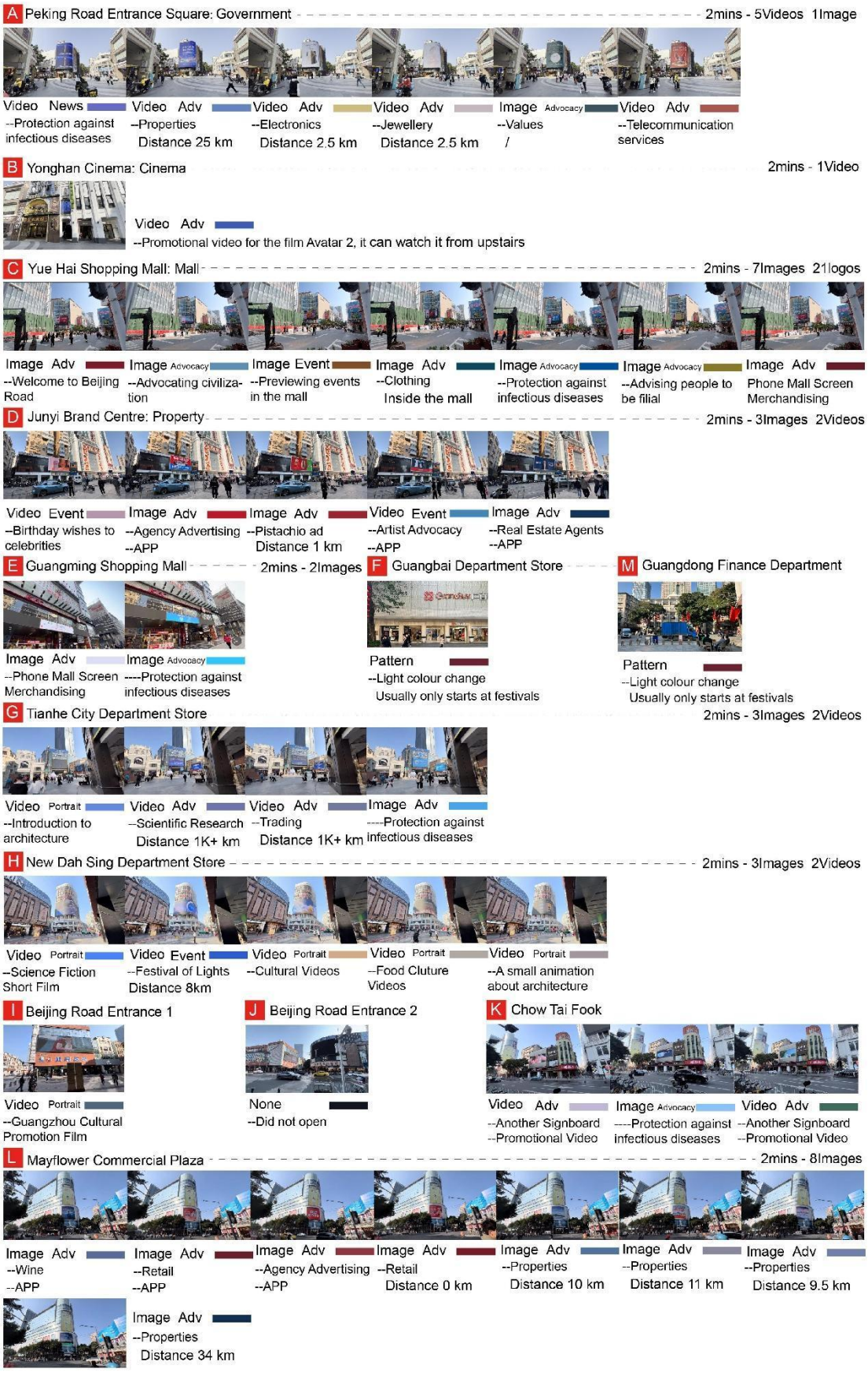


Figure 16. Representational Space of Guangzhou Media City Map

4.2.3.1.2 Shenzhen Media City Map of Huaqiang North

Thinking in terms of spatial practice (Figure 17), Huaqiang North Technology Pedestrian Street, with its unique spatial layout and integration of media architecture, efficiently produces a vibrant commercial ecology focusing on the electronics market, which strongly promotes the intersection of economy, technology and culture. Huaqiang North Technology Pedestrian Street is a busy commercial area known for its electronics market. Its physical layout consists of a multi-storey electronics market (Samples B, C, D, E, and G of Figure 17), a large shopping centre (Samples A and H of Figure 17) and a pedestrian zone. The street design prioritises pedestrian convenience and restricts vehicular access to promote increased commercial activity and foot traffic. Major activities in this area include wholesale and retail sales of electronics, repair services, and technology-related business transactions, and media architecture are utilised for electronics advertising (e.g., Sample D, E of Figure 17). In addition, the area is an important gathering place for technology enthusiasts, entrepreneurs and technicians looking for the latest electronic components and equipment. Huaqiang North Commercial Area attracts a large number of traders and customers from different backgrounds, creating a diverse business ecosystem, and the high intensity of economic activities has led to the development of neighbouring supporting services, such as catering, accommodation and logistics services. Shops in the area are usually operated by small business owners who form a close business network with their suppliers and customers, and the vast majority of the electronic screens at the site are attributed to the malls or the vendor community itself. Media architecture is thus observed to play an important role in Huaqiang North Commercial Area's spatial practices. Firstly, these buildings attract a large number of people through digital displays, interactive installations and billboards, which enhance the vibrancy of commercial activities (Sample F of Figure 17). The media architecture on the Pedestrian Street displays the latest information on electronic products and promotional activities, providing an effective promotional platform for the merchants and promoting the sales of their goods (Samples D and E of Figure 17).

In the representations of the Space dimension (Figure 18), the Huaqiang North Commercial Area neighbourhood was renovated by government planning and media architecture to strengthen its position as a global market for electronic products, highlight Shenzhen's strength in science and technology innovation, and optimise its spatial layout with digital technology. The Huaqiang North Commercial Area Science and Technology, Fashion, and Cultural Characteristics Neighbourhood completed its phased upgrading and renovation work in August 2021, with the government and planners working through infrastructure improvements and spatial reorganisation to ensure that the area was able to accommodate a large number of commercial activities and foot traffic and constructed many media architectures during the Huaqiang North renovation. Through digital technology and visual design, the media architecture visually displays the zoning and commercial layout, making the functional zoning and commercial characteristics of the entire neighbourhood clearer (the section of the road from Sample B to Sample J is the main transformation area in Figure 18). In addition, in promoting the transformation and development of Huaqiang North Commercial Area, the government has demonstrated its support and attention to the technology industry. Through policy support and infrastructural investment in media architecture, the government intends to build Huaqiang North Commercial Area into a globally recognised marketplace for electronic products and technology, reflecting Shenzhen's overall

strategy as a city of technology and innovation. For example, the giant LED screen and technology-rich architectural design of Saige electronics market not only displays advertisements for electronic products but also conveys the high-tech atmosphere and modern image of the area (Sample B of Figure 18).

The dimensions of representational Space (Figure 19), the media architecture reinforces the narrative that Huaqiang North Commercial Area is not only a commercial area but also a symbol of Shenzhen's history as China's "First Street of Electronics" and the spirit of technological innovation. For many Shenzheners and tourists, Huaqiang North Commercial Area is a symbol of technology and innovation. In this place, they can feel the latest trends and market dynamics of electronic products. Many people have deep memories of this place, whether it is searching for their favourite electronic products or struggling in the early days of entrepreneurship. The role of media architecture in reproducing space is reflected in their enhancement of the symbolic meaning and cultural value of the space. Media architecture in Huaqiang North not only displays commercial information but also enriches the cultural experience of the area through artistic visual effects and interactive installations. For example, the changing contents and light colours of Huaqiang Electronics World not only attracted a large number of tourists but also became a popular spot for the public to take photographs of the area, adding to its cultural appeal and uniqueness (Sample D of Figure 19). Huaqiang North has been mentioned many times in literature, films and media, reinforcing its position in the public mind. Reports and documentaries about stories of entrepreneurship in Shenzhen often use the Saige electronics market in Huaqiang North as a backdrop to showcase its image as a pioneer of innovation and technology (Sample B of Figure 19). These media architecture enhance Huaqiang North Commercial Area's cultural symbolism by combining technology and art through visual and interactive experiences. They reflect the spirit and dynamism of Shenzhen as an innovative city and become part of the city's cultural landscape, further reinforcing the public's collective memory and identity of Huaqiang North Commercial Area.

Huaqiang North Technology Pedestrian Street stands as an experiment to the harmonious integration of commerce, technology, and culture within urban spaces. Its thoughtfully designed layout prioritizes pedestrian convenience, fostering an environment where technology and business converge seamlessly. The strategic use of media architecture not only amplifies commercial vibrancy but also serves as a beacon of innovation, reflecting Shenzhen's commitment to technological advancement. This area transcends its role as a mere electronics market, evolving into a cultural landmark that encapsulates the spirit of entrepreneurship and technological prowess. The government's infrastructural investments and policy support highlight a visionary approach to urban planning, aiming to position Huaqiang North Commercial Area on the global stage as a premier marketplace for electronic products. The dynamic interplay of digital technology and spatial design not only enhances commercial efficiency but also weaves a rich tapestry of cultural narratives, solidifying Huaqiang North Commercial Area's legacy in the collective memory of Shenzhen and beyond. Through its continuous evolution, Huaqiang North Technology Pedestrian Street epitomizes the future of urban commercial spaces, where innovation, community, and culture coalesce to create an enduring symbol of progress and modernity.

A AVIC City - Shopping Centre
Contractor： Mall

B Saige Electronics Market
Contractor： Mall

C China Telecom Building
Contractor: Company

D Huaqiang Electronics World
Contractor: Indiviual

E Huaqiang LED Trading Centre
Contractor: Indiviual

F Le Tao Li
Contractor: Indiviual

G Guangbo Modern Window
Contractor: Company

H Maoye Tiandi 1
Contractor: Mall

I Maoye Tiandi 2
Contractor: Mall

J Shundian
Contractor: Indiviual

Figure 17. Spatial Practice of Shenzhen Media City Map

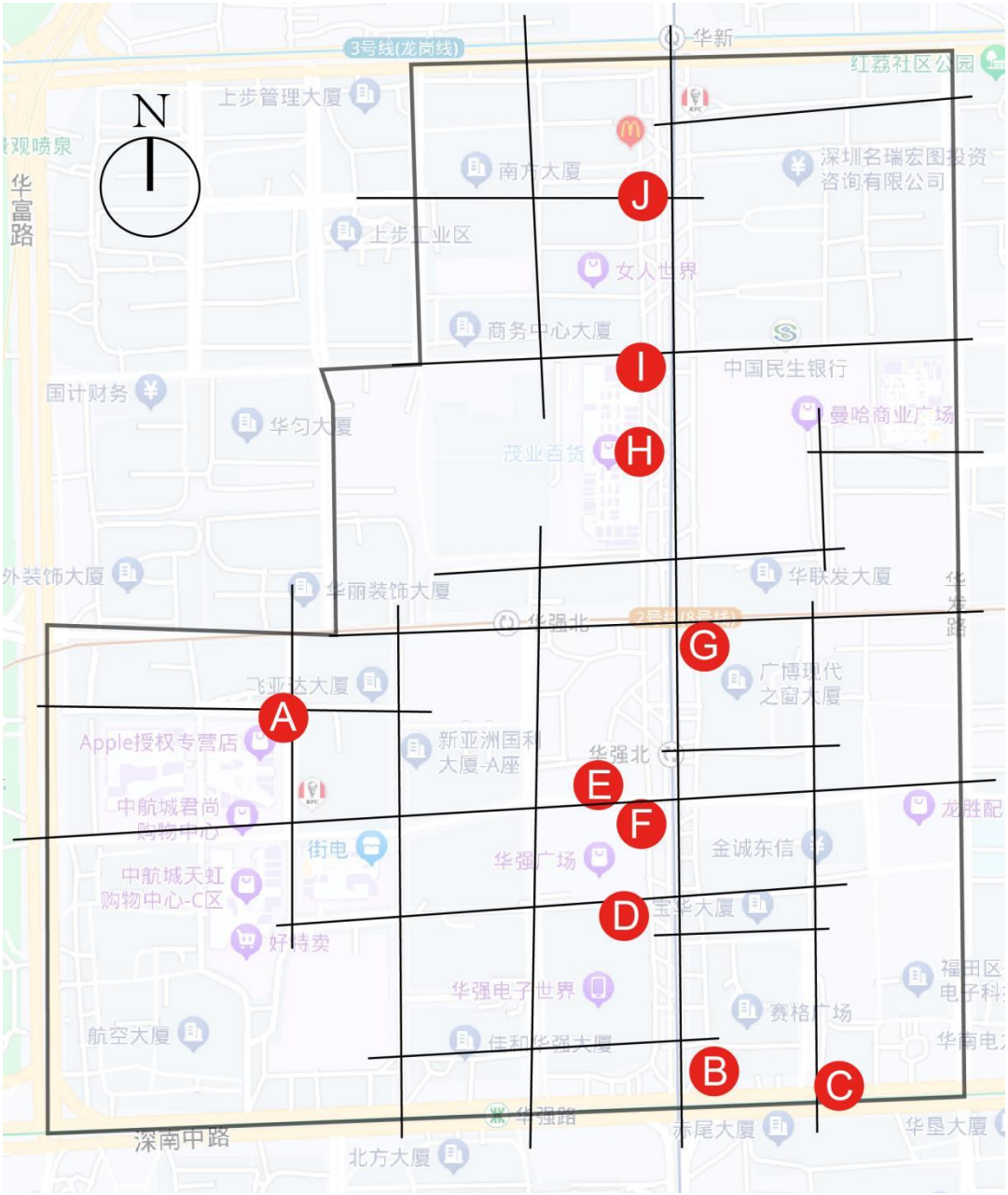


Figure 18. Representations of Space of Shenzhen Media City Map

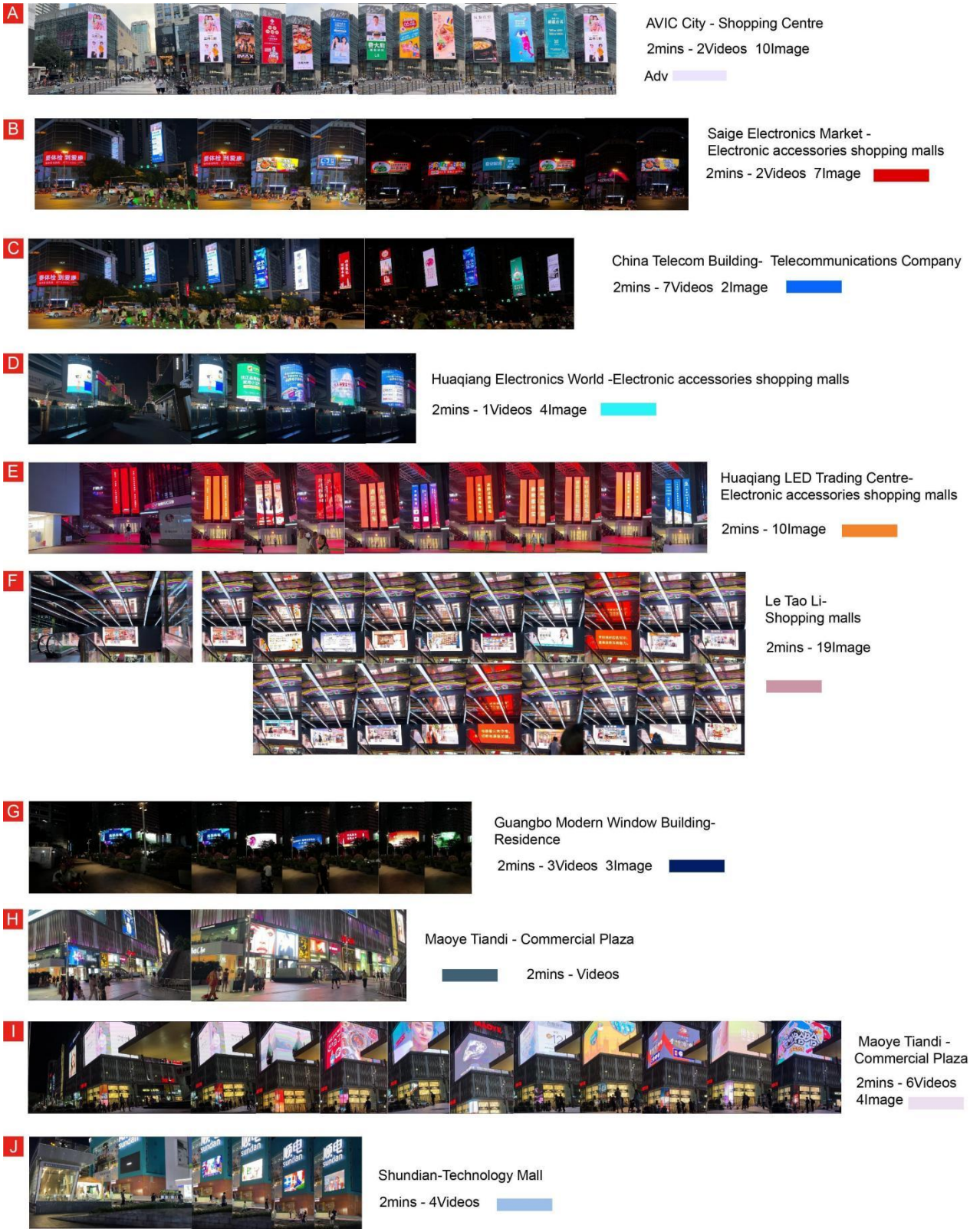


Figure 19. Representational Space of Shenzhen Media City Map

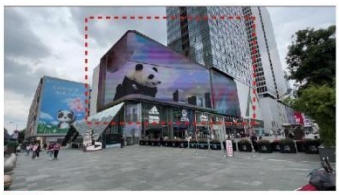
4.2.3.1.3 Chengdu Media City Map of Chunxi Road

In the spatial practice dimension, the media architecture of Chunxi Road attracts significant foot traffic, establishing it as a fashionable and trendy destination. As Chengdu's main commercial district, Chunxi Road's layout centres on a pedestrian street, surrounded by diverse commercial and entertainment facilities. This design not only facilitates easy pedestrian movement but also enhances opportunities for shopping and socializing. The area's commercial activity underscores the economic vitality of downtown Chengdu, hosting numerous high-end brands and international chains that attract middle- and high-income groups (Samples C and J). The high prices and rents further reflect its status as a key commercial hub, with a substantial economic base supporting the concentration of media architecture and reinforcing Chunxi Road's role as a major consumer centre in Chengdu (Samples F, G, and H).

In the Representations of Space dimension, the planning and architectural design of Chunxi Road exemplify a modern urban commercial district. Pedestrianized streets encourage shopping and leisure activities, enhancing the area's appeal. The architectural design skillfully blends modern and traditional elements, preserving Chengdu's cultural identity while fostering a contemporary commercial atmosphere. Media architecture platforms promote niche cultures, such as graffiti and tattoos (Sample E, J). City planning documents and commercial development reports reveal clear economic and social objectives behind Chunxi Road's development, aiming to enhance the city's image and stimulate economic growth, thereby solidifying Chengdu's position as the economic centre of the Southwest region.

At the Representational Space level, the media architecture of Chunxi Road transcends its physical presence to become a symbol of Chengdu's urban culture, embodying fashion, prosperity, and innovation. Through social media sharing and appearances in films and television, these locations gain additional cultural significance, embedding themselves in people's memories and imaginations. Iconic panda images (Sample A), for example, reflect Chengdu's regional identity, with social media amplifying their association with the city. The media architecture and its content evoke emotional responses, sparking curiosity about new technologies and a desire to live in Chengdu (Sample A). Government and regulators actively promote Chengdu as a fashion-forward city, while the media architecture garners celebrity status on social networks, further enhancing its cultural and social impact.

Ultimately, Chunxi Road's media architecture serves as a dynamic testament to Chengdu's blend of cultural heritage and fashionable modernity. It embodies the city's economic prowess and its commitment to innovation, making it a vibrant symbol of Chengdu's urban identity and an integral part of its social fabric. This convergence of commerce, culture, and technology not only reflects but also shapes the evolving narrative of Chengdu as a global city.

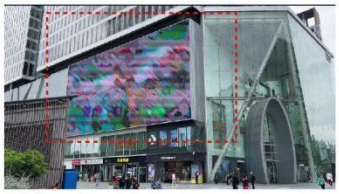


A SAVOR -Shopping Centre
Contractor： Mall

B Investment Company
Contractor： Company

C Adidas，Armani
Contractor: Indiviual

D Suning Department Store
Contractor: Mall



E Yinshi Square
Contractor: Mall

F IFS
Contractor: Mall

G IFS
Contractor: Mall

H IFS
Contractor: Mall

I Adidas
Contractor: Indiviual

J Jingrong Hui
Contractor: Mall

Figure 20. Spatial Practice of Chengdu Media City Map

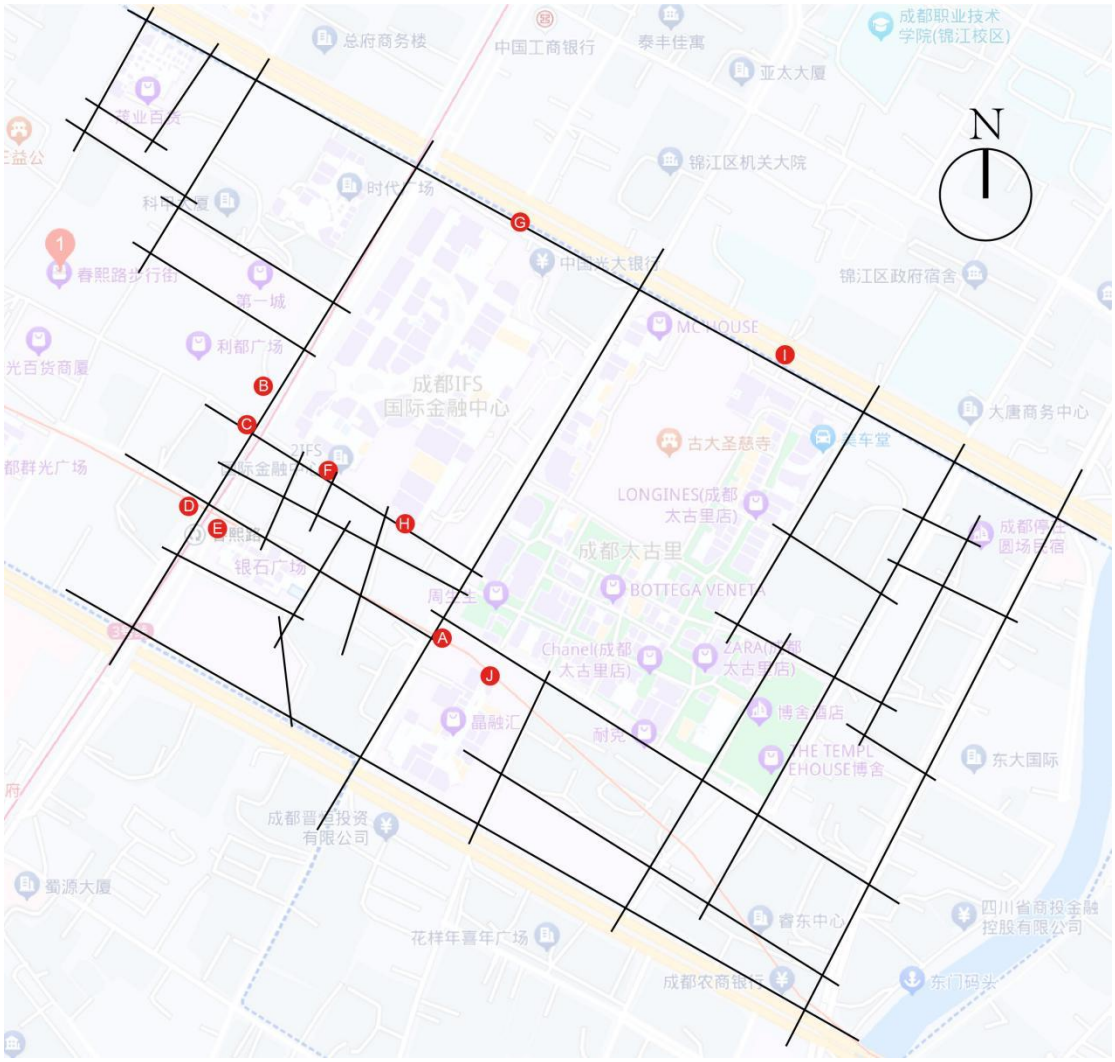


Figure 21. Representations of Space of Chengdu Media City Map

Figure 22. Representational Space of Chengdu Media City Map

4.2.3.1.4 Wuhan Media City Map of Jianghan Road

In spatial practice (Figure 23), Jianghan Road is a key commercial centre in Wuhan, with media architecture placed indoors to preserve its cultural and historical street image. Commercial activities are frequent, and foot traffic is dense. The 13 historical and distinctive buildings on Jianghan Road have been repurposed for commercial and cultural activities, showcasing a blend of history and modernity. Daily activities on Jianghan Road include shopping, work, leisure, and entertainment. Due to its commercial function and convenient transportation, it attracts many people, especially during holidays and weekends. Although media architecture is also used in this location for information dissemination, event promotion, and commercial advertising, its form differs from the media architecture discussed earlier in the city. In this area, media architecture primarily places screens inside the buildings, minimizing their impact on the exterior facades of Jianghan Road (Samples B, F, and G). The indoor placement of media architecture reflects the management's efforts to balance the trend of media architecture with the preservation of traditional building culture.

From the perspective of Representations of Space (Figure 24), the planning of Jianghan Road demonstrates the Wuhan municipal government's emphasis on urban modernization and traditional culture preservation, while using media architecture to create interaction with citizens. Except for Samples C and D at the intersection of pedestrian and vehicular paths, all media architectures in the pedestrian areas are placed indoors. These samples are also positioned at strategic crossroads within the urban plan to enhance screen communication efficiency. Sample A, located on the pedestrian street, primarily serves the role of public art rather than political propaganda or commercial advertising (Sample A). Another interesting observation in this area is the presence of online influencers and self-media professionals who conduct live broadcasts and public performances around media architecture in this open space. Media architecture serves as both a landmark and a light source for these activities, highlighting Wuhan's urban identity.

In the dimension of Representational Space, the media architecture of Jianghan Road is not just a tool for information dissemination but also a symbol of urban culture. For instance, Jianghan Yinxiang displays historical footage, cultural events, and artworks from Wuhan, playing a significant role in shaping the city's image and conveying cultural values (Sample C). Jianghan Road, as a place rich in cultural and historical significance, is further reinforced as part of Wuhan's cultural identity through the display of media architecture. The short films related to art, culture, and history shown on these media architectures allow people to experience cultural presence and influence in their daily lives.

The analysis of Jianghan Road reveals that media architecture in this commercial district not only serves commercial advertising purposes but also acts as an important medium for cultural dissemination. By displaying diverse cultural content, these media architecture enrich the city's visual landscape and enhance residents' and visitors' cultural identity with Wuhan. In this way, Jianghan Road is not just a commercial centre but also an important area that reflects Wuhan's cultural heritage and modern development, contributing to Wuhan's construction as a modern city with deep cultural connotations.

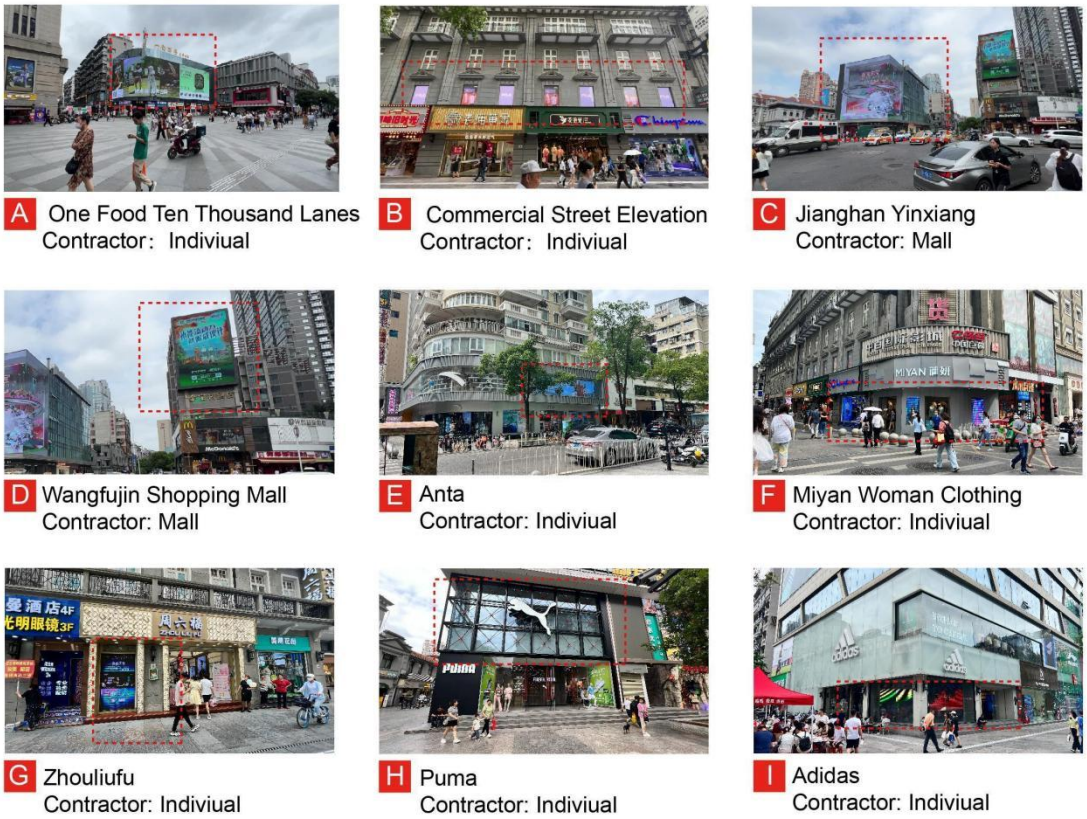


Figure 23. Spatial Practice of Wuhan Media City Map

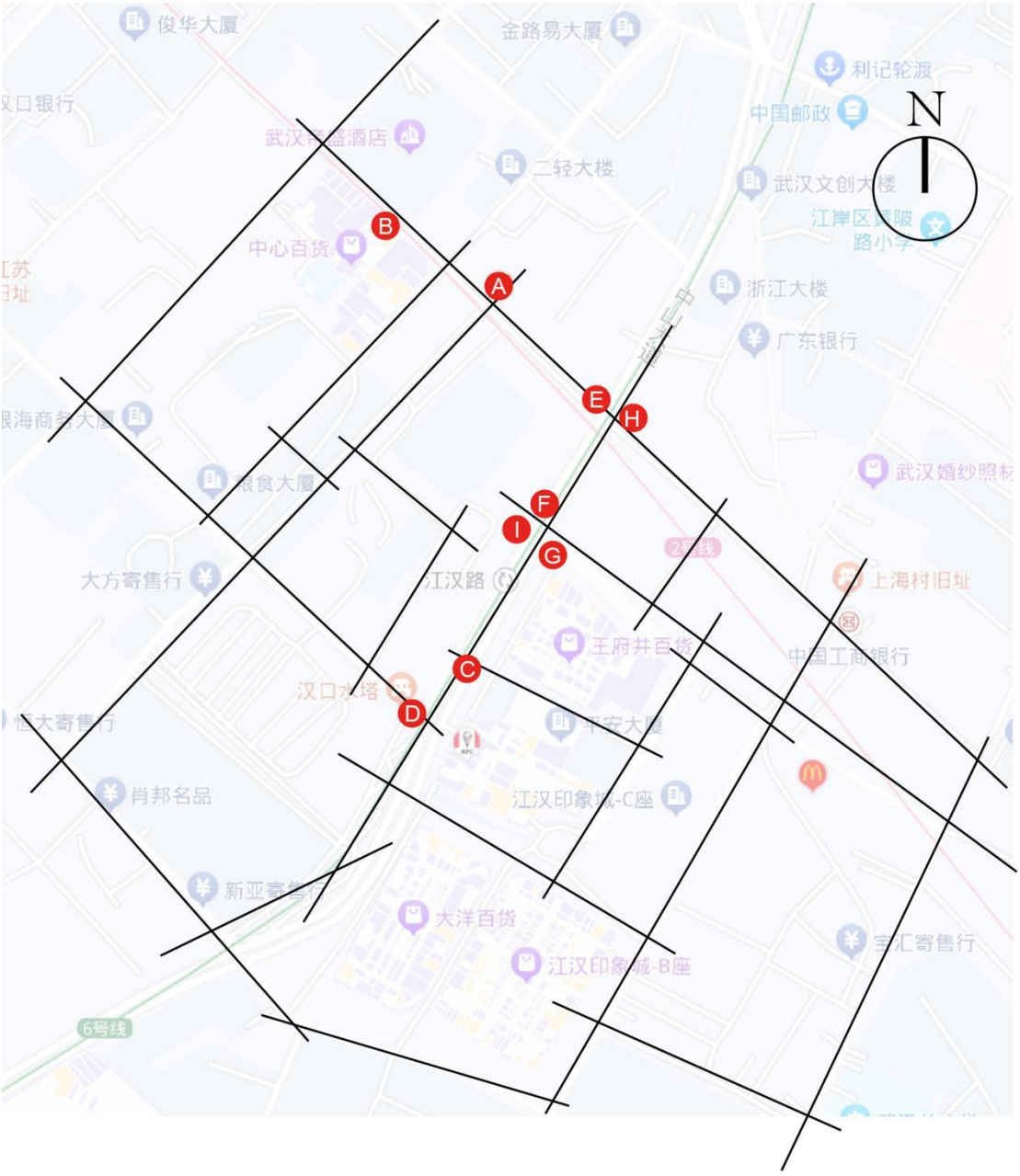


Figure 24. Representations of Space of Wuhan Media City Map

Figure 25. Representational Space of Wuhan Media City Map

4.2.3.1.5 Changsha Media City Map of Wuyi Square

From the perspective of Spatial Practice (Figs. 26, 27), media architecture in this area fosters collective interaction and entertainment. The Wuyi Square area, located in the heart of Changsha, is surrounded by numerous commercial complexes, shopping centres, and dining and entertainment facilities. The area's dense physical layout includes pedestrian streets, shopping centres, subway stations, and bus routes, providing convenient access for residents and tourists. Large LED screens and other media architecture on the square not only display advertisements and information but also serve as focal points for gathering and interaction. Century Building, Changsha Impression City, and YiSHION are media architecture sites where crowds gather to watch special media content (Samples L, P, and V). The content on these screens changes approximately every 30 seconds to 2 minutes, with most users waiting to see specific entertainment content such as animations of Cupid or Harry Potter. Additionally, the area features numerous nightlife venues, such as bars, clubs, and late-night restaurants, which use extensive LED screens on their facades to attract customers with engaging media content (Samples W, X, Y).

From the perspective of Representations of Space (Figure 28), media architecture supports the reinforcement of urban axes and regional planning. Wuyi Square and its surrounding areas are designated as key commercial and entertainment zones in urban planning documents and maps, particularly linking the city's parks and pedestrian streets along the north-south axis (Samples A to Q). Media architecture located on either side of urban facades creates an atmosphere filled with entertainment and a sense of technology, thereby strengthening the urban axis. Observations and map analysis reveal that most media architecture is strategically positioned in relation to pedestrian flow and the distribution of landmarks, with the intention of maximizing communication efficiency.

From the perspective of Representational Space (Figures 29 and 30), media architecture integrates into the festive atmosphere of the entertainment city, with electronic screens serving as the ideal medium. The media architecture at Wuyi Square not only displays commercial advertisements but also frequently broadcasts videos of cultural events and festivals, becoming a crucial vehicle for urban culture and symbolism. This is particularly evident at major intersections such as Circus 1 (Samples A, B, C, D), Circus 2 (Samples G, H, N), and Circus 3 (Samples J, L, I, K, O). These circuses feature concentrated media architecture, ensuring that visitors can view media content from any angle. By showcasing various cultural and entertainment content, media architecture shapes public perception of Wuyi Square and Changsha. They serve not only as instruments for disseminating information but also as symbols embodying urban identity and culture.

In the Wuyi Square area of Changsha, media architecture plays multiple roles, particularly in establishing an entertainment city. Large LED screens and interactive billboards display the latest commercial information, event announcements, and advertisements, attracting tourists and consumers, thus stimulating economic activity. By broadcasting cultural events and festival videos, media architecture serves as a platform for cultural dissemination and interaction, enhancing citizens' cultural identity and participation. Through light shows and dynamic images, media architecture enriches the urban nighttime landscape, drawing more people to participate in

nighttime activities and boosting the nighttime economy. Media architecture in the Wuyi Square area of Changsha is not only a tool for information dissemination and advertising but also plays a crucial role in shaping the city's image, promoting cultural dissemination, and developing the entertainment economy. These functions collectively contribute to the development of Changsha as a modern entertainment city.

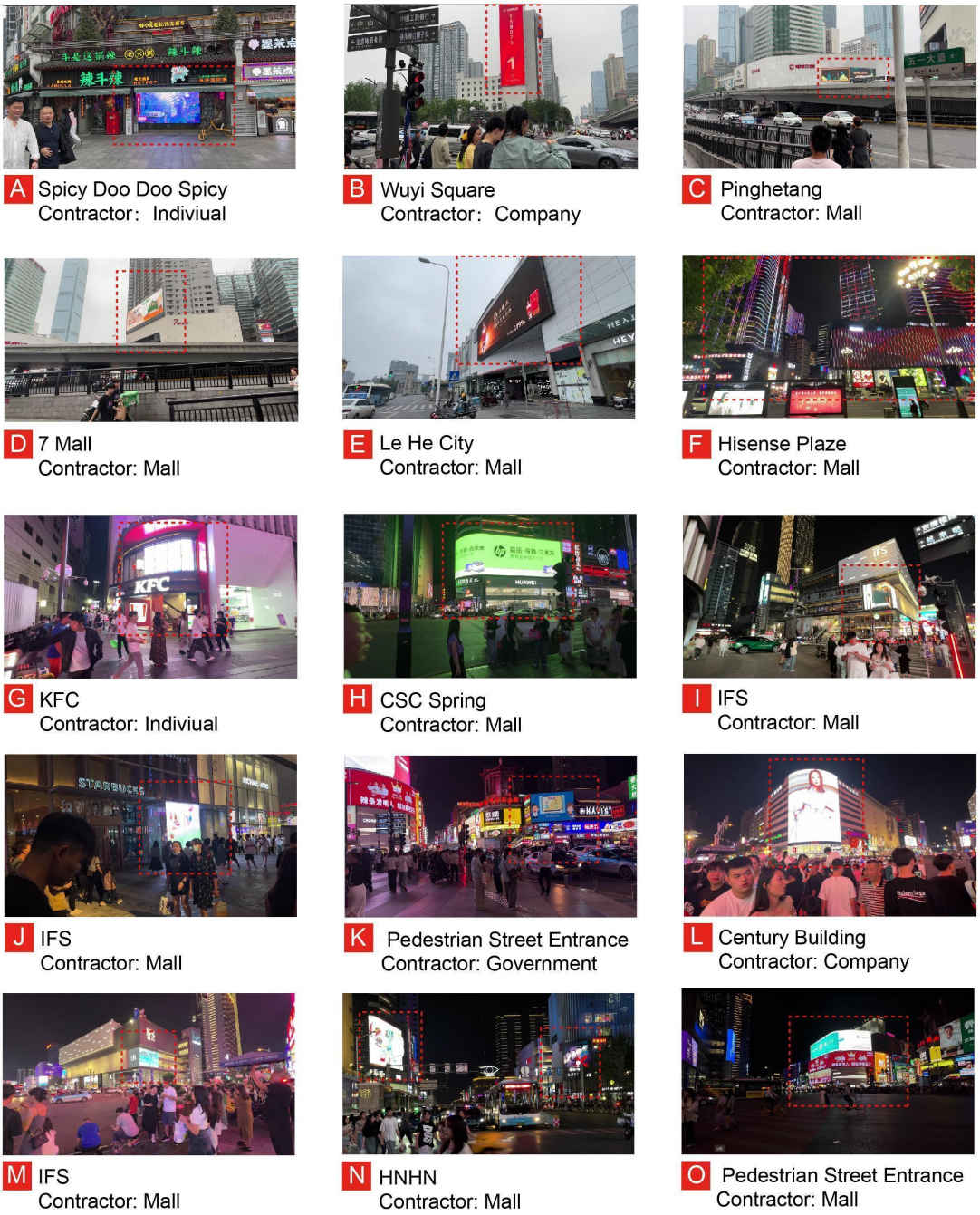


Figure 26. Spatial Practice of Changsha Media City Map (1/2)

P YiSHION
Contractor: Indiviual

Q Changsha Food Court
Contractor: Mall

R Xin Tiandi
Contractor: Mall

S Changsha Food Court
Contractor： Mall

T Changsha Food Court
Contractor： Indiviual

U Xin Tiandi
Contractor: Mall

V Changsha Impression City
Contractor: Mall

W Eat & Drink-Restaurant
Contractor: Indiviual

X YunXi ChaoHui Club
Contractor: Indiviual

Y CHAO live house
Contractor: Indiviual

Figure 27. Spatial Practice of Changsha Media City Map (2/2)

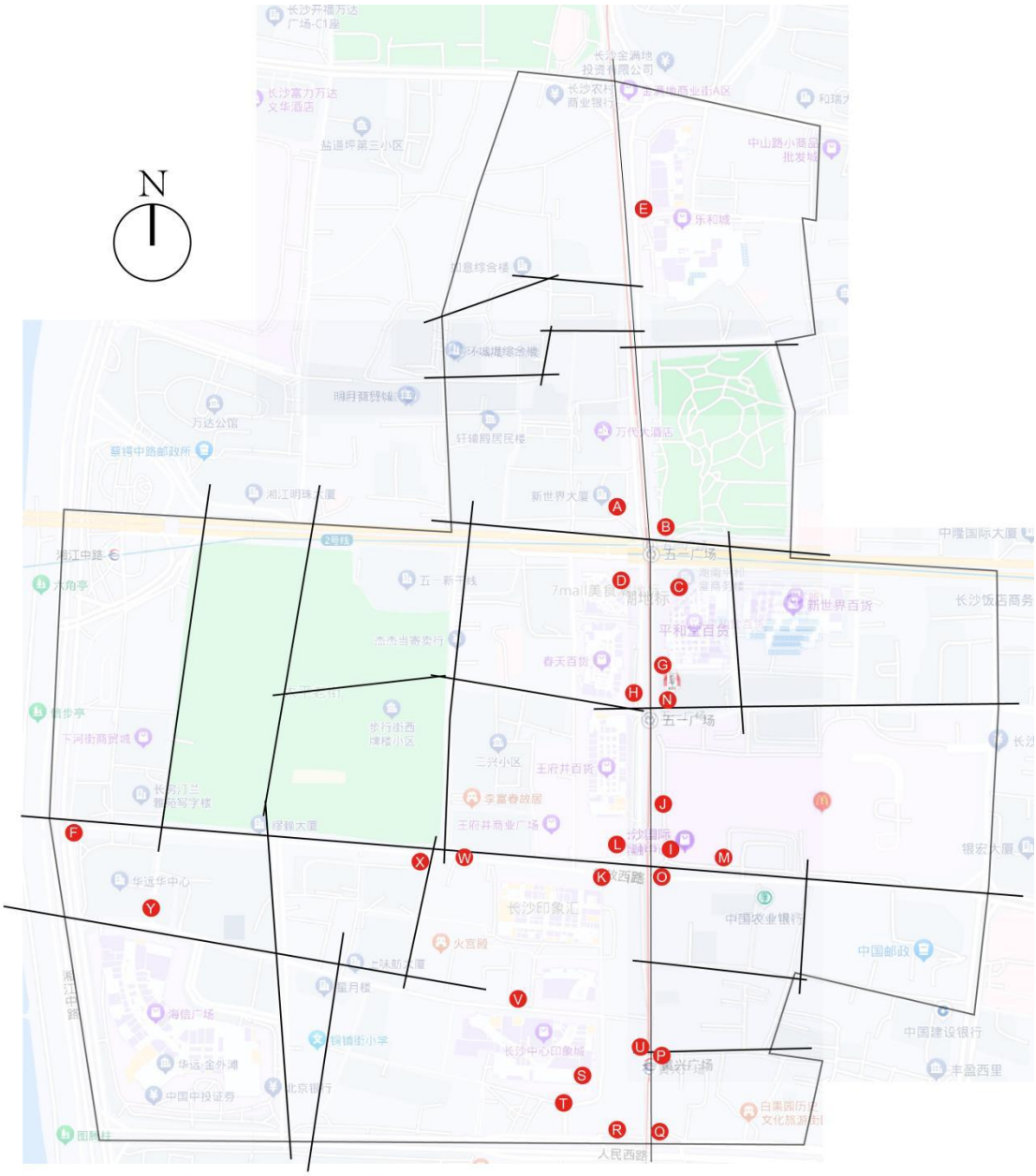


Figure 28. Representations of Space of Changsha Media City Map

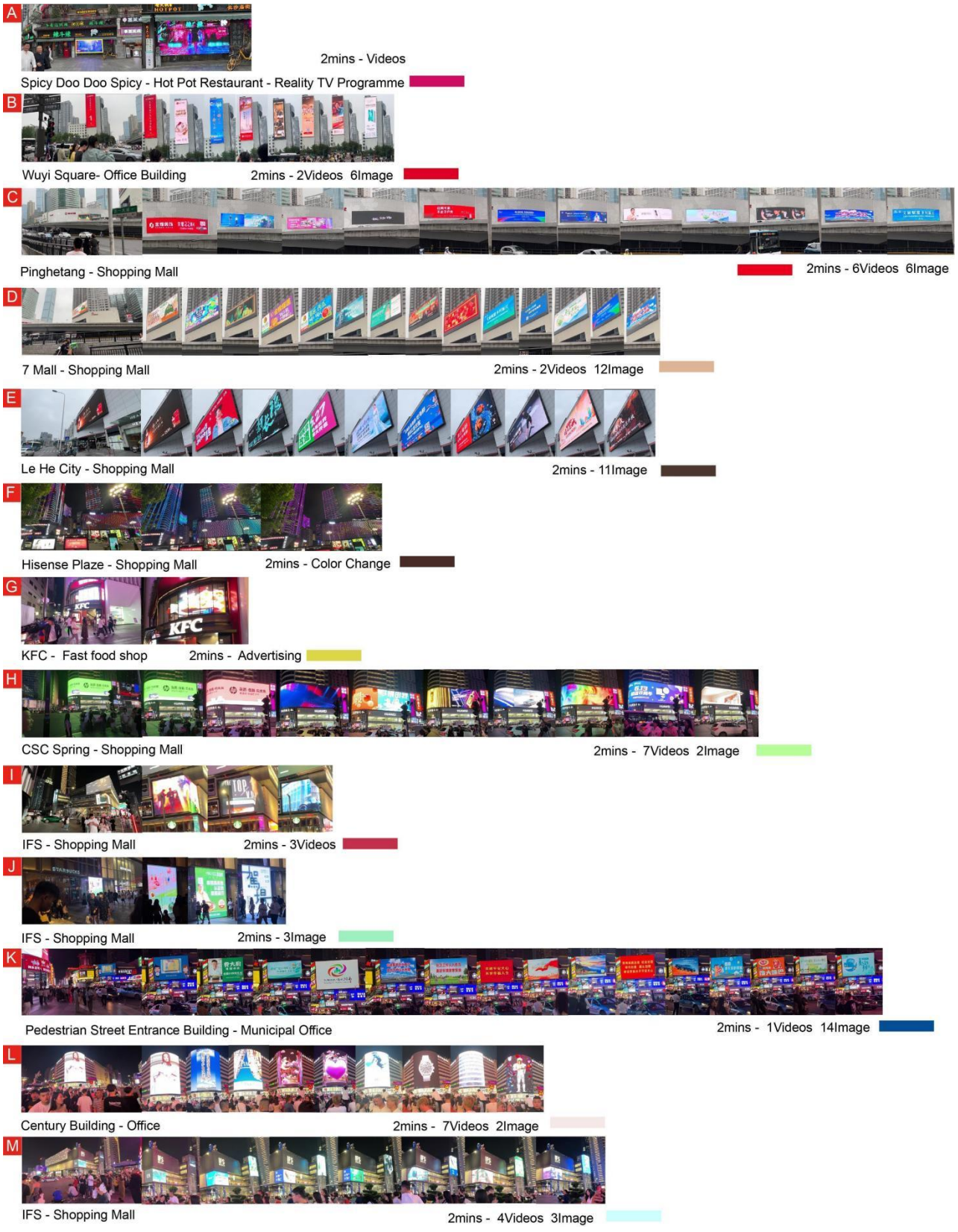


Figure 29. Representational Space of Changsha Media City Map (1/2)

Figure 30. Representational Space of Changsha Media City Map (2/2)

4.2.3.2 Space Syntax Analysis of Media Architecture

In this study, DEPTHMAP, a software developed by Bill Hillier at the Bartlett School of Architecture, University College London, will be used as the primary research tool to study spatial syntax (Van & Yamu, 2021). The software is designed to analyse space structure, not only within and between buildings but also across cities and countries. It provides a series of parameters that quantitatively describe the topology of urban and architectural spaces (Batty, 2004, p.23). Many scholars have utilised DEPTHMAP for urban public space transformation and verified its referability (Dimililer & Akyuz, 2018; Hu et al., 2021). In this research, six of these metrics from spatial syntax calculations will be used in the current study in five selected cities (Hillier & Hanson, 1989, pp. 49, 95, 181, 211).

- Axis: A continuous, sight-penetrable path or line through space.
- Connectivity: This indicates the number of intersecting spaces in the system.
- Integration: The degree to which a space is clustered or discrete from other spaces in the system.
- Occlusivity: expresses the ratio between the occlusion of visual edges and the area visible from a particular position.
- Compactness: indicates the relative dispersion of the points directly connected to the stated location.
- Depth: indicates the minimum number of connections required to reach space. The higher the depth value, the more difficult it is to access the space.

Using spatial syntax for media architecture research in urban public space has its unique advantages and can be very helpful in understanding urban space and behaviour in the previous section of social research. The six indicators mentioned above are used to quantitatively assess the differences between media architecture and the indicators in different cities and to uncover hidden findings in the logic of grooming and the social nature of urban public space.

One significant advantage of using space syntax in the study of media architecture is its ability to analyse spatial configuration and accessibility. Connectivity and integration metrics are particularly useful in assessing how media architecture connects with the urban fabric (van et al. 2021). By examining the direct connections between media architecture and surrounding spaces, researchers can evaluate its prominence and accessibility within the urban environment. High connectivity indicates that the media architecture is well integrated into the city, making it more likely to attract foot traffic and public engagement. Space syntax also offers valuable insights into human flow and social interaction. By predicting movement patterns and visual fields, space syntax helps to understand how media architecture influences pedestrian behavior and social interactions in public spaces (Askarizad et al. 2024). For instance, by analyzing depth values, researchers can determine the ease with which people can access the media architecture from various parts of the city. Lower depth values indicate higher accessibility, which can enhance the building's ability to draw in and engage the public.

Another advantage of using space syntax is the optimization of design and layout for media architecture. The data and analysis provided by space syntax can inform the design process, ensuring that media architecture is optimally integrated into the urban environment (Koenig et al.

2020). This involves not only improving its aesthetic appeal but also enhancing its functionality and user experience. By understanding spatial relationships and visual connectivity, designers can create media installations that are more engaging and accessible to the public. Space syntax facilitates the evaluation of the impact and benefits of media architecture on its surrounding environment. Through quantitative analysis, it is possible to assess how media installations affect pedestrian traffic, visual landscapes, and social interactions. This can lead to a better understanding of the socio-economic benefits of media architecture, such as increased commercial activity and enhanced public engagement. By comparing different spatial configurations, researchers can identify the most effective design strategies to maximize these benefits.

In summation, space syntax's application in scrutinizing media architecture in urban public spaces have significant insights. It proffers a sturdy analytical scaffold for spatial configuration analysis, behavioral prediction, design optimization, and socio-economic impact evaluation, thereby deeply integrating media architecture to invigorate public spaces and foster social dynamics.

When conducting space syntax analysis at an urban scale, this study utilized Depthmap software and employed 5-metre by 5-metre grids as the basic unit of calculation. Given the diffusive nature of the visual impact of media architecture, a 15 by 15 grid area in front of the media architecture to be influenced by it was selected for the analysis (Figure 31). Within this selected area, various space syntax metrics such as integration and accessibility were calculated using Depthmap. The average of these metrics across all units within the area was then determined to represent the comprehensive space syntax value for the media architecture. This method allows for a more accurate assessment of the visual and spatial impact of media architecture in urban public spaces, thereby providing a scientific basis for relevant design and planning efforts. In addition, the rating metrics in the pseudo-colour maps in the post sequence are standardised by Figure 32, with closer to red representing higher values and conversely closer to blue representing lower numbers.

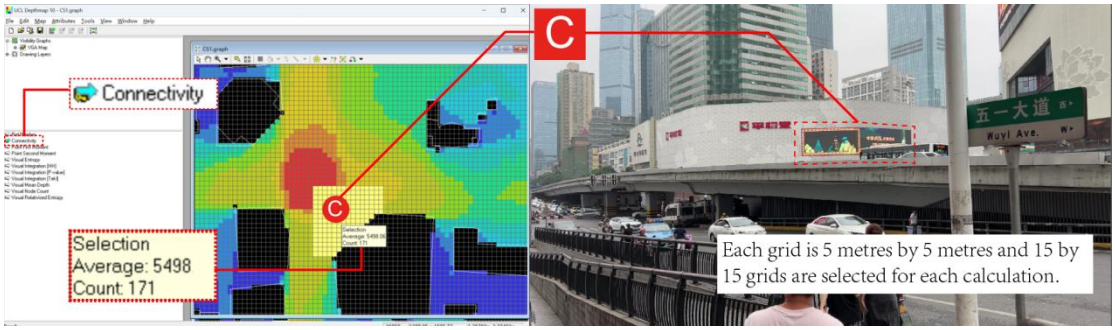


Figure 31. Schematic Representation of Spatial Syntactic Computation (Take Sample C in Changsha as a Example)

Figure 32. Spatial Syntax Indicator Ratings

4.2.3.2.1 Space Syntax Analysis of Media Architecture in Guangzhou

Calculation of the six indicators of spatial syntax (Table 6) through media architecture in Guangzhou's urban public spaces (taking Beijing Road Pedestrian Street as an example) led to the following findings.

Table 6. Spatial Syntactic Parameters of Guangzhou Media Architecture

Guangzhou	Axis	Connectivity	Integration	Occlusivity	Compactness	Depth
A	8	25	3.35262	680544	0.205338	3.50075
B	8	38	4.55136	2996460	0.0471631	2.84211
C	/	/	/	/	/	/
D	6	90	3.62511	1865770	0.0661488	3.31278
E	2	74	3.80142	1580600	0.0773237	3.20551
F	6	107	3.82751	1368620	0.113091	3.18998
G	6	30	3.39964	528657	0.231621	3.46617
H	8	328	6.36705	3880070	0.0497515	2.57744
I	8	147	4.56253	2418660	0.0542266	2.82807
J	8	107	4.28	1827620	0.105053	2.9589
K	4	193	5.0187	1303190	0.106415	2.67619
L	5	75	3.9796	1876310	0.0799665	3.10677
M	8	242	5.21554	2927140	0.0411537	2.60251
Average*	3.25	90.7234	3.55327	1268800	0.120648	3.53266
Minimum*	1	1	1.63406	32524.1	0.0247906	2.30677
Maximum*	8	351	6.4159	5020730	0.694189	6.13083

*The values here refer to the global

Figure 33. What Sample H Looks Like in Reality and Social Media

In space syntax analysis, areas with high accessibility often display more popular media content. Sample H has the highest integration (328) and relatively low depth (0.0497515), indicating it is a highly accessible and central location in the urban space. Sample M also shows high integration (242) and the lowest depth (0.0411537), indicating it is another highly accessible area. Additionally, H has the highest compactness (3880070), indicating it is a densely connected area.

Sample H is the New Dah Sing Department Store (Figure 33). Although it is a commercial plaza, the upper floors of the building are mainly used as office spaces. Consequently, the designers utilized the building's curved design to create a media façade. Interestingly, the screen does not display commercial advertisements but primarily features promotional videos about Guangzhou. As a result, sample H has become the most popular media architecture in the Beijing Road Pedestrian Street area of Guangzhou. Viewers often record videos and upload them to social media, attracting more travelers and residents to watch.

Sample M is the Guangdong Finance Department, which is both a historical building and a governmental function building. Therefore, no media façade was installed to protect the building. Instead, color-changing LED lights were installed. During the day, the LED lights do not affect the view of the historical building, while at night, sample M emits colourful lights, adding a touch of entertainment to the Beijing Road Pedestrian Street.

Figure 34. Sample D Plays a Film of Fans Support for an Idol's Birthday Event

In the context of space syntax analysis, the influence of content on media architecture surpasses the constraints of the physical environment. Sample D's media architecture (Figure 34) does not perform as well as other samples in metrics such as connectivity, with its Connectivity even exceeding the global level (90 < 90.7234). However, its actual usage is more impressive than the data suggests. Sample D is the Junyi Brand Centre, an open screen accessible to the public. Consequently, some users rent this screen from the company to display their content after review. For example, Figure 34 illustrates a birthday support video for a female idol. Her fans rented the screen for that day to demonstrate their support, which drew a substantial number of fans to the area for taking photos and holding gatherings.

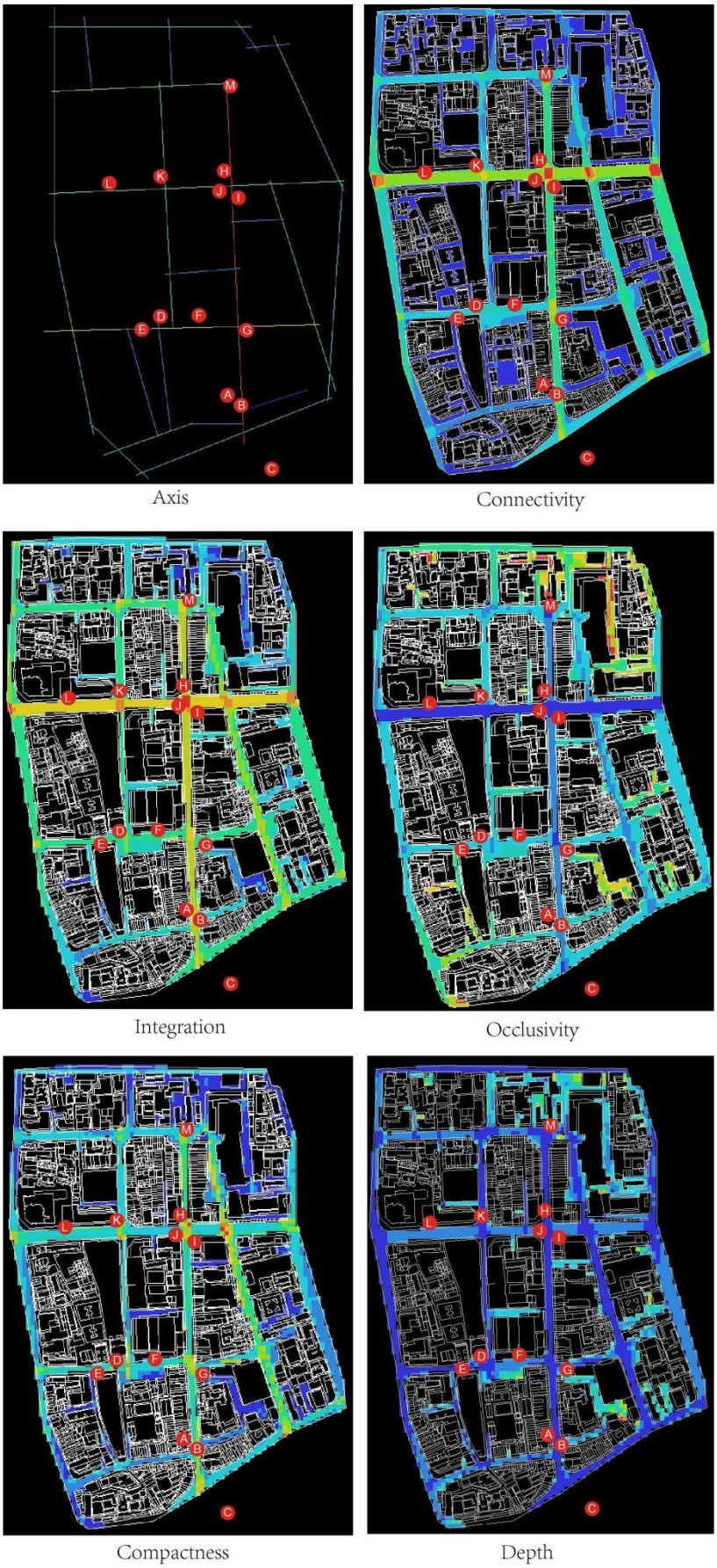


Figure 35. Spatial Syntax Indicator Illustration: Beijing Road Pedestrian Street, Guangzhou

4.2.3.2.2 Space Syntax Analysis of Media Architecture in Shenzhen

Calculation of the six indicators of spatial syntax (Table 7) through media architecture in Shenzhen's urban public space (taking Huaqiang North as an example) led to the following findings.

Table 7. Spatial Syntactic Parameters of Shenzhen Media Architecture

Shenzhen	Axis	Connectivity	Integration	Occlusivity	Compactness	Depth
A	4	489	5.33321	286.327	0.235786	3.16202
B	12	2787	9.07726	1052.43	0.119251	2.27027
C	5	1862	8.36382	1597.94	0.062138	2.37862
D	12	3054	9.33921	1413.25	0.110305	2.23464
E	12	1918	8.28992	837.025	0.146666	2.39091
F	12	921	7.25459	1821.53	0.0709226	2.58941
G	12	2212	8.87635	2139.6	0.0677006	2.29902
H	12	2755	8.61645	1260.67	0.165449	2.3382
I	12	1395	7.11875	580.265	0.135221	2.61974
J	12	2898	8.67015	1099.3	0.160373	2.32991
Average*	4.32	1286.37	6.99359	770.608	0.136678	2.75849
Minimum*	2	1	2.86897	8.67388	0.0218554	1.95749
Maximum*	12	4640	12.0424	2355.96	0.733648	5.01906

*The values here refer to the global

Figure 36. Sample D as One of the Landmarks of Huaqiang North

The regional characteristics of urban public spaces should be closely integrated with the content they convey. Sample D (Figure 36) has a connectivity value of 3054, which is the highest among all locations, indicating that Location D has an exceptionally high degree of connectivity within the urban space. Additionally, Sample D has an integration value of 9.33921, which is also the highest among all locations. This implies that Location D is very important in the urban structure, possessing high accessibility and centrality, making it easily reachable and usable by people.

Sample D is Huaqiang Electronics World, a key node in the Huaqiang North Commercial Area pedestrian street. This building connects the Saige Electronics Market and Huaqiang LED Trading Centre, serving as a major entrance to the electronic device market in Huaqiang North

Commercial Area. Furthermore, the architectural design of Sample D is particularly distinctive, with a curved LED screen that is highly visible even from a distance, making it an effective medium for advertisements and public information. The large digital screen adds modern and dynamic elements to the building, enhancing its visual appeal and contributing to the technological narrative of the Huaqiang North Commercial Area area.

Figure 37. Sample G is Obscured by its Surroundings

When selecting locations for media architecture, it is essential to consider the occlusivity of the surrounding environment. Sample G (Figure 37)has higher-than-average Connectivity (2212 > 1286.37) and Integration (8.87635 > 6.99359), suggesting it should be a focal point similar to Huaqiang North Commercial Area. However, actual field investigations reveal that media architecture in this location tends to be overlooked. The occlusivity of Sample G is 2139.6, the highest among all samples. This indicates a significant amount of visual obstruction in the area, which may affect visual access and attention to the region. Additionally, Sample G's compactness is 0.0677006, lower than most samples. This implies that the distribution of points in this area is relatively dispersed, potentially lacking concentration and cohesion. Although Sample G performs well in space syntax metrics, its high occlusivity and lower compactness result in the media architecture in this area being easily overlooked in practical applications.

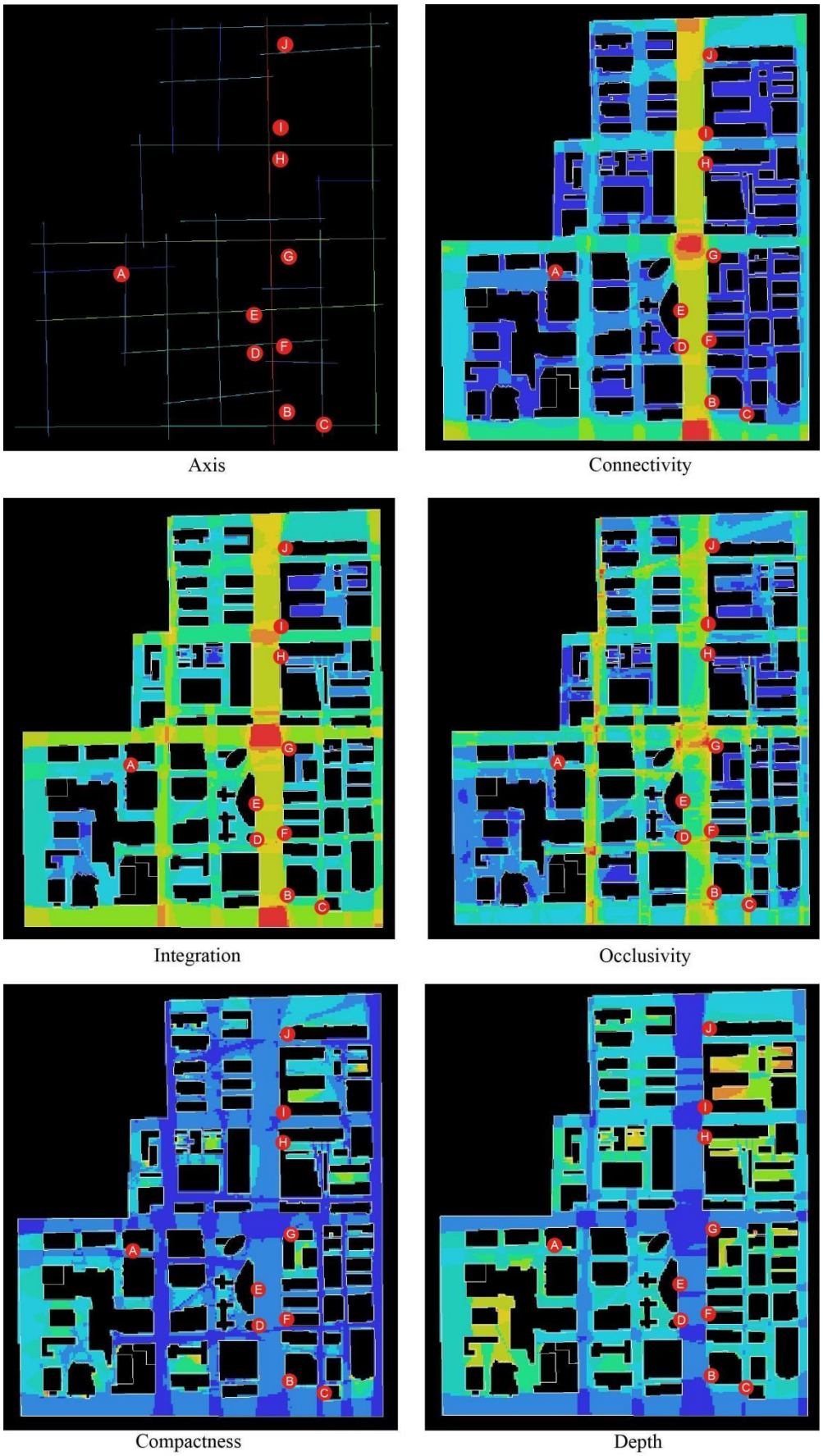


Figure 38. Spatial Syntax Indicator Illustration: Huaqiang North Pedestrian Street, Shenzhen

4.2.3.2.3 Space Syntax Analysis of Media Architecture in Chengdu

Calculation of the six indicators of spatial syntax (Table 8) through media architecture in Chengdu's urban public space (taking Chunxi Road as an example) led to the following findings.

Table 8. Spatial Syntactic Parameters of Chengdu Media Architecture

Chengdu	Axis	Connectivity	Integration	Occlusivity	Compactness	Depth
A	9	3367	9.65063	1364.43	0.107691	2.17755
B	8	1356	6.74218	691.801	0.238411	2.68552
C	8	2764	8.15429	457.096	0.209956	2.39363
D	8	3613	10.0071	2167.07	0.0776937	2.11978
E	8	3525	9.56632	641.387	0.214469	2.18793
F	5	1689	6.30479	749.906	0.256035	2.80246
G	7	1658	7.43863	990.224	0.0884333	2.53436
H	5	1985	6.3898	753.118	0.194745	2.77847
I	7	1851	7.5017	701.605	0.0970195	2.51487
J	9	1357	6.75156	825.257	0.163036	2.68318
Average*	3.81	1176.24	6.44076	723.322	0.16474895	2.89916
Minimum*	2	2	1.78813	3.58253	0.0167736	2.11427
Maximum*	9	3710	10.1986	2405.43	0.75907	7.35529

*The values here refer to the global

Figure 39 Sample A: Local Cultural Influences and Luxury Advertising

High-quality cultural content can drive consumption and reflect the surrounding commercial and social patterns. Taking Sample A (Figure 39)as an example, its connectivity is 3367, significantly higher than the dataset’s average of 2316.5. This indicates that Sample A has high spatial

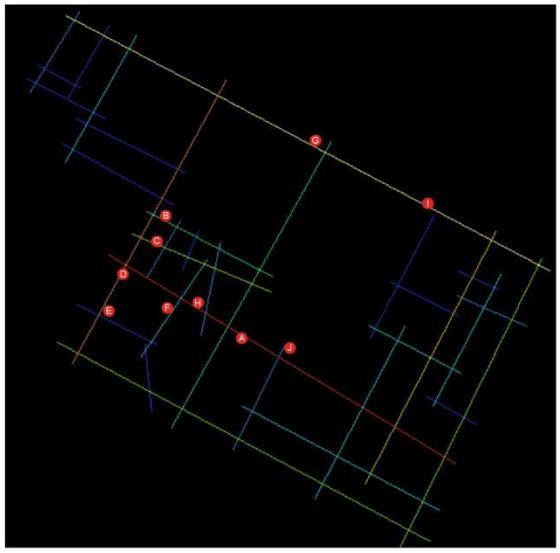
connectivity with numerous direct connections to other spaces. Such high connectivity makes Sample A an important transportation hub, attracting foot traffic and various activities. The integration value for Sample A is 9.65063, above the average of 7.85. High integration means Sample A is centrally located within the entire spatial system, making it easily accessible and recognizable. This not only enhances the area's accessibility but also potentially boosts commercial activities and social interactions, making it a key urban node. Sample A has a depth of 2.17755, close to the average of 2.49, indicating fewer connections are required to reach it from other locations. This suggests that Sample A is relatively easy to access, further enhancing its potential as a transportation hub and activity centre. Overall, Sample A demonstrates significant spatial advantages, including high axial values, strong connectivity, and high integration, which all suggest its prominent status in urban public space. These metrics imply that Sample A is not only easily accessible but also holds the potential to draw a substantial flow of people and various activities.

Sample A is the SAVOR shopping centre, situated at the border of Chunxi Road and Taikoo Li. Due to the high pedestrian traffic in this area, panda imagery has been placed there. As one of the homes of the giant panda, Chengdu considers pandas a symbol of the city. Simultaneously, this area is the largest luxury consumption market in southwest China, displaying numerous luxury advertisements. The panda imagery not only attracts foot traffic but also provides a platform for luxury brand promotion.

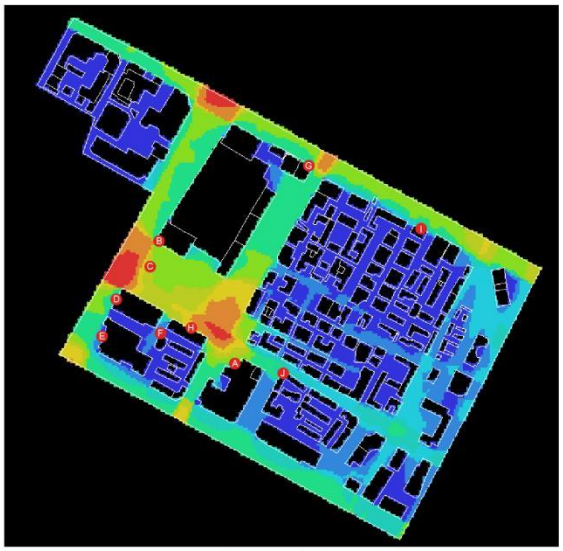
Figure 40. Sample A: Changing Content in Different Event and Holiday

The transformative content of media architecture can be better tailored to the needs and uses of the people in the place. Take Sample A as an example as well (Figure 40), in addition to the panda images and commercial advertisements that present local characteristics, there will also be special types on specific holidays. For example, on Valentine's Day, there will be images of love hearts, or at some special time points, there will also be some countdown images, which are visual interactions with the people in front of the screen.

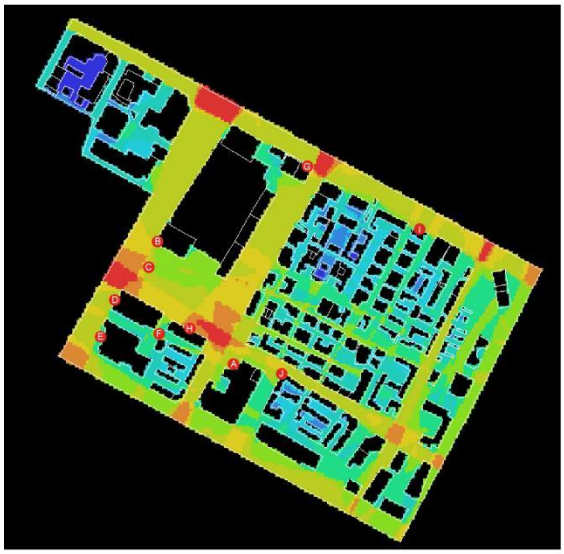
In conclusion, high-quality cultural content, exemplified by the dynamic and context-sensitive media displays in Sample A, can significantly enhance urban spaces. By integrating local symbols, such as pandas in Chengdu, and aligning with commercial and social activities, these spaces become more vibrant and engaging. This approach not only drives foot traffic and economic activity but also strengthens the cultural identity and social cohesion of the area. Sample A, thanks to its strategic location, high connectivity, and innovative application of media architecture, serves as a model for leveraging cultural content to enrich urban public spaces.



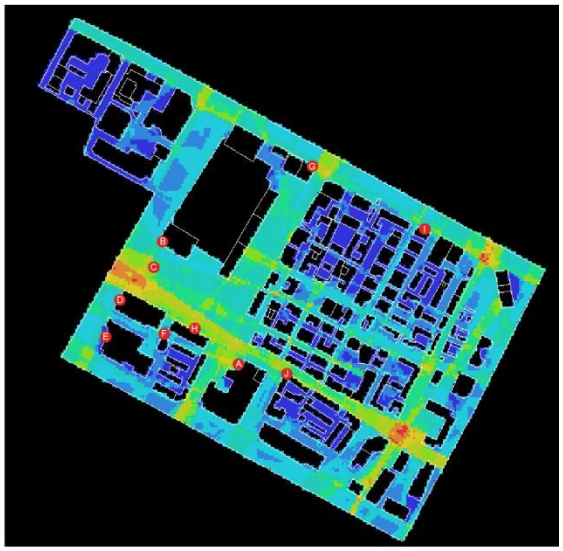
Axis



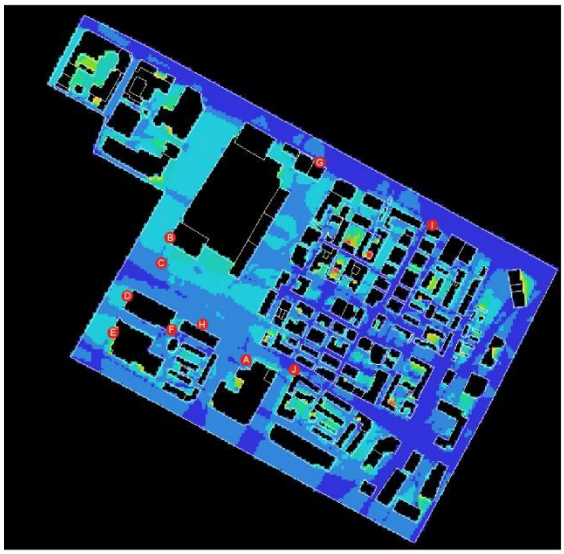
Connectivity



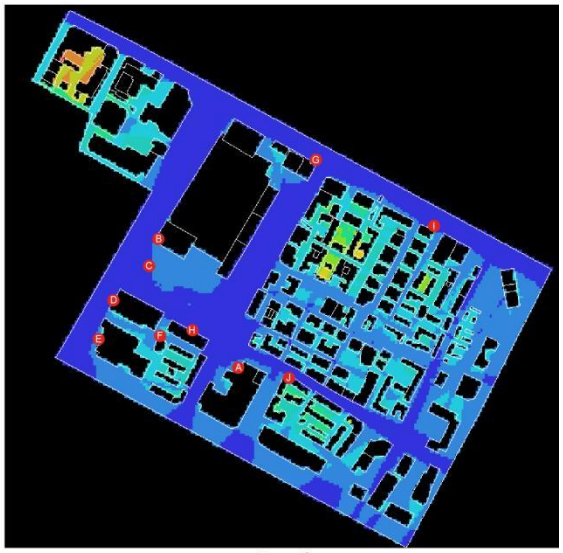
Integration



Occlusivity



Compactness



Depth

Figure 41. Spatial Syntax Indicator Diagram: Chunxi Road, Chengdu

4.2.3.2.4 Space Syntax Analysis of Media Architecture in Wuhan

Calculation of the six indicators of spatial syntax (Table 9) through media architecture in Wuhan's urban public space (taking Jianghan Road as an example) led to the following findings.

Table 9. Spatial Syntactic Parameters of Wuhan Media Architecture

Wuhan	Axis	Connectivity	Integration	Occlusivity	Compactness	Depth
A	7	1087	6.9293	409.395	0.0687955	2.56741
B	7	487	5.799	327.032	0.0949805	2.80516
C	7	800.618	7.54497	800.618	0.114713	2.4385
D	7	931.36	7.54404	853.085	0.127814	2.44522
E	7	2323	9.07792	705.32	0.140258	2.36899
F	7	2279	8.54565	839.528	0.135219	2.26767
G	7	1855	7.51179	887.086	0.128158	2.38547
H	7	1755	8.68832	894.215	0.17931	2.26928
I	7	1856	7.5431	612.421	0.203456	2.44522
Average*	3.36	786.804	5.7439	384.598	0.159899	3.01029
Minimum*	2	7	2.66922	20.6392	0.0141502	2.11708
Maximum*	7	2687	9.72437	1435.86	0.747193	5.06969

*The values here refer to the global

Figure 42. Sample A: One Food Ten Thousand Lanes

High-quality content needs to be combined with more strategic physical locations to optimize urban public spaces. Sample A (Figure 42) has a connectivity value of 1087, which is above average within the dataset. This indicates that the area where Sample A is located has a significant number of direct connections to other spaces, making it a relatively well-connected area. Its integration value is 6.9293, slightly below the dataset average of 7.6871. This suggests that Sample A is less integrated into the overall spatial system, potentially making it less accessible and less utilized compared to other areas. The compactness value is 0.0687955, the lowest among all samples. This means that the space where Sample A is located is relatively dispersed, with

greater distances between connecting points, which may affect the efficiency of space usage and the frequency of interactions. Sample A, also known as One Food Ten Thousand Lanes, in actual use and observation, shows that although this area experiences heavy foot traffic and large crowds, most users are unclear about what activities should take place in this area, which is related to its low compactness. Additionally, despite Sample A being a food court, most people are unaware of the food court located below the screen. Most people watch the screen content from a distance, so they overlook the entrance to the food court below the screen. The media content is dispersed or incorrectly conveys the function of the building and is not presented in an appropriate location.

In summary, the actual usage of Sample A reveals deficiencies in its spatial design and media presentation. While the high connectivity brings considerable foot traffic to the area, the low integration and compactness lead to inefficient space utilization and a lack of clarity regarding user activities within the area. Furthermore, the media content fails to effectively communicate the building's function, further impacting users' understanding and utilization of the space. Consequently, to optimize the public space design of Sample A, it is necessary to strengthen its integration and compactness and refine the presentation of media content, so as to better direct user activities and improve the overall utilization rate of the space.

Figure 43. Sample B: Screen Decoration for Windows on the Building Facade

It is necessary to further evaluate and consider the effects and approaches of internalizing media architecture. The area where sample B (Figure 43) is located exhibits low connectivity (487) and integration (5.799) in the space syntax analysis. The high depth value (2.80516) further exacerbates its isolation. Although the low occlusivity (327.032) contributes to a sense of openness in the space, the low compactness and high depth indicate that this area has low efficiency and interactivity within the overall spatial system. Sample B (Figure 43) primarily features the building's facade. The historical preservation plan for Jianghan Road does not present a media facade but instead uses an internalized media architecture approach. However, through actual observation and data calculations, it is considered that this presentation method has not been very effective.

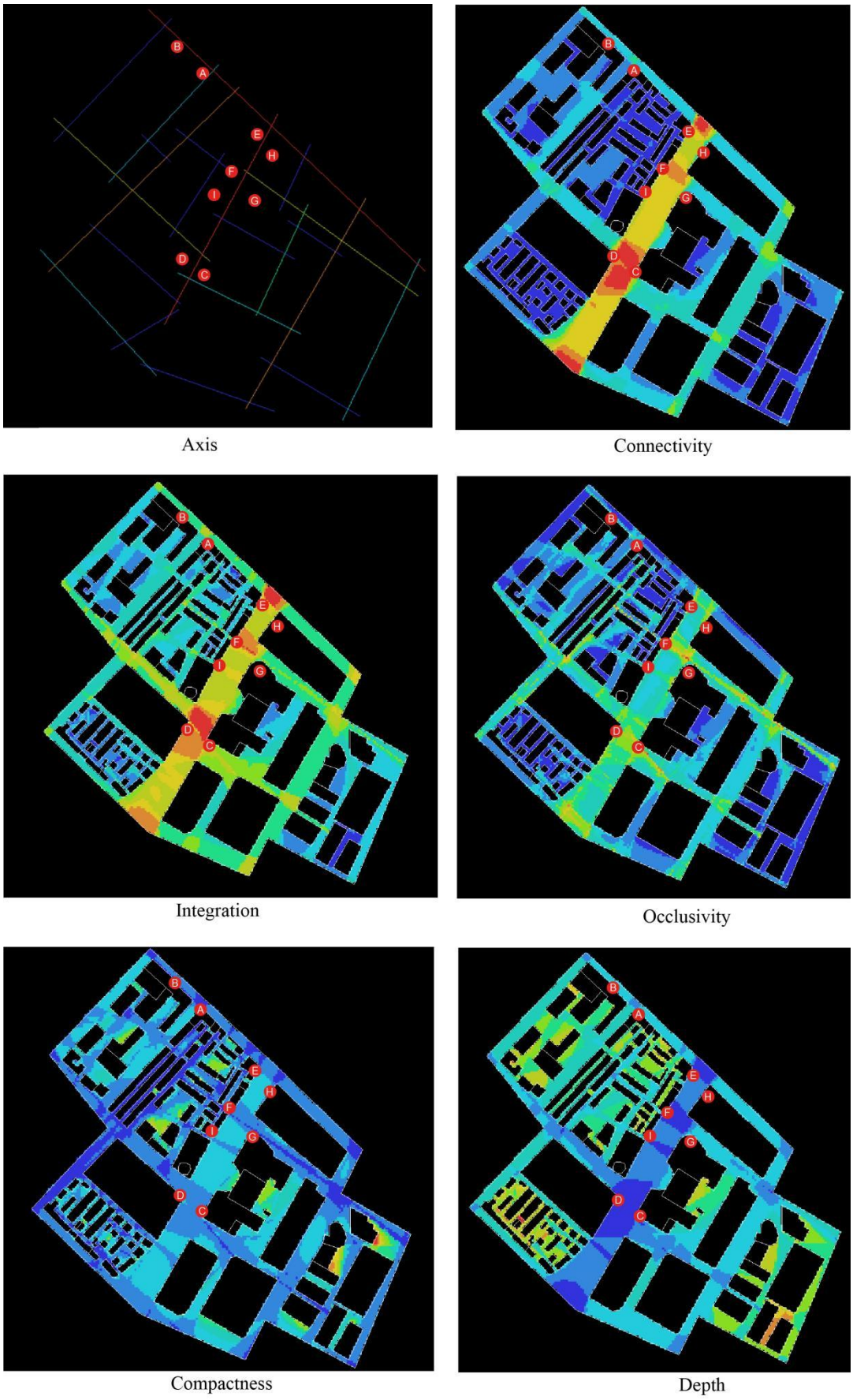


Figure 44. Spatial Syntax Indicator Illustration: Jianghan Road, Wuhan

4.2.3.2.5 Space Syntax Analysis of Media Architecture in Changsha

Calculation of the six indicators of spatial syntax (Table 10) through media architecture in Changsha's urban public space (taking Wuyi Square as an example) led to the following findings.

Table 10. Spatial Syntactic Parameters of Changsha Media Architecture

Changsha	Axis	Connectivity	Integration	Occlusivity	Compactness	Depth
A	11	4548	6.53579	2147.77	0.0796575	2.84111
B	11	4522	7.36327	2885.3	0.078311	2.7
C	11	5498	6.74358	2247.88	0.106217	2.90815
D	11	4361	9.55587	2754.03	0.0799593	2.50076
E	11	2280	7.59454	2342.95	0.057692	2.64298
F	8	2533	8.10461	2811.17	0.050003	2.54894
G	11	1018	6.54562	1085.35	0.103751	2.91785
H	11	3173	7.23371	2709.1	0.0541186	2.72408
I	11	3047	9.1185	3687.71	0.0693208	2.37671
J	11	1848	7.54719	1953.31	0.0510161	2.62479
K	11	4729	9.02775	3313.4	0.0495315	2.65005
L	11	4997	9.07008	3828.6	0.05092	2.53734
M	8	4240	7.10596	1814.6	0.0727223	2.76185
N	11	3232	7.72151	1901.93	0.0719722	2.62504
O	11	2342	9.70336	3499.24	0.0485441	2.30624
P	11	2592	7.63567	2728.44	0.0585238	2.64406
Q	11	498	5.26573	386.832	0.181932	3.384
R	11	3137	8.5136	537.907	0.189925	3.36478
S	4	706	5.30853	171.389	0.118954	3.52974
T	4	932	4.9584	1192.59	0.0723809	3.54303
U	11	2957	4.93645	2512.62	0.0752026	2.67049
V	4	300	4.19642	375.791	0.129109	4.06659
W	8	2528	7.23129	1998.12	0.0773865	2.73617
X	8	2580	7.21308	1386.74	0.0910768	2.74246
Y	4	2874	7.17671	1386.74	0.0931443	2.74921
Average*	3.35294	1446.37	5.58823	1090.36	0.117176	3.41112
Minimum*	2	1	2.09921	4.0366	0.00985917	2.27789
Maximum*	11	7905	9.82361	4487.07	0.723538	6.98011

*The values here refer to the global

Media architecture promotes collective interaction and triggers mimetic behavior among crowds. The axial value of Sample L (Figure 45) is 11, indicating that it is an area with multiple path connections, suitable for high foot traffic. This means that the area has many routes for movement. Sample L's connectivity value is 4997, which is extremely high, demonstrating that the area has numerous direct connections to other spaces, making it a transportation hub or a significant public space with strong accessibility. Sample L's integration value is 9.07008, at a high level, indicating

that it has high centrality and accessibility within the urban spatial network, making it a crucial node for commercial activities and public gatherings. The compactness of sample L is 0.05092, relatively low, showing that the area is quite dispersed, possibly being an open space or an area with large building intervals. This low compactness is suitable for setting up large media screens to ensure wider coverage of information. Sample L's depth is 2.53734, relatively low, indicating that the area is very easy to reach. Low-depth areas are usually the city core, suitable for setting up media architecture that attracts large crowds. The Century Building, where sample L is located, is one of the primary media architectures in the area and frequently appears on social networks. A large number of tourists visiting Changsha take photos here and upload them to social platforms, making content like Cupid and Harry Potter gradually become symbols of Changsha tourism. This phenomenon attracts more tourists to come and take photos. Additionally, a substantial number of people stay here, waiting for special media content that appears approximately every two minutes. Moreover, more crowds, driven by curiosity or herd mentality, also wait around here.

Figure 45. People Waiting to Film Harry Potter on the Screen at Sample L

This phenomenon is not merely the straightforward outcome of crowd gathering and interaction. Instead, it demonstrates how media architecture in modern cities shapes the usage patterns of urban spaces and public behavior through information dissemination and social network effects. According to social capital theory, media architecture provides a platform that enhances crowd cohesion and interaction frequency through visual and experiential attraction, thereby enhancing the social capital of urban spaces (Dubos, 2017). Simultaneously, space syntax theory further explains how the high connectivity and high integration of Sample L enhance its centrality as an urban node. Within this theoretical framework, media architecture is not only a carrier of information dissemination but also a convergence point for social relationships and networks. It strengthens the frequency of crowd interaction through visual and experiential attraction, enhancing the social capital of urban spaces. Furthermore, urban branding and place attachment theory point out that when specific areas attract a large number of tourists and residents through unique media content and visual symbols, these areas not only become symbols of the city but

also promote city branding by enhancing the sense of place and belonging (Lewicka, 2011). Changsha has successfully integrated symbols like Cupid and Harry Potter into its tourism brand through the media architecture of sample L, increasing the city's attractiveness and recognition.

Figure 46. Sample P: A Popular Clothing Shop on Social Media because of the Media Content

In the context of space syntax analysis, consciously designing media architecture forms a crucial foundation for promoting user interaction with the environment. The connectivity of Sample P (Figure 46) is 2592, which is considered medium. In comparison, the connectivity of Samples C and L is 5498 and 4997, respectively, both significantly higher than P, but P's connectivity still exceeds the average value of 1446.37. The integration value of sample P is 7.63567, higher than the overall average of 5.58823. Although slightly lower than the highest integration values found in samples O (9.70336) and D (9.55587), P is still within the high integration range. These data indicate that although the area where Sample P is located is not the most ideal for media architecture placement, Sample P has nevertheless garnered online and offline popularity. Sample P is a clothing store that has received much attention due to its unique design style. Its design features two circles presenting the city's slogan, resembling emoji eyes, and integrates clothing displays, cleverly merging beauty and architectural design. Through creative media display methods, Sample P successfully interacts with people and becomes a popular spot.

As an emerging form that blends information technology with architectural art, media architecture not only meets modern society's demands for information dissemination but also guides innovative development in urban spaces at aesthetic and cultural levels. Through its innovative design and media display, Sample P successfully transforms the building into a dynamic, interactive media platform. This design philosophy extends beyond traditional architectural functions and redefines buildings as cultural carriers and social interaction venues.

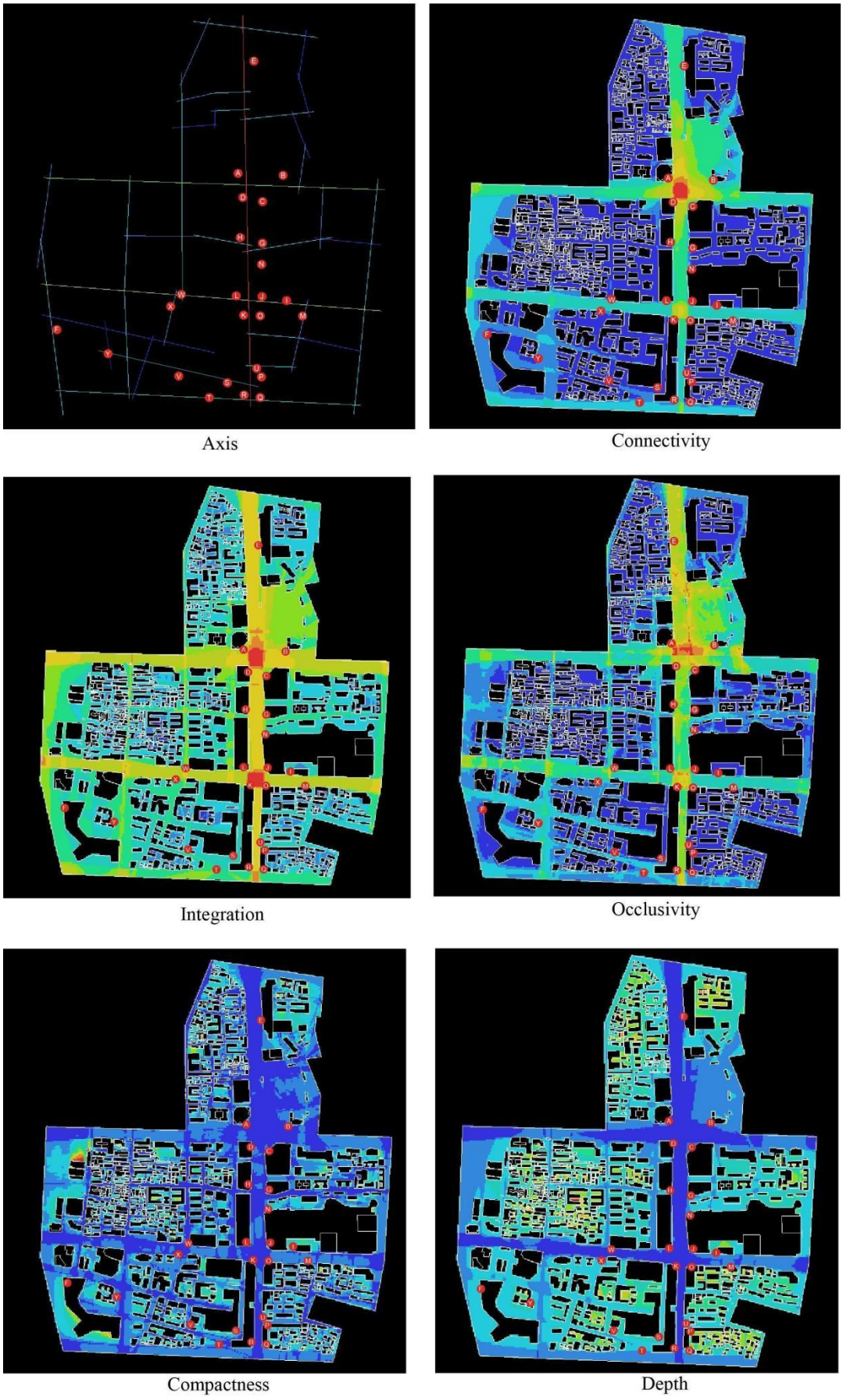


Figure 47. Spatial Syntax Indicator Illustration: Wuyi Square, Changsha

4.2.3.3 Sociology Research Summary

Figure 48. Understanding Media Architecture in a Social Logic

Through Figure 48, this study emphasizes the use of spatial triad and space syntax as approaches and methods for social research to understand and calculate the media architecture in the public space of five cities in China. Research believes that different types of urban public space place different demands on media architecture, which can be transformed into media architecture of different tendencies due to its adjustability, adaptability, and responsiveness. Therefore, media architecture with different tendencies should be judged differently and optimised according to its unique typology using different knowledge structures.

Utilizing different knowledge structures and perspectives can significantly extend the scope of architectural research and more precisely identify pathways for transforming media architecture. This study examines examples from various cities, including Guangzhou, Shenzhen, Chengdu, Wuhan, and Changsha, to reveal their unique characteristics and development trajectories.

The media architecture in Guangzhou's Beijing Road Pedestrian Street is commercially driven, necessitating the integration of commercial logic in architectural design and management. Guided by market demand and analysis, space allocation should align with the building's commercial purposes, overall image, market positioning, and urban planning. For instance, adjusting spatial layouts based on market research can enhance commercial efficiency while maintaining consistency with the city's overall planning, thereby increasing the district's attractiveness and competitiveness. In Shenzhen's Huaqiang North Commercial Area, media architecture is centred on technology, requiring the integration of current applicable technologies such as artificial intelligence (AI) and virtual reality (VR). This transformation turns the area into a lab where technology and architecture mutually enhance each other. By incorporating cutting-edge technologies, the interactivity and innovation of the buildings can be enhanced, creating a distinctive technological architectural cluster that attracts more tech companies and talent, thereby fostering the region's tech industry. Chengdu's Taikoo Li media architecture features fashion and trends as its main characteristics, necessitating careful consideration of visual communication methods. Managing media architecture with a curatorial approach can transform the buildings into dynamic exhibition spaces, with regularly updated content to attract fashion enthusiasts and tourists, thereby enhancing the architectural fashion influence and cultural value. In Wuhan's Jianghan Road, the media architecture is primarily based on historical building preservation, shifting the role of media architecture from outdoor to indoor. Through various media, the positioning of media architecture can be better understood. While preserving historical buildings, modern media technology can enhance cultural display effects, making it a model of the fusion of historical culture and modern technology. Changsha's media architecture resembles a game screen, creating an entertainment atmosphere with numerous screens. Managing Changsha's media architecture requires research into gaming psychology to uncover cultural and commercial significance. For example, gamified design can increase user engagement and enhance the interactivity and fun of the architecture, thus attracting more tourists and consumers.

By using social logic to analyse the media architecture of these cities, it becomes evident that employing different knowledge structures and perspectives helps to more precisely grasp the design and management paths of media architecture, thereby maximizing their functions and value. This not only expands the scope of architectural research but also provides new perspectives and

methods for future architectural practice.

4.2.4 Summary of Positivism Research

This chapter conducts a positivist study on public spaces in Chinese cities through media studies, urban studies, and Sociology research. Initially, through media studies, the primary functions and manifestations of media architecture samples from 15 Chinese urban public spaces were preliminarily defined. The study categorizes these media architectures into three types: City Advocates, Hawkers, and Partygoers, and analyses and organises them based on their locations, audiences, content, and aims. In the realm of urban studies, this research adopts the fractal structure theory of urban imagery to divide the 15 media architecture samples into five types of urban imagery: path, landmark, district, node, and edge. Then it further explores the role and advantages of media architecture in understanding urban imagery through the dimension of time, highlighting the unique contributions of media architecture in dynamic urban environments. Sociology research combines qualitative and quantitative methods to conduct an in-depth analysis of the city samples. Based on this, five representative cities were selected to understand their social production and spatial syntax characteristics. Under the framework of social logic, the study points out that the design, management, and consideration of media architecture should not be limited to architectural design and urban planning. Instead, it should encompass comprehensive considerations across economic, technological, media, preserve, and psychological dimensions. By integrating analyses from media studies, urban studies, and sociology, this chapter aims to provide a more comprehensive and in-depth perspective and reveal the multifaceted functions and potential value of media architecture in Chinese urban public spaces.

4.3 Interpretivism Research

Interpretivism research studies are characterized by their emphasis on understanding human experiences, meanings, and the complexity of social contexts (Alharahsheh & Pius, 2020, p.42). Interpretivist researchers prioritize exploring subjective perspectives and the contextuality of human behavior, aiming to provide deep insights into specific phenomena rather than generalizing findings (Žukauskas et al., 2018, p.510). They consider criteria such as credibility, transferability, dependability, and confirmability as essential for ensuring the research quality (Sutter et al., 2019, p.197). The interpretivist paradigm advocates for qualitative research methods, focusing on depth, richness, and contextual relevance in data collection and analysis (Elbardan et al., 2017, p.112).

In this research, three rounds of semi-structured interviews will be conducted to collect data following the Straussian grounded theory, and a combination of questionnaires and analytic hierarchy process will be used to understand and explain Chinese people's experiences and expectations of media architecture. Glaserian grounded theory and Straussian grounded theory are two major grounded theory approaches developed by Barney Glaser and Anselm Strauss, respectively. Straussian grounded theory are the two main approaches to grounded theory, developed by Barney Glaser and Anselm Strauss, respectively (Mohajan, H, & Mohajan, D). Glaserian grounded theory (GGT), emphasises that theories are "emerging" from the data and that researchers should try to avoid preconceived theoretical assumptions or frameworks and extract concepts and theories entirely from the data (Stern, 2016). The Straussian grounded theory (SGT) used in this thesis emphasises that theory is constructed through systematic data analysis (Thai et

al., 2012). The researcher can use existing theoretical frameworks or concepts in the analysis process to help understand and interpret the data. Emphasis is placed on the use of ”open coding”, “axial coding”, and “selective coding” stages in the analysis process to construct theory by focusing on the core concepts and relationships in the data (Vollstedt & Rezat, 2019).

This study used three rounds of semi-structured interviews (Figure 49), with participants in the first round being co-experiencers from the five selected cities (Guangzhou, Shenzhen, Chengdu, Wuhan, Changsha) in the previous subsection. The second round consisted of designers of media architecture. The third round was with the critics of the media architecture. Each round of interviews was justified until saturation. Details of the participants in the three rounds of interviews will be added in subsequent chapters. During each round of interviews, users are confronted with questions that will be adapted to the needs of the research process and will be required to complete different tasks. For example, the first round of interviews will be required to complete a questionnaire, and the beginning of the second round will involve an evaluation of the content of the first round. If there are no new units of meaning surface in the second round, the third round will continue to be based on the content that emerged in the first round.

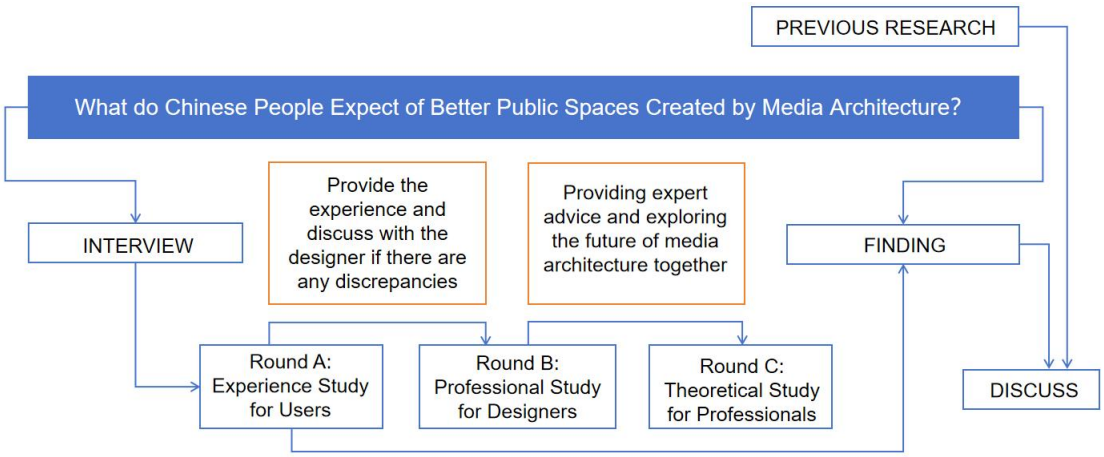


Figure 49. The Relationship between the Three Rounds of Interview

By combining positivist research with interpretivist research, it is possible to gain a more comprehensive understanding of what Chinese people think about and expect from media architecture in urban public spaces. In the preceding empirical research, the study has analysed and explored different levels of media architecture in urban public spaces in China and concluded that media architecture requires more ways and means of understanding. The chapter of the interpretivist research will focus on exploring a more nuanced understanding of and thinking about the users’ use of the proposed media architecture. Positivism honours objective facts, using structures and tools to evaluate and calculate the objective world, while interpretivism honours subjective opinions, exploring and digging deeper into the perceptions of media architecture by experiencers, designers, and policymakers.

4.3.1 Round A: Experience Study for Users

Table 11. Basic Information of Interviewee in Round A

No	Age	Field	Gender	Education	Live	Tour	Purpose
A1	21	Education	Male	Under graduate	Huizhou	Guangzhou	Daily leisure, Sightseeing tourism
A2	26	Manufacturing	Female	Under graduate	Guangzhou	Guangzhou	Work or meetings, learning
A3	27	Art	Male	Under graduate	Chengdu	Chengdu	Visiting exhibitions or events, Work or meetings, learning
A4	36	Wholesale and retail trade	Female	Primary	Qingyuan	Shenzhen	Work or meetings, learning
A5	29	Art	Male	Post graduate	Wuhan	Wuhan	Appreciate architectural design, Work or meetings, learning
A6	34	Finance	Female	Under graduate	Shenzhen	Shenzhen	Daily leisure, Appreciate architectural design, Work or meetings, learning
A7	49	Health and social work	Female	High school	Wuzhou	Changsha	Sightseeing tourism
A8	50	Public administration, social security and social organizations	Male	Post graduate	Changsha	Changsha	Daily leisure, Appreciate architectural design

Round A focuses on research involving participants who have previously been interviewed or surveyed together. Between 2022 and 2024, the researchers conducted field studies in over 15 cities across China, during which they met some of the interviewees at the sample locations. In the previous section, the research sample was further narrowed down to media architecture in public spaces within 5 cities. Therefore, between December 13 and December 29, 2023, the researchers specifically invited 8 participants from these 5 city samples for semi-structured interviews and questionnaires.

The basic information of the interviewees is presented in Table 11. Their ages range from 21 to 50 years, with an average age of 34 years. Gender balance is maintained as much as possible, and they come from a wide variety of fields, including arts, manufacturing, wholesale and retail trade, etc. Their educational backgrounds range from primary school to postgraduate, ensuring a diverse array of opinions. The proportion of local residents to tourists is 5:3, to incorporate a wide range of views. The interviewees' purposes and behaviours when touring the media architecture were different. The study specifically sought out these interviewees to gather more comprehensive data.

4.3.1.1 Open Coding of Round A

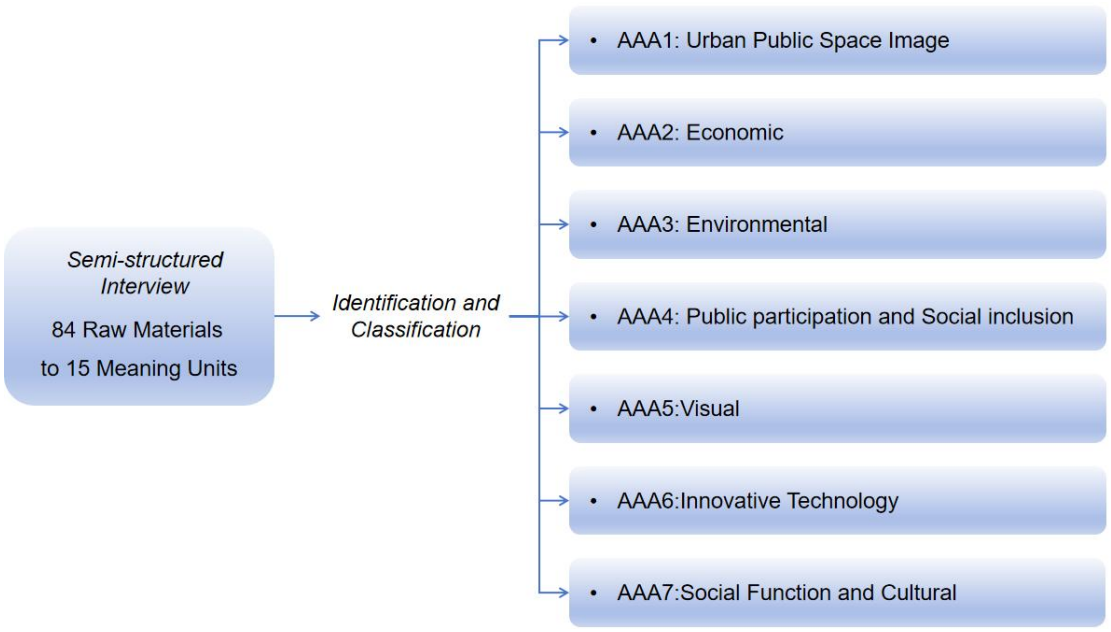


Figure 50. Open Coding of Round A

Following the logic of grounded theory's open coding, this research conducted semi-structured interviews with eight participants, labeled A1 to A8. After transcribing the audio recordings into text, an initial reading and cleaning of the data were performed to ensure its completeness and usability. Subsequently, a preliminary analysis was carried out to understand the general content and themes of the data. During this process, 84 raw materials were identified and marked as keywords or phrases. These raw materials were then categorized into 15 meaning units, which were further analysed to develop 7 preliminary open codes. Throughout the data processing, newly identified concepts were continuously compared with existing categories to verify and refine the definitions and boundaries of these categories. Finally, the accuracy and scientific validity of the classifications were ensured through repeated comparison and refinement.

The relationship between the raw material and the open codes is basically constructed in Table 8, where the 15 meaning units are numbered from AA1 to AA15, and the 7 open codes are named AAA1 to AAA7. More details of the coding process can be found in Table 12 in the Appendix. The raw material is numbered according to the interviewer's number, as well as the order of the raw material. For example, A1-1 should be interpreted as the raw material from which the first sentence was extracted from the data in the transcribed text of Interviewee A1.

Table 12. Coding Process for Round A

Raw Material	**Meaning Units**	**Open Coding**
A1-2, A1-15, A3-1, A3-9, A5-2, A7-5, A8-4	AA1: The image of city	AAA1: Urban Public Space Image
A3-3, A3-5, A3-10, A6-2,	AA2: Design style in harmony with the city	
A1-9, A2-5, A2-13, A6-4	AA3: Revealing urban development	AAA2: Economic
A1-5, A1-8, A3-6, A4-4, A5-7, A7-6	AA4: Economic impacts	
A2-11, A6-13, A8-5	AA5: Environmental social responsibility	AAA3: Environmental
A1-4, A1-16, A2-2, A2-12, A3-7, A6-11, A7-9, A8-6	AA6: Public needs	AAA4: Public participation and Social inclusion
A1-10, A4-6, A5-5, A5-6, A6-6	AA7: Content considerations	
A4-5, A4-7, A8-7	AA8: Digital divide	
A1-13, A2-8, A4-1, A5-1	AA9: Stimulate creativity and imagination	AAA5: Visual
A1-1, A2-1, A6-1, A7-1	AA10: Visual effects sensation	
A1-7, A1-12, A1-17, A4-2, A5-3, A6-3, A6-5, A6-7, A6-9, A6-10, A7-2, A7-3, A7-7, A7-10, A8-1	AA11: Bringing the media to think	AAA6: Innovative Technology
A2-3, A2-9, A6-9, A6-12,	AA12: A symbol of technological development	
A1-14, A2-10, A5-4,A7-8	AA13: Promoting cultural international exchanges	AAA7: Social Function and Cultural
A1-3, A1-6, A1-11, A2-7, A3-2, A4-3	AA14: Social and cultural role	
A2-6, A3-8, A8-3	AA15: Cultural symbols and history	

During the interviews, the research summarized that media architecture primarily influences the city's image and style in urban public spaces (AAA1). Media architectures are regarded as landmarks and symbols of the city (A1-2), which was mentioned in the process of city visual promotion and subsequently translated into synonymous representations of the city's image (A3-9). For instance, just as the mention of the Eiffel Tower evokes thoughts of Paris, the media architecture of May Day Square conjures images of Changsha (A7-5), forming the city's main visual identity. Additionally, media architecture in public spaces is believed to need to harmonize with the overall style of the city (A3-10).

> *A3-9: "Not to mention that that 3D panda has long since taken the internet by storm and turned into a representation of the city of Chengdu"* quot (transl.) an interviewee in Chengdu in 2023.

The impact of media architecture on the real economy is also considered a significant expectation

(AAA2). Media architecture is viewed as a fusion of technological development and architectural design (A1-9), effectively reflecting the development of the digital economy and the digital age (A2-13). Meanwhile, another function of media architecture is to stimulate economic growth (A1-5), encouraging people to leave their homes and enter physical spaces for viewing, entertainment, and consumption (A3-6). Although the construction and operation costs of media architecture are high, the economic returns are deemed worthwhile (A4-4).

Due to the high construction and operation costs of media architecture, environmental protection and social management have become other focal points (AAA3). Interviewees are concerned about whether energy-saving materials will be used in future media architecture construction (A2-11) and whether future media architecture will be more planned (A8-5) and participatory (A6-13).

As for the future performance of media architecture in public spaces, interviewees are more focused on whether media architecture can better attract and gather different groups (AAA4). The social atmosphere-building function of media architecture is highly anticipated, as it is believed to attract young people and bring new vitality to the city's image (A1-4). Meanwhile, media architecture is also understood as a common language between residents and tourists, linking people from different regions (A2-12). However, these expectations also face challenges from residents' rights to information and participation (A8-7). Additionally, as a product that stems from emerging technology, media architecture might give rise to a digital divide among groups who are not accustomed to electronic products (A4-6). Consequently, both the design and content of media architecture continue to encounter challenges regarding participation (A5-6).

> *A1-4: "It is also able to show the positive energy of the social atmosphere, such as building a youthful life and so on. This kind of social energy orientation, I think, has a very deep and powerful influence on people's daily subtle influence"* quot (transl.) an interviewee in Guangzhou in 2023.

In terms of visual effects, the visual impact created by media architecture is considered representative of the future and innovation (AAA5). Media architecture is seen as a combination of technology and art, capable of stimulating the imagination of city residents (A2-8). When city residents see media architecture, they often envision scenarios of the future world (A4-1, A5-1). Although some believe that media architecture has become a common architectural phenomenon (A1-1), the visual effects of future media architecture are still regarded as desirable and effective (A7-1).

Future media architecture should enhance its attractiveness and functional relevance through real-time interaction, the integration of digital media, the display of cultural symbols, and innovative design strategies, aligning with broader modernization trends (AAA6). However, the current implementation of real-time interaction in media architecture has been identified as an area requiring significant improvement (A1-17). To address this, future media architecture should adopt more creative and adaptive functions, establishing itself as a central element in digital place-making within urban environments (A2-9). Additionally, existing media architecture is often

criticized for creating a disconnect from traditional urban forms (A5-3), while renovated structures frequently encounter similar challenges (A6-5). Enhancing interactivity and fostering technological innovation are thus essential for improving the perception and evaluation of media architecture in the future.

Future media architecture should also aim to seamlessly integrate advanced media technologies with architectural design while incorporating elements of a city's historical and cultural heritage. This approach ensures an innovative synthesis of modern technology and cultural legacy (AAA7). Media architecture has the potential to effectively symbolize a city's modernization, making it an attractive platform for international events and investments (A2-10). Moreover, due to its unique media attributes, media architecture serves as a highly effective medium for cultural expression and dissemination (A1-11, A3-2), addressing contemporary demands for cultural and informational exchange (A3-8).

In summary, media architecture profoundly influences urban public spaces by shaping city identities, driving economic growth, fostering social cohesion, and preserving cultural values. Serving as both iconic landmarks and functional components, media architecture promotes economic activity and enhances social interaction. To fully realise its potential, future media architecture must address critical challenges, including high development costs, environmental sustainability, and the necessity of public participation and inclusivity. By prioritizing energy-efficient materials, sustainable practices, and user-centred design, media architecture can create vibrant, meaningful urban spaces. Furthermore, by harmonizing cutting-edge technology with cultural heritage, it can bridge cultural and generational divides, fostering dynamic and inclusive urban environments. Through innovative design and sustainable approaches, media architecture can play a pivotal role in shaping the cities of the future.

4.3.1.2 Axial Coding of Round A

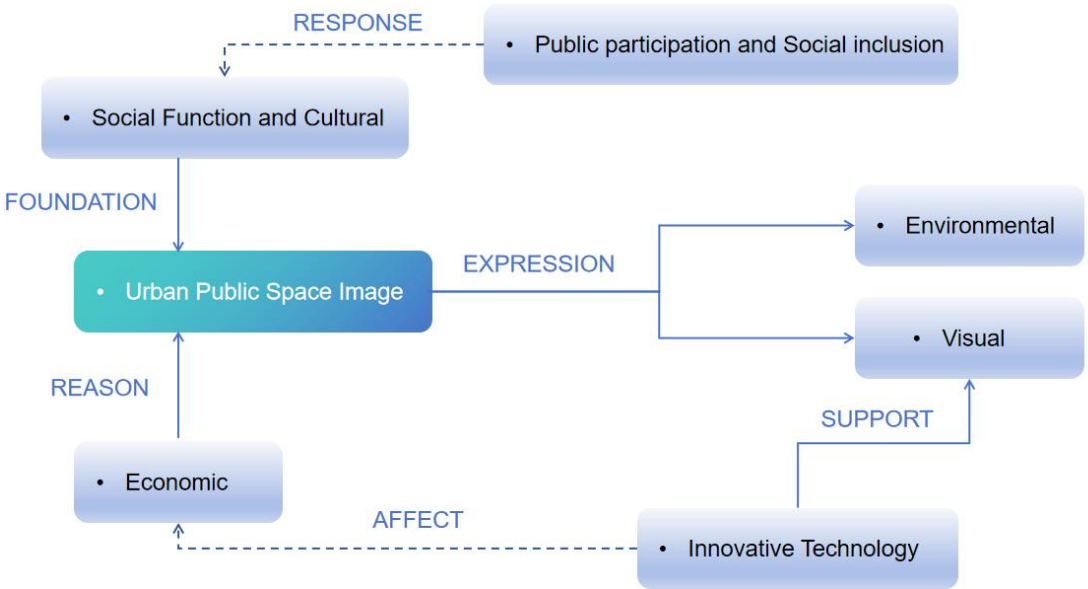


Figure 51. Axial Coding of Round A

Figure 51 illustrates the axial coding process of Round A, where the study centres on the concept of the urban public space image. In the initial stages, open coding was applied to analyse the collected data and raw materials, resulting in the identification of seven open codes. The axial coding stage then focused on establishing relationships among these codes, exploring their logical connections, and aligning them with the coding paradigm. The findings indicate that the urban public space image is expressed through two primary dimensions: environmental place-making and the visual imagination of urban public spaces.

Innovative technology plays a pivotal role in shaping the visual dimension, while also contributing to economic development, which serves as a critical driver in the evolution of urban public space imagery. At the same time, the foundation of the urban public space image lies in its social and cultural functions, which are further influenced by public participation and social inclusivity. The analysis highlights the complex interplay between these dimensions, suggesting that the urban public space image reflects not only technological and economic advancements but also societal values and cultural integration as mediated through public engagement and governance.

There are three main lines in the above model of Chinese people's expectations of urban public space, namely, the media architecture expression of the image of urban public space, the social participation and governance basis of media architecture, and the operation and management path of media architecture.

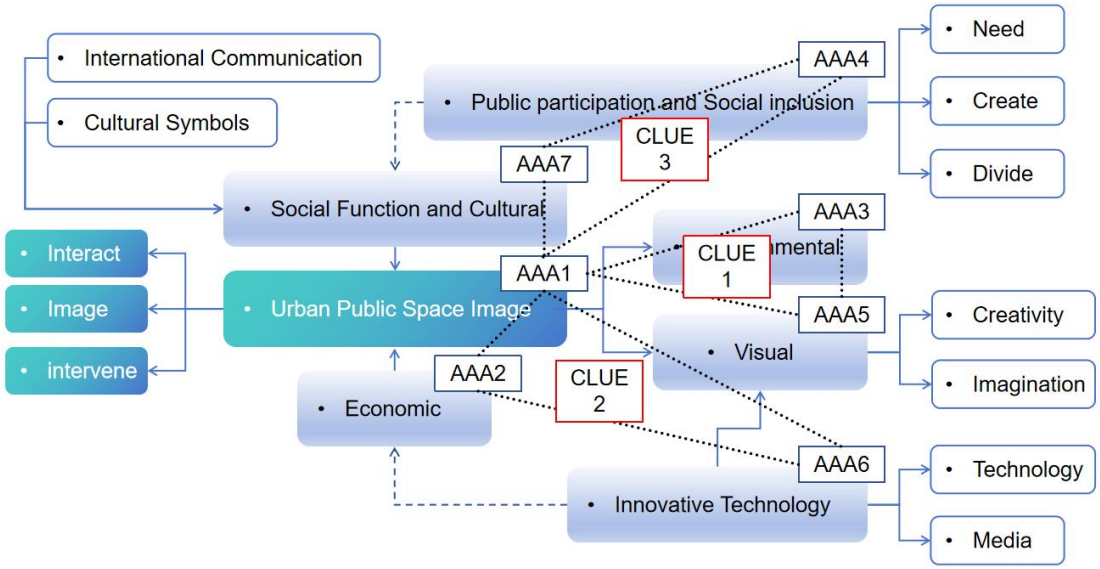


Figure 52. Establishing Relationships between Opening Coding for Round A

The first clue revolves around how to design a better urban public space image, forming a conceptual pathway by connecting AAA1, AAA3, and AAA5. The image of urban public spaces is expressed through environmental placemaking and visual imagination. Often, the image of urban public spaces is understood as landmarks or representative views of the city, which entails a process from physical architecture to visual translation and then to visual association. This understanding process encompasses principles of visual communication, communication studies, and graphic design. Under the influence of media architecture, the translation process becomes

more complex, superimposing the information expressed by the architecture with the content displayed on screens, creating a unique visual experience and translation process. Therefore, in understanding environmental placemaking and visual space imagination, the special considerations of media architecture need to be taken into account. In other words, the design process of media architecture differs from traditional architectural design, requiring a thorough consideration and analysis of its differences in information conveyance. Current data is insufficient to fully interpret these differences, which will be strengthened by further rounds of research.

The second clue focuses on how to measure the quality of the interactive process, forming a conceptual pathway by connecting AAA1, AAA2, and AAA6. Measuring the quality of interaction in media architecture requires economy-driven technology as a place and user service. As a construction trend, media architecture gradually becomes a construction paradigm in modern cities under urbanization and digitalization. This process necessitates considering aspects of urban planning, management, and economics to understand media architecture comprehensively. Additionally, media architecture has close ties to the economy. How media architecture can better promote technological transformation to improve the quality of urban public spaces is an important research direction in the future.

The third clue addresses whether guidance is needed during the intervention, forming a conceptual pathway by connecting AAA1, AAA4, and AAA7. Media architecture is a product of innovation in the digital age and urban development, requiring professional guidance throughout the process. The interactive process of media architecture is exciting and anticipated. Existing media architecture in urban public spaces already functions to gather crowds, create vibrant atmospheres, and foster collective interactions. However, digital technology barriers and the digital divide are mentioned in this context. Additionally, the necessity for and reflections on the construction of media architecture are matters of concern in the data. It is worthwhile to question whether media architecture can adequately reflect culture and urban life. Therefore, in order to offer better guidance for the design and management of future media architecture, it is necessary to incorporate more professional viewpoints in future research.

4.3.1.3 Selective Coding of Round A

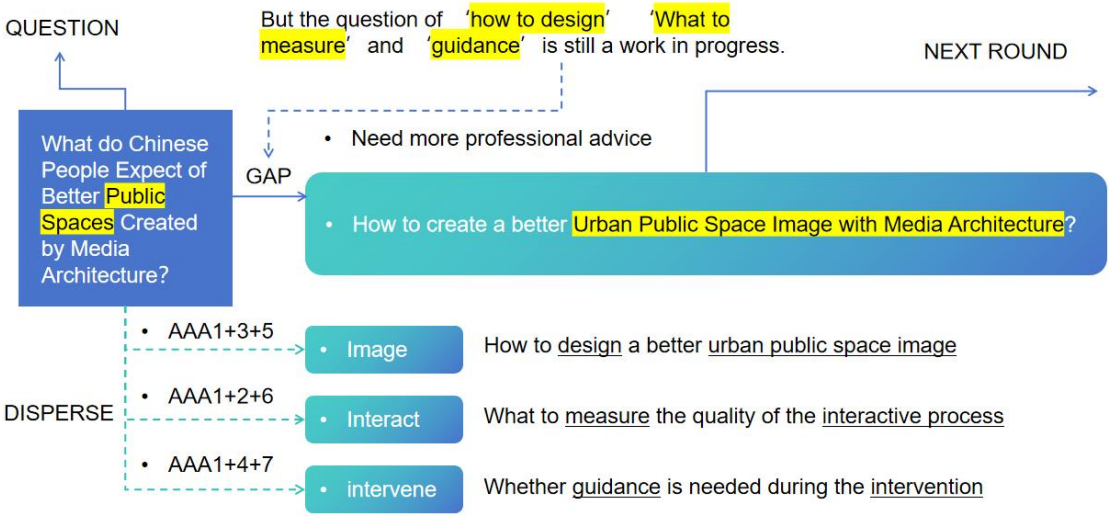


Figure 53. Reasons from Round A to Round B

After the initial coding was completed, the research team identified three core categories or themes that became clues through axial coding, and these core category clues would be the basis for constructing the theory. Subsequently, the theory was constructed around the core categories, ensuring that all categories and concepts were linked to the core categories. Finally, the theory was validated and supplemented by checking for consistency and completeness and, if necessary, returning to the data for missing evidence or conducting additional data collection. However, when discussing the three core threads, it was found that the extant data was not sufficient to support the theory to answer the research questions. Therefore, in the next phase of the study, data will be collected to gather more input on the design, evaluation, and instruction of media architecture.

4.3.1.4 Questionnaire of Round A

In this study, before conducting the previous stage of the interview, the interviewees were also interviewed in Round A to fill in a questionnaire before the formal interview, as shown in Table 13. The questionnaire consisted of seven parts and the form simplified the answers to the questionnaire. However, after studying the questionnaire and the interviews at Round A, the questionnaire was deemed to be inefficient. Therefore, the information collected from the first round of questionnaires combined with the data from the semi-structured interviews will be used in subsequent studies to form an analytic hierarchy process for use in the subsequent Rounds B and C.

In this research, the application of media architecture in modern cities has garnered widespread attention and discussion. According to the analysis of the survey results, all respondents unanimously believe that media architecture should fully consider the surrounding environment in its design. Most people also think that cultural and historical factors should be considered, with only a few respondents considering cultural history irrelevant to media architecture. Regarding overall evaluation, respondents' ratings of media architecture range from "average" to "very capable", but the general trend is positive, indicating that people hold a favorable view of the role

of media architecture in the city. Most respondents believe that media architecture can effectively showcase the city's effect, and the media form mostly aligns with the building itself, with some even stating that it "perfectly fits". As for the value assessment, media architecture is widely considered to have artistic, practical, cultural, and social value. Particularly in terms of artistic and social value, respondents' evaluations are notably positive. This suggests that media architecture is not merely decorative but an important reflection of urban culture and social function. Economically, more than half of the respondents indicated a willingness to pay higher prices to see media architecture, and most are willing to visit again and recommend it to others. This further demonstrates the appeal and popularity of media architecture. When it comes to attraction and interaction, most respondents believe that media architecture can attract unique attention and create a sense of identity and imaginative resonance. The majority also think that media architecture can stimulate interactive memory, significantly enhancing the connection between the city and its residents. All respondents had a positive overall impression of media architecture, further confirming its popularity among the public. Regarding the environmental impact and sustainability, all respondents believe that media architecture positively influences the site, and most consider it sustainable. This indicates that media architecture plays a positive role and has the potential for environmental protection and resource utilization. Finally, the characteristics of media architecture mentioned by respondents include "interactive experience", "environmental protection and sustainability", "advanced technology", and "social responsibility", with some also noting "aesthetic value". These characteristics demonstrate that media architecture is diverse in functionality and excels in social responsibility and environmental protection.

Table 13. Summary of Questionnaires

Number		A1	A2	A3	A4	A5	A6	A7	A8	Count	Rule
Context	Environment	●	●	●	●	●	●	●	●	8	●: Yes ○: No
	History	●	○	○	●	●	●	●	●	6	
Feeling	Mark	○	●	○	●	●	○	●	●	5	
	Display	●	●	●	●	●	●	●	●	8	
	Form	○	●	●	●	○	○	●	●	5	
Value	Art	●	●	●	●	●	○	●	●	7	
	Function	○	●	●	●	○	●	●	●	6	
	Culture	●	●	○	●	●	○	●	●	6	
	Social	●	●	●	●	●	●	○	●	7	
Price	Expensive	○	○	●	●	●	●	●	●	6	
	Revisit	○	○	●	●	●	○	●	●	5	
	Recommended	○	○	●	●	●	○	●	●	5	
Attraction and Interaction	Attraction	●	●	○	○	●	●	●	●	6	
	Identity	○	●	○	○	●	○	●	●	4	
	Image	●	●	○	○	●	○	●	●	5	
	Interaction	●	●	●	●	●	○	●	●	7	
Site impact and sustainability	Perception	●	●	●	●	●	○	●	●	7	
	Impact	●	●	●	●	●	○	●	●	7	
	Sustainability	●	●	●	○	●	●	●	●	7	

In summary, media architecture holds significant artistic, practical, cultural, and social value in urban development. It can effectively display the city's image, attract public attention, and promote interaction and a sense of identity between people and the city. Besides, its positive environmental impact and sustainable traits further reinforce its status as an indispensable part of modern cities.

4.3.2 Round B: Professional Study for Designers

Table 14 Basic Information of Interviewee in Round B

No	Age	Career years	Gender	Highest Academic / Field	Type of institution	Major projects	Character
B1	35	6	Male	MA in Illustration, MFA in Motion Media Design	Design Company	Business, Culture, Entertainment, Digital Media, Metaverse	Designer
B2	31	6	Male	PHD in Design	Design Company	Culture, Entertainment, Digital Media, Metaverse	Designer
B3	38	14	Female	MEng in Digtal Media	Proprietor	Traffic Building	Operator
B4	42	14	Male	MArch in Architecture	Architecture Company	Business, Culture, Education, Enterta inment	Designer
B5	34	6	Male	MA in Lighting Design	Lighting Design Company	Culture, Entertainment	Designer
B6	39	12	Female	BA in Business Management	Lighting Design , Media Company	Business, Culture, Digital Media, Metaverse	Project Manager
B7	27	4	Male	MArch in Architecture	Architecture Company	Residential, Commercial,Culture	Designer
B8	55	28	Female	PHD in Urban Planning	Government Organisation	Residential, Commercial, Culture, Education, Entertainment	Operator

Round B of the research focuses on designers or managers with experience in media architecture design and management. While Round A primarily established the research paradigm and structure for this study, there remains a need for additional professional insights. Therefore, this round of research places greater emphasis on the opinions of professionals. Through semi-structured interviews, we aim to reflect on their experiences with media architecture projects and their expectations for future trends in this field. From March 9 to April 12, 2024, researchers

invited eight individuals to participate in these interviews (Table 14). All interviewees have design experience and representation in media architecture within China. The participants' ages range from 27 to 55 years, with an average age of 37.625 years. Their working experience ranges from 4 to 28 years, with an average of 11.25 years. This diverse sample aims to capture a wide array of opinions from individuals with different ages and varying levels of professional experience. The study also considers differences in academic background, work background, and identity to encompass a broader range of perspectives.

4.3.2.1 Open Coding of Round B

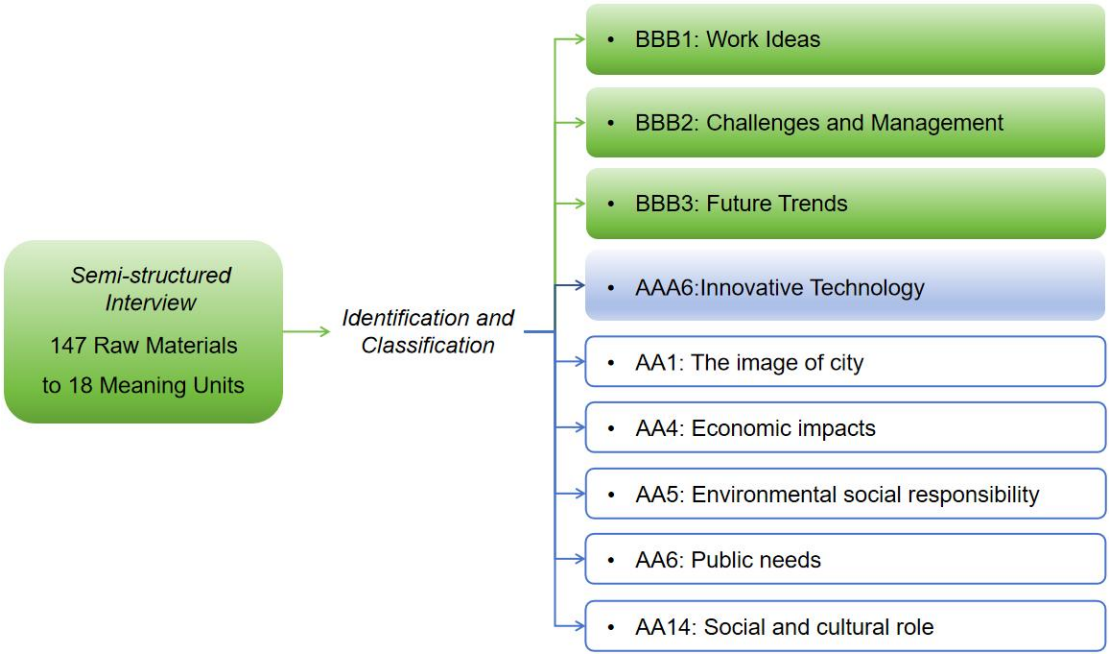


Figure 54. Opening Coding of Round B

The second round of grounded theory continues to strictly adhere to the grounded methods outlined in the preceding chapters. In Round B, semi-structured interviews were conducted with 8 participants, designated as B1 to B8. After recording and clarifying the data (Table 15), 147 raw data items were obtained and further divided into 18 meaning units. Among these meaning units, 12 were newly emerging meaning units, while the remaining 6 were encompassed within the open coding of Round A. These 12 newly emerging ones were designated as BB1 to BB12, which were further analysed and categorized into 3 open codes (BBB1 to BBB3).

In this interview, the study summarized the respondents' work approaches, highlighting the diversity in their methodologies and thought processes (BBB1). The majority of the interviewees played significant roles in the design and implementation of media architecture and content production (B7-1). The various roles in media architecture and content creation encompass designers, consultants, scriptwriters, and so on, emphasizing the balance between customer service and creative realization (B1-10). Some interviewees mentioned that with the advancement of technology and media design methods, the role of designers is gradually evolving into that of consultants, providing content and requirement recommendations (B1-19).

Table 15. Coding Process for Round B

Raw Material	**Meaning Units**	**Open Coding**
B1-1, B1-10, B1-19, B2-1, B3-3, B5-1, B7-1, B8-2	BB1: Participating Roles	BBB1: Work Ideas
B1-3, B1-5, B1-9, B1-22, B2-2, B2-3, B2-4, B3-1, B3-8, B3-9, B4-1, B4-3, B7-3, B8-1	BB2: Workflow	
B1-2, B1-26, B2-5, B4-2, B7-2, B8-10	BB3: Environmental Interaction	
B1-14, B2-8, B2-14, B3-14, B4-11, B5-12, B5-14, B5-17, B5-18, B5-30, B5-33, B6-13, B8-3, B8-13	BB4: Planning and Management	BBB2: Challenges and Management
B1-12, B1-13, B2-10, B3-4, B3-10, B5-2, B6-11, B7-6, B8-6	BB5: Technical Challenges	
B1-11, B1-17, B3-5, B5-16, B6-8, B6-10, B7-4	BB6: Cognitive Bias	
B1-4, B3-6, B5-3, B5-4, B5-6, B5-23, B5-29, B5-31, B5-32, B5-35, B5-36, B6-1, B6-2, B6-5, B6-6, B7-5, B8-5, B8-8	BB7: Market Feedback	
B1-24, B3-2, B3-7, B3-15, B4-6, B4-12, B5-7, B7-7, B7-11, B7-12	BB8: Technology Trends	BBB3: Future Trends
B1-23, B1-27, B1-29, B2-12, B2-16, B3-13, B5-5, B5-13, B5-24, B7-9, B8-9	BB9: Content Trends	
B1-20, B1-21, B1-25, B1-28, B2-15, B3-11, B3-12, B4-7, B5-8, B5-9, B5-10, B5-19, B5-21, B5-22, B5-25, B5-28, B6-9, B6-12, B8-7, B8-12	BB10: Design Trends	
B1-16, B4-4, B5-20	BB11: Styling Trends	
B1-20, B2-11, B7-10	BB12: The Impact of Artificial Intelligence	
B1-6, B1-8	AA1: The image of city	AAA1: Urban Public Space Image
B4-8. B6-4	AA4: Economic impacts	AAA2: Economic
B1-7, B1-15, B2-9, B5-11, B5-15	AA5: Environmental social responsibility	AAA3: Environmental
B4-9, B4-10	AA6: Public needs	AAA4: Public participation and Social inclusion
B1-18, B2-6, B2-7, B2-13, B2-17, B5-26, B5-27, B5-34	AA11: Bringing the media to think	AAA6: Innovative Technology
B4-5, B6-3, B6-7, B7-8, B8-4, B8-11	AA14: Social and cultural role	AAA7: Social Function and Cultural

Regarding workflow (BB2), the design content of media architecture spans advertisements, public buildings, urban planning, and cultural facilities. In terms of methodologies, the interviewees presented two main approaches: one that starts from content and another that starts from the environment and equipment (B1-3). In content design, there is a focus on visual impact, dynamism, and functionality (B1-9). Additionally, immersive storytelling in media is another direction explored (B3-1). Designs that originate from the environment emphasize more on the interaction between people and their surroundings (B3-9). Media architecture not only serves as a medium for exhibitions but also integrates into urban life and cultural exchanges (B4-3). Furthermore, media architecture intervenes in the creation of digital spaces, showcasing characteristics of multi-media narratives (B2-5).

In semi-structured interviews, participants identified numerous challenges encountered in their work, including issues related to planning and management, technical difficulties, perceptual biases, and market feedback (BBB2). As media architecture becomes increasingly prevalent within urban landscapes, associated planning and regulations are continually evolving to accommodate this emerging architectural form (B2-8, B5-33, B8-13). Media architecture must align with the overall urban design and planning to ensure its harmonious integration into the cityscape (B1-14). Cities should categorize media architecture in different zones, including open, encouraged, restricted, and strictly prohibited areas, to distribute resources rationally and mitigate its impact (B5-18). Concurrently, practitioners should engage in self-assessment and self-criticism to enhance their professional skills, unify their understanding, and collectively advance the industry (B6-13).

Media architecture projects encounter a multitude of challenges and demands in the realm of technical presentation, often necessitating compromises between technology and visual effects, balancing high costs with innovation, and addressing environmental impact and energy efficiency (BB5). Frequently, projects require compromises between design and actual outcomes, particularly concerning screen color, resolution, and dynamic content variation (B1-12). These adjustments aim to ensure that the final results meet expectations while minimizing technical issues that could affect user experience (B6-11). Despite the high investment costs and the susceptibility of equipment to damage, clients are generally willing to bear these substantial expenses to achieve innovation and utilize the latest technologies (B3-4). Technological innovation not only enhances the visual effects of projects but also reflects the client's innovative spirit (B3-10). When designing and managing media architecture, it is crucial to consider issues such as light pollution and energy consumption (B2-10). Therefore, innovative design and technological strategies must be employed to effectively balance visual appeal, energy efficiency, and the reduction of environmental interference (B8-6).

In addition to technical challenges, media architecture frequently encounters cognitive biases (BB6). Clients often misunderstand the design outcomes and believe that designs appear too dark or lack elements, leading to a perceived absence of design sophistication, which represents a common cognitive bias (B6-10). Furthermore, the dynamic content of media architecture can sometimes become monotonous, as operators occasionally misconstrue it as merely rigid billboards (B1-17). Despite clients' aspirations to incorporate new technologies and equipment

into projects, actual budgets often fall short of supporting these innovative designs (B6-8). Budget constraints result in the abandonment of some creative proposals, underscoring the need to balance creative realization with cost control in innovative projects (B7-4).

This issue extends beyond the gap between managers and designers and includes discrepancies between designers and contractors. For instance, projects frequently encounter information asymmetry, particularly in compromises between high and low screen resolutions, decoding rate issues, and screen color mismatches (B1-11). Media architecture must adhere to specific shapes and display sequences, which poses a challenge for conventional video designers (B3-5).

Interviewees indicated that feedback from cities, markets, and users constitutes a significant challenge in designing media architecture. Media architecture plays a crucial role in enhancing urban image and vibrancy; its unique exterior designs and dynamic lighting effects attract numerous citizens and tourists, thereby boosting the city's global image (B8-5). Against this backdrop, substantial investment in night-time tourism projects has markedly improved economic benefits, with project stakeholders willing to undertake more high-quality project upgrades (B6-5, B6-6). However, the high costs and maintenance difficulties of such projects remain primary challenges. Clients invest substantial funds in projects but face numerous difficulties during implementation and maintenance (B3-6, B5-23).

Thus, continuous innovation and adaptation are imperative for media architecture, with content requiring interactive elements to maintain audience attention and interest (B5-32). For example, public engagement can be enhanced by utilizing social media polls to involve the public in nightscape creation (B7-5). Additionally, providing new content for media architecture, such as works by young artists, can significantly enhance the city's openness and cultural diversity (B5-6).

> *B5-6: "We didn't encounter any opposition to the extremes that we were presenting (in Media Architecture). Including the inside is also very accidentally appeared kind of character is the future of science fiction some people er anime characters. I think this is if for a municipal government, including the Shenzhen Municipal Government in the neighbourhood, this kind of feeling it is very niche some of the images I can be on, so I feel very surprised. At the same time, I also think that Shenzhen is still quite open to that kind of, uh, actually the most open to a diversity of citizens, I understand that as long as it's healthy, it's okay"* quot (transl.) an interviewee in Shenzhen in 2024.

The interviewees also discussed the future trends in media architecture concerning technology, content, design, and form during the interviews (BBB3). The technology of media architecture must balance innovation with environmental integration, exploring open-source technologies to develop curatorial media architecture (BB8). Continuous technological innovation is required to attract audiences with surprising display methods while enhancing interactivity. This will ensure that media architecture can not only hold commercial value but also attract popularity and increase engagement (B1-24, B5-7, B7-12). Curatorial media architecture leverages its unique advantages by offering adjustable content and flexible technical configurations, enabling adaptation to various public events, exhibitions, and performances, thus ensuring its utility and social functionality

around the clock (B4-12, B3-15). Additionally, modular and precise lighting systems are also considered directions for technological development (B3-2, B4-6).

When designing and managing media architecture content, it is necessary to balance commercialization and cultural expression. This can be achieved by enhancing interactivity, controlling content pacing, and reducing textual displays to improve public acceptance and engagement (B1-23). Future media architecture should focus more on the integration of community and cultural narratives (B7-9). By combining the latest technologies and art, the display effects can be optimized, promoting the development of urban nighttime economy and cultural activities. Some interviewees believe that future media architecture content should be innovative and cultural, and return to simplicity and learn from natural light (B5-24). Moreover, future media architecture design should be closely linked with technology (BB10). Media architecture should emphasize interactivity and fun, attracting public participation through interesting and artistic installations to enhance user experience (B1-21, B3-11, B5-22). It should also actively interact with the community, collect feedback, and integrate it into projects to ensure they meet community needs, thereby increasing public participation (B3-12, B4-7). In terms of form, media architecture should pay attention to its relationship with the site, seamlessly integrating the environment into the media format (B1-16). Furthermore, given the technology-driven nature of media architecture, most interviewees are optimistic about integrating media architecture with new technologies, such as artificial intelligence and virtual reality (B1-20, B2-11, B7-10).

This round of interviews also provides new insights into aspects such as urban image, economy, environment, public, and culture. For instance, media architecture acts as a bridge for urban image, connecting new and old city districts (B1-8). Media architecture can generate economic benefits (B6-4). Light pollution is a significant issue in media architecture projects, especially in modern cities where excessive screen usage may lead to visual discomfort and environmental impact (B1-15, B5-15). The design of media architecture must reflect and respect the local cultural background and social values because cultural sensitivity and inclusiveness are equally important (B4-10). Media architecture needs to balance effects with cultural presentation (B8-4).

Additionally, this round of research has brought considerable reflections on media architecture and media (AA11). Media architecture is more common during economic downturns as it can help promote and attract consumers (B2-6). Meanwhile, it also represents regional image promotion and is often heavily funded by the government during critical periods (B2-7). When a media architecture design becomes popular in one place, it is often copied elsewhere, leading to content homogenization (B1-18). Innovation in image properties should be emphasized to purely reduce promotional attributes (B2-17). Importantly, media architecture is understood as a type of architecture with media properties (B2-13). Unlike traditional architecture, it can convey information and culture through visual effects and dynamic displays. It is not limited to advertising but can also serve as a medium for nighttime activities and information dissemination (B5-27).

4.3.2.2 Axial Coding of Round B

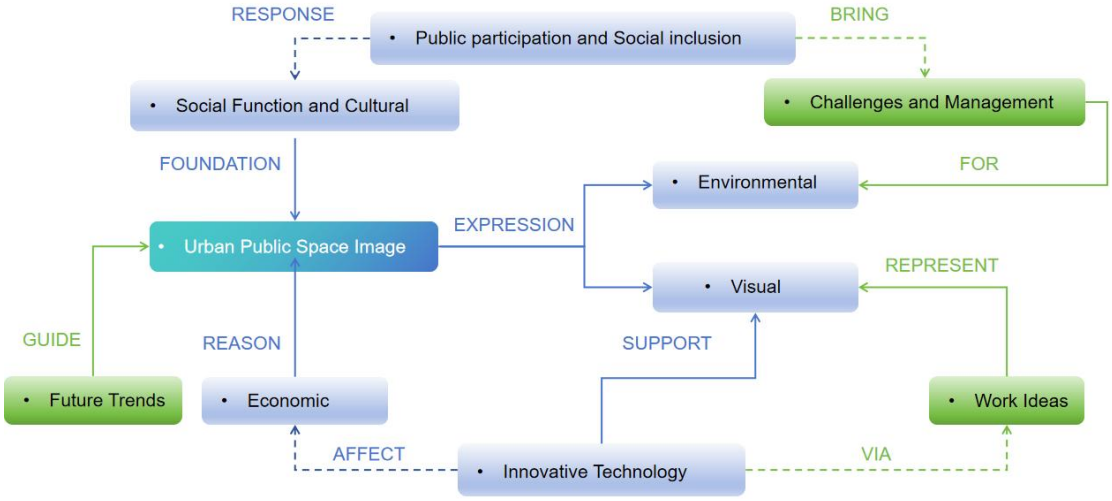


Figure 55. Axial Coding of Round A + B

Figure 55 shows the axial coding of round B. This round will continue to use urban public space images as the centre of the coding. A relationship is formed between the three new open codes mined in round B and the theoretical model constructed in the previous round. When constructing the relationship, it is argued that the challenges and management of the project bring about public participation and social inclusion, as well as impacts on the environment. The working idea is expressed as a visual element in the project, which is supported by innovative technologies. Therefore, future trends can guide the image of urban public space.

After going through the open coding in this round, one of the three clues from the previous round of axial coding was added and a new clue was added. The modified cue, How to design a better image of urban public space, was used as a pathway to conceptual understanding in one round by connecting AAA1, AAA3, and AAA5. In this round, AAA3 and AAA5 are connected to BBB2 and BBB1, respectively. In the previous discussion, the image of urban public space is expressed in two levels: environmental digital placemaking and visual imagery, and the theoretical components in this round further explain the system of the role of these two levels. Ambient digital placemaking encompasses technological, marketing, managerial, planning and cognitive aspects, and it is also subject to public opinion and participatory pathways of placemaking. The visual imagination is influenced by the combination of innovative technology and the overall visual elements of the environment, and the content is at the centre of the visual presentation of media architecture. These two levels of understanding further dissect the direction and path of understanding media architecture design.

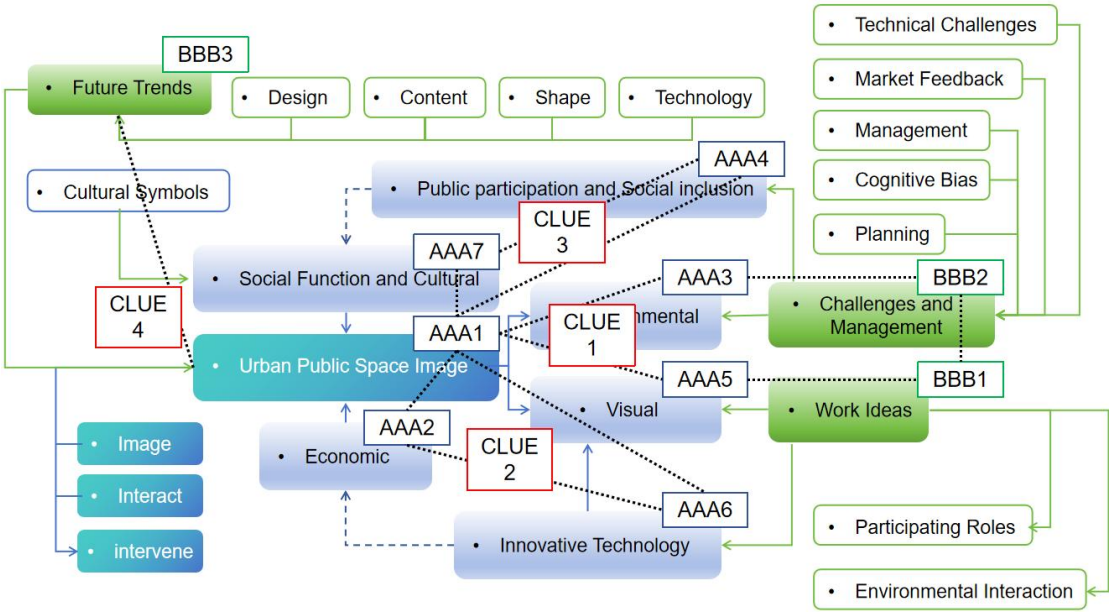


Figure 56. Establishing Relationships between Opening Coding for Round A + B

A fourth clue is also presented in this round of spindle coding, which is how the development trend of the image of urban public space is led by media architecture. This clue connects AAA1 and BBB3 to form the conceptual path. The future of urban public spaces needs to be understood at four levels: design, content, form, and technology. Moreover, special attention ought to be paid to the progression and morphological changes of AI on media architecture at these levels.

4.3.2.3 Selective Coding of Round B

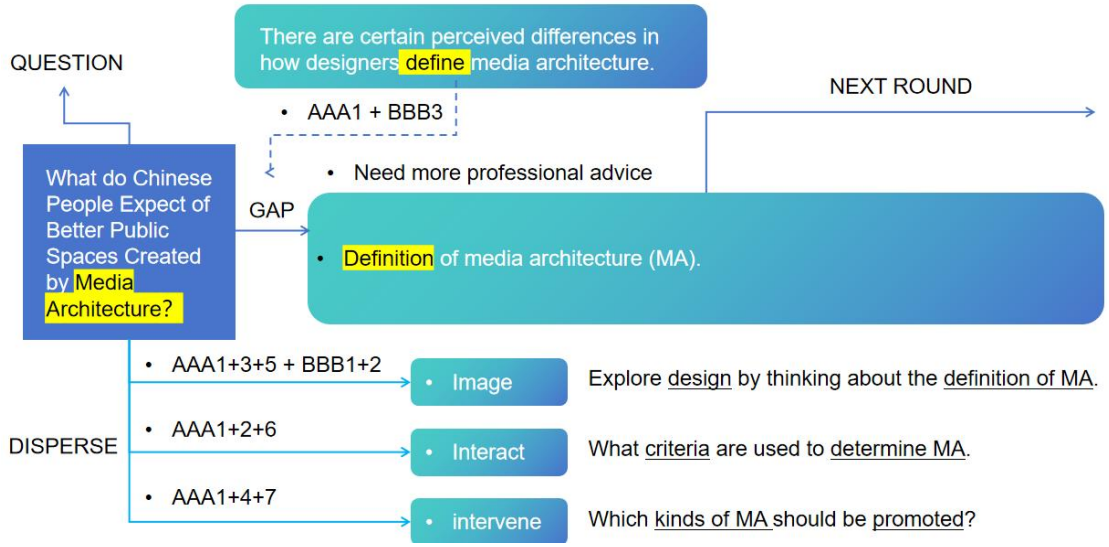


Figure 57. Reasons from Round B to Round C

In this round of research, the researchers thoroughly collected insights into the work approaches and challenge management in the design process of media architecture while also exploring future trends in the field. By employing axial coding to form threads, the study complemented the first

thread from Round A and added a new thread to the overall theoretical model, aiming to understand and discuss the future development trends of media architecture.

However, this round of research revealed that the interviewees had varying perceptions regarding the design, management, and conceptualization of media architecture. These differing views highlighted a cognitive bias among the participants. Consequently, the next round of research will focus on exploring the definition of media architecture and addressing the research questions from the following four perspectives:

- Defining Media Architecture: Investigating the distinctions between the design of media architecture and non-media architecture.
- Evaluating Interaction Logic and Quality: Assessing the interaction logic and quality of existing and future media architecture to determine if there are abstract standards.
- Exploring Theoretical Models: Investigating whether there are theoretical guiding models for media architecture.
- Definition/Non-Definition of Media Architecture: Examining the definition and non-definition of media architecture.

This structured approach aims to deepen the understanding of media architecture and address the cognitive biases observed, providing a comprehensive framework for future research and practice in this field.

4.3.2.4 Analytic Hierarchy Process of Round B

Table 16. Analytic Hierarchy Process for Round B

Number	B1	B2	B3	B4	B5	B6	B7	B8
City Image	7	7	4	5	5	6	5	6
Economic Impact	6	6	5	2	2	7	2	3
Social Functions and Cultural Exchange	6	5	2	7	7	6	1	5
Innovation and Technology Integration	3	2	6	3	3	6	4	4
Environmental impact and sustainability	4	5	1	4	4	5	3	2
Public participation and social inclusion	5	4	7	6	6	5	6	6
Visual Impact and Vitality	2	5	3	3	3	4	7	7

Although the first round of questionnaires was recognised in the design study as a process to help the interviewee construct a sense of media architecture, the researcher considered that the questionnaire interviews were inefficient. Therefore, in the current study, the questionnaire approach was changed to an analytic hierarchy process, whereby interviewees were asked to assess indicators from the meaning units in Round A.

Interviewees were asked to complete this analytic hierarchy process before completing the

semi-structured interviews described above. Interviewees in Round B were requested to rate the seven units of meaning in Round A on a scale of 1 to 7 (allowing for equal scores). This scoring system helps to aid in the assessment of the future of media architecture and the value judgement of the theoretical model. Table 16 presents the basic scoring information in Round B. Next, Round C interviewers were also required to conduct an analytic hierarchy process. More conclusions and details will be presented in the next subsection.

4.3.3 Round C: Theoretical Study for Professionals

Table 17. Basic Information of Interviewees in Round C

No	Age	Career - years	Gender	Highest Academic / Field	Professional Field
C1	57	32	Male	PHD in Architecture	Architecture, Lighting Design, Urban Design
C2	62	36	Male	MArch in Architecture	Architecture, Lighting Design, Media Design
C3	57	35	Female	MA in Art and Design	Lighting Design
C4	62	40	Male	BA in Art	Lighting Design, Media Design
C5	53	30	Female	BA in Design	Lighting Design, Media Design, Photographer
C6	40	15	Female	PHD in Design	Architecture

Round C focused on exploring the definition of media architecture and thinking about evaluation systems to continue to enrich the theoretical model. Therefore the interviewees for Round C were all recognised experts in the field of media architecture in China, a group that includes architects, lighting designers, university teachers, and government employees. The interviewees in Round C were named C1 to C6, and after this round, the theory was largely saturated. Therefore, the grounded theory was suspended (Table 17). The interviews in this round took place from 10 April to 15 May 2024. Their age ranged from 40 to 62 years, with an average of 55.17 years. Their working experience ranged from 15 36 years, with an average of 31.33 years, thus covering as much as possible the opinions of people of different ages as well as different Professional Fields.

4.3.3.1 Open Coding of Round B

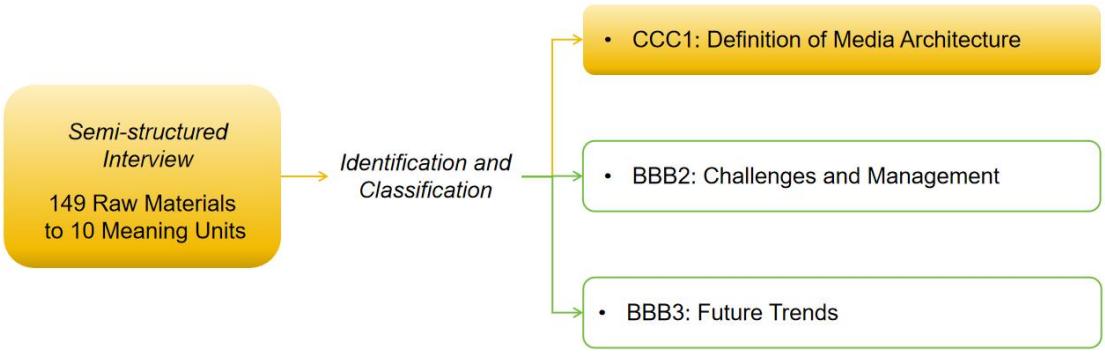


Figure 58. Opening Coding of Round C

The current round of the study was the final round of this grounded theory coding. In Round C,

semi-structured interviews were conducted with six participants, designated as C1 to C6. After recording and clarifying the data, 149 raw data were obtained and further classified into 10 meaning units, designated as CC1 to CC10 (Table 17). Of these units, eight were newly surfaced meaning units, and the remaining two were included in the previous round of open coding in Round B. The remaining two were included in the previous round of open coding. These meaning units were further analysed and attributed over the CCC1 open coding.

Table 18. Coding Process for Round C

Raw Material	**Meaning Units**	**Open Coding (Round C)**
C1-1, C1-3, C1-4, C1-5, C1-8, C1-10, C1-12, C1-32, C1-39, C1-40, C2-1, C2-2, C2-3, C2-21, C2-22, C2-23, C2-32, C2-33, C3-1, C4-1, C5-1, C6-1, C6-2	CC1: Definition	CCC1: Definition of Media Architecture
C1-33, C1-34, C1-53, C1-54, C1-55, C2-15, C2-16, C2-17, C3-9, C4-4, C5-4, C5-14, C5-15, C5-17, C6-9, C6-12, C6-13, C6-14, C6-15, C6-18	CC2: Propagation	
C1-2, C1-9, C1-51, C1-52, C1-53, C2-26, C2-27, C2-29, C2-31, C3-12, C4-7, C4-8, C4-9, C5-8, C5-9	CC3: Comparison	
C1-41, C1-42, C6-7, C6-8	CC4: Type	
C1-13, C1-14, C1-16, C1-17, C1-18, C2-24, C2-28, C3-3, C3-7, C3-8, C5-13, C5-16, C5-18, C6-16, C6-19, C6-20	CC5: Reflections	
C1-17, C1-19, C1-21, C1-22, C1-23, C1-24, C1-26, C1-29, C1-37, C2-9, C2-10	CC6: Attitude	
C1-6, C1-7, C1-11, C1-20, C1-25, C1-27, C1-28, C1-30, C1-31, C1-35, C1-43, C1-44, C1-45, C1-46, C2-4, C2-5, C2-6, C2-7, C2-8, C2-11, C2-12, C2-20, C2-25, C3-2, C3-11, C4-2, C4-3, C4-6, C5-2, C5-3, C5-10, C5-11, C5-12, C5-19, C6-3, C6-17	CC7: Reason	
C1-15, C1-47, C2-13, C2-14, C2-18, C2-19, C2-30, C3-6, C3-10, C4-5	CC8: Judgement	
C3-5, C5-7, C6-6	CC9: Management	BBB2: Challenges and Management
C5-5, C5-6, C5-20	CC10: Future	BBB3: Future Trends

In this interview, the definition of media architecture was primarily explored to emphasize the participants' professional insights and deep understanding (CCC1). The interviewees generally acknowledged the communicative properties of media architecture (Table 18). During the discussions, the dichotomy between media and non-media architecture was examined, with evaluations made from perspectives such as type and attitude. The research highlighted a shared reflection between the interviewer and the interviewees, investigating the reasons behind the emergence of media architecture, value judgments, management, and future trends.

Media architecture is an innovative form that integrates architectural design, advanced media technology, and interactive experiences, reshaping how people perceive and interact with architectural spaces and urban environments (CC1). This concept did not originate in China (C1-1) but has evolved through related research (C1-5). Initially, it merely described a phenomenon (C1-4), but it was later applied in public art projects (C1-8) and further explored by architects as a method of architectural practice (C1-10). Specifically, media architecture is not only an extension of traditional architecture but also an interactive platform that integrates architecture, technology, and art (C3-1). It enhances public engagement and experience through dynamic visual effects and interactive elements (C1-39, C4-1). Media architecture transcends the proportional and regulatory limitations of traditional architecture (C1-40), utilizing advanced digital technologies and media content to engage directly with the public (C1-39). This form of architecture can convey information and serve as a window showcasing the cultural and technological prowess of a city (C2-1, C2-2, C2-3). Despite some challenges and ambiguities in definition and aesthetics (C2-21, C2-22, C2-23), media architecture continues to evolve, progressively establishing its own novel dimensions and modes of expression (C2-32, C2-33). Essentially, media architecture is not merely a supplement to traditional architecture; rather, it redefines the role and value of architecture in modern society through digital and media means (C2-1, C2-2). It caters not only to the requirements of the architectural sphere but also to the more extensive necessities of media and information dissemination (C2-3).

> *C2-33: This concept (Media Architecture) creates a continuum, a linearity, and I think a grey area between what is good and what is bad is something that I think is very important when we think about it"* quot (transl.) an interviewee in Wuhan in 2024.

The dichotomy between media architecture and non-media architecture primarily hinges on sensory impact, narrative expression, and communicative behavior (CC3). Compared to traditional architecture, media architecture offers a more sensory-rich experience through dynamic lighting, screens, and interactive technologies, making spatial perception more multidimensional and dynamic (C4-7). Media architecture is not merely an augmentation of buildings; it retains the fundamental functions of architecture (C2-26), but its essence changes when media elements are added, creating a gray area that exists between structure and media (C2-29). It essentially adds a functional layer to the architectural entity without altering the core structure (C2-31). Media architecture interacts with people, conveys the city's image, and endows buildings with new meanings and functions (C1-9). This form of architecture has generated its new dimensions, which may not fit within the original parameters of traditional architectural or urban theory (C1-52, C1-53). By narrating stories through changing visual content, media architecture enhances the dynamism and diversity of storytelling (C4-8) and facilitates rapid dissemination and updating of information, making it suitable for advertising and cultural displays, whereas traditional architecture has relatively static and limited information propagation (C4-9). Media architecture represents a shift from passive information reception to active information acquisition (C5-9). In this transition, media architecture tends to attract more attention, though it might lead people to focus solely on spatial narrative and structural perception, particularly influencing the experience at night (C2-27).

> *C1-9: Such an image becomes very vivid, it can interact with you, and it can even transmit some images, and it can show some faces of the city. So it gives the architecture some new connotation and new function not like the past kind of point, line, surface composition such a simple way"* quot (transl.) an interviewee in Beijing in 2024.

Media architecture is an architectural phenomenon that transcends the single narrative of the architectural entity itself, resulting from the evolution of urban and public discourse media (CC2). It generates new dimensions in various aspects and dimensions that may not align with traditional architectural or urban theoretical frameworks (C1-53). When evaluating media architecture, it is crucial to consider new lifestyles and values (C1-54). Echoing McLuhan's perspective, the function of architecture is an extension of media, where new media do not obscure the existing ones (C1-55). A purely screen-oriented approach might not enhance the communicative perception of architecture (C6-9). The functions of media architecture differ from those of traditional architecture, incorporating information integration or forming richer spatial expressions (C6-12). If media architecture merely owns a screen, it remains too simplistic and diminishes its contribution to the building itself (C6-13). Therefore, media architecture acts more like a declaration and advocacy and can convey the intended content more accurately than traditional architecture (C6-18).

> *C6-18: I personally think that media architecture may be more like a declaration and advocacy, and it may have its own position. Compared with traditional architecture, it can be read from the form, or in the spatial perception, it can come up with a new kind of content that the architect or the client needs to convey, and he may be able to convey it more accurately"* quot (transl.) an interviewee in Guangzhou in 2024.

In the context of media architecture communication, three primary dilemmas are encountered. The first dilemma is the inevitable phenomenon of over-entertainment as architecture transitions from physical to virtual perception (C1-53). This detachment from the physical entity leads to an unavoidable entertainment dilemma before architecture becomes fully mediated (C5-17). The second dilemma involves scrutinizing the measurement of urban publicness in the face of urban complexity and contradictions (C1-33). The third dilemma is the disjunction between the narrative logic of media architecture and the users' experiences (C6-15). These three dilemmas represent the threats of entertainment, considerations of publicness, and the anchoring of accuracy in disseminating media architecture.

It is essential to carry out a comprehensive categorization of media architecture to address the aforementioned dilemmas in media architecture, aiming to resolve issues through an understanding of different types (CC4). Media architecture is not a gradual change or improvement of traditional architecture (C1-42). Traditional architects do not view media architecture as a new architectural type; they see it as a distortion and degradation of architecture (C1-41). The transformation of architecture into media, or media into architecture, influences whether our study focuses on architecture or media (C6-8).

Within this framework, media architecture can be classified into two types: one where the

architecture itself is adorned with media decorations, and the other where the building expresses information, making the architecture a medium of communication (C6-7). Given that media architecture is still in the early stages of research and design management, the classification methods are not yet mature. Thus, it is hoped that through categorization, future challenges in media architecture can be alleviated.

When examining the specific applications of media architecture, it is clear that its adoption and rapid development in China have been driven by technological advancements, government support, public enthusiasm for vibrant activities, and a focus on urban image and soft power (CC7). Media architecture is widely employed in China to enhance urban landscapes, create iconic landmarks, and promote tourism (C1-6). This trend is closely associated with the rapid expansion of cultural tourism projects and government initiatives (C1-7). Furthermore, the advancement of LED and smart control technologies has significantly transformed media architecture, making it more complex and dynamic (C1-11). These innovations enable building facades to dynamically display images and information, thereby broadening the functional and conceptual boundaries of architecture (C1-3). Media architecture promotes public engagement through dynamic displays and interactive technologies, making urban spaces more vibrant and appealing (C5-2). This interaction not only fosters social inclusivity in cities but also strengthens citizens' sense of belonging and urban pride (C1-35). Additionally, media architecture plays a pivotal role in the night-time economy. By attracting foot traffic and supporting night-time activities, it contributes to regional economic development (C1-20). The Chinese public's affinity for lively public events finds a new platform in media architecture, facilitating the growth of such activities (C5-3).
Regarding attitudes toward media architecture, the interviewees proposed drawing on phenomenology, thereby positioning media architecture in a state of suspension and awaiting further deliberation. (CC6). Some researchers proposed a broader concept called "media landscape", which aims to address and encompass the ambiguous attitudes within media architecture through this overarching media concept (C1-22). This concept also highlights the advantages of opposing the singular elite narrative of architects in understanding media architecture (C1-37). The suspension of media architecture in its application process provides governments, owners, and users with more opportunities to understand and experience media architecture (C2-10).

In the application process, extensive reflection on media architecture emerged as a significant outcome of this interview. Such reflections can be summarized as a reversion to the traditional values of architecture, a regression to the architectural essence, and a restoration of the subjective agency of individuals in choosing information (CC5). The emergence of media architecture is not a disruption of traditional architectural values; rather, it represents a return to and amplification of these values. For example, in China, the initial design intent of media architecture was to activate the social functions of buildings and the vibrancy of public spaces through the integration of lighting and media (C1-13, C1-14). The primary purpose of architecture is to accommodate human behavior and activities. Media architecture reactivates these behaviors and activities through dynamic forms, allowing people to engage and interact more deeply (C1-13, C1-14). At night, media architecture serves as a medium carrier, while the building itself becomes a backdrop. This phenomenon highlights the building's different roles at different times of the day, but its

essence remains unchanged. During the day, it remains an architectural structure, whereas at night, it transforms into a platform for media display (C1-16, C1-17, C1-18). This demonstrates that regardless of the technological elements added, the building's core essence and basic functions remain unchanged; media merely adds an additional layer of functionality (C2-24, C2-28).

A core characteristic of media architecture is its interactivity, which enhances individuals' agency in information selection. For example, in Times Square, people can upload their own images to participate in public displays, significantly stimulating public engagement and interactivity (C3-3). Media architecture, through dynamic effects and interactive design, transforms people's perception from passive reception of information to active selection and participation in information dissemination (C3-7, C3-8). This return to subjective agency not only alters the way people perceive information but also drives the design and development of media architecture (C5-13, C5-16, C5-18).

In the context of evolving the definition of media architecture, which transcend yet ultimately return to the essence of architecture by relying on sensory experiences, we must consider what to expect for the future of suspended media architecture. The interviews in this round continue to explore from the following three perspectives design for future trends, evaluation standards, and management.

Media architecture may become a window into virtual architecture in the future, bridging the real and virtual worlds (CC10). On one hand, future media architecture might further transcend its physical limitations, focusing on media, communication, and information to meet people's cognitive and interactive needs (C5-20). On the other hand, future media architecture will truly integrate into daily life, connecting real life and real people, and through interactivity, it will return to the embodied cognition of place (C6-20).

The management of media architecture should carefully consider the needs of stakeholders and organise its operation through multi-party consultation (CC9). The operation of media architecture often presents business challenges (C6-6), requiring operators and managers to strike a balance between profit-making and non-profit-making aspects, while also encouraging the production of high-quality content (C3-5). This balance can be achieved by rigorously selecting commercial advertising content and incorporating artistic creations. Promoting the mutual enhancement of commercial and artistic content can elevate the quality of media output, thereby improving overall management and operation. Consequently, this balance can enhance the city's media image through the effective use of media architecture.

> *C3-5: It's to the media architecture, I think it's the operators and managers who should have such a realisation. What I mean is that we can't just pay for it, we need to have a certain amount of income, which is balanced between the profitable and unprofitable parts, so as to encourage more quality content to be produced, so that it will be different in terms of the hierarchy"* quot (transl.) an interviewee in Guangzhou in 2024.

Regarding the evaluation of media architecture, most interviewees still consider it premature to

form a conclusive judgment (CC8). At present, it is not feasible to use a single standard to evaluate media architecture comprehensively (C1-47). Evaluations can only be conducted more effectively from the perspectives of outcomes and purpose-oriented criteria (C1-15). Alternatively, assessments can be made based on aesthetic standards, focusing on the integration with the main architecture and the aesthetic impact and expression on the primary structure (C2-19). The reason for this situation is the delay in establishing an evaluation system. For instance, classical painting academies have their own particular set of evaluation criteria. However, with the advent of the Cubist painter Picasso, the aesthetic standards and evaluation systems of these two schools were entirely different. Similarly, within the realm of architecture, the emergence of different styles or movements introduces varying aesthetic evaluation standards. This example illustrates that media architecture might introduce new aesthetic standards that differ significantly from the traditional evaluation criteria in architecture (C2-18).

In this interview, the definition, function, and future development direction of media architecture were thoroughly discussed. Media architecture, as an innovative form that integrates architectural design, advanced media technology, and interactive experiences, is transforming people's perception and interaction with architectural spaces and urban environments. Although this concept did not originate in China, it has rapidly developed there due to technological advancements, government support, and the public's enthusiasm for lively activities. The interviewees generally acknowledged the significant role of media architecture in disseminating information, enhancing public engagement, and showcasing urban culture. However, they also identified several challenges, such as definitional and aesthetic ambiguities, resistance from traditional architects, and difficulties in management and operation. Additionally, media architecture faces dilemmas related to entertainment, public engagement, and narrative logic. Looking ahead, media architecture is expected to transcend its physical limitations and further integrate into daily life. The overall media image of cities can be enhanced by balancing commercial and artistic content through multi-party consultation. However, it remains premature to make definitive judgments about media architecture, necessitating evaluations that are more outcome and purpose-oriented.

4.3.3.2 Axial Coding of Round C

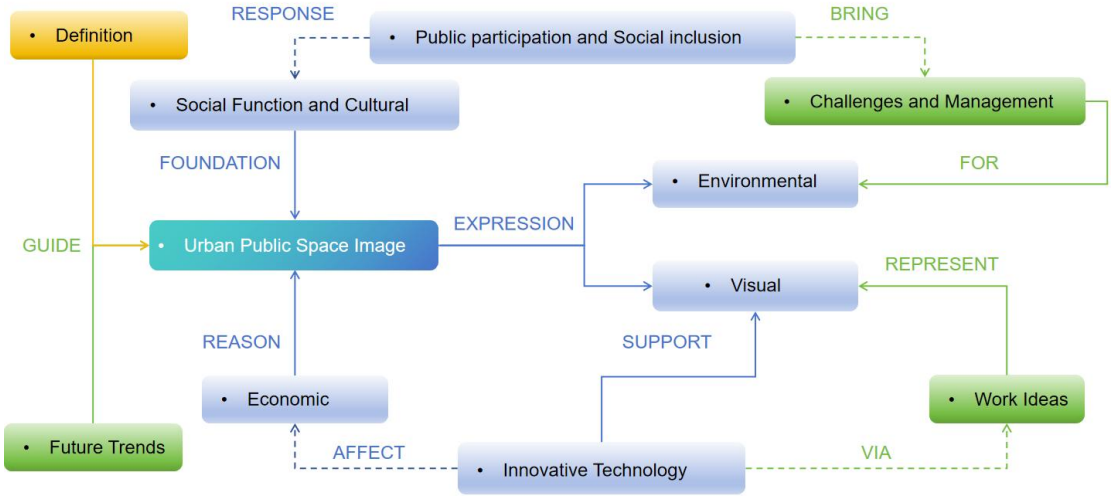


Figure 59. Axial Coding of Round A + B + C

Figure 59 shows the axial coding of round c. This round will continue to follow the deconstruction of the previous sequence, using images of urban public space as the centre of the coding. The newly excavated open coding in this round will influence and guide media architecture in urban public spaces along with future trends. The excavation and discussion of the definition of media architecture brings system, function and future development for the guidance of urban public space, and generates more actionable means from the types and contrasts.

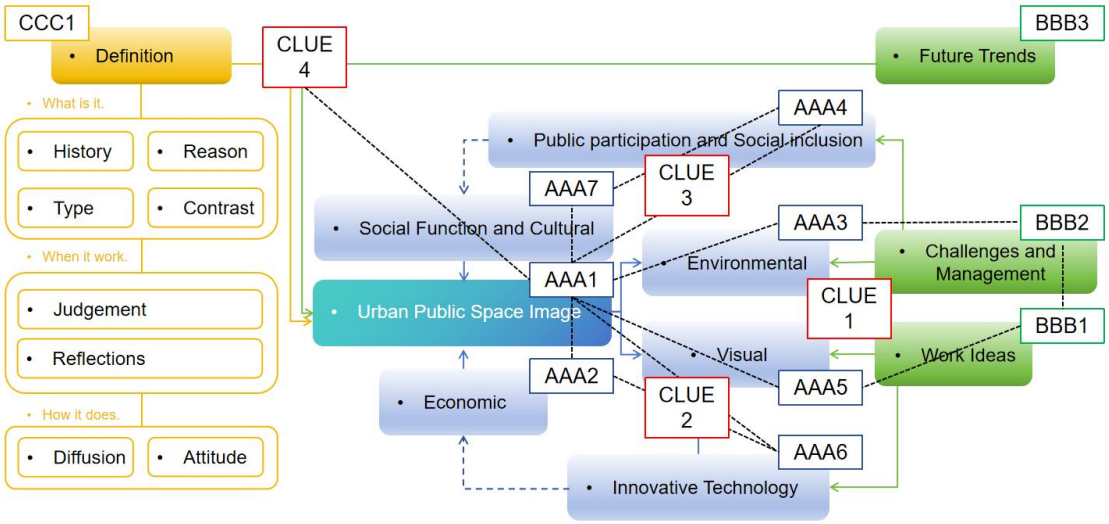


Figure 60. Establishing Relationships between Opening Coding for Round A + B + C

By connecting the latest surfaced codes CCC1 to clue 4, this grounded theory model is largely saturated and surfaces a total of four theory clue models.

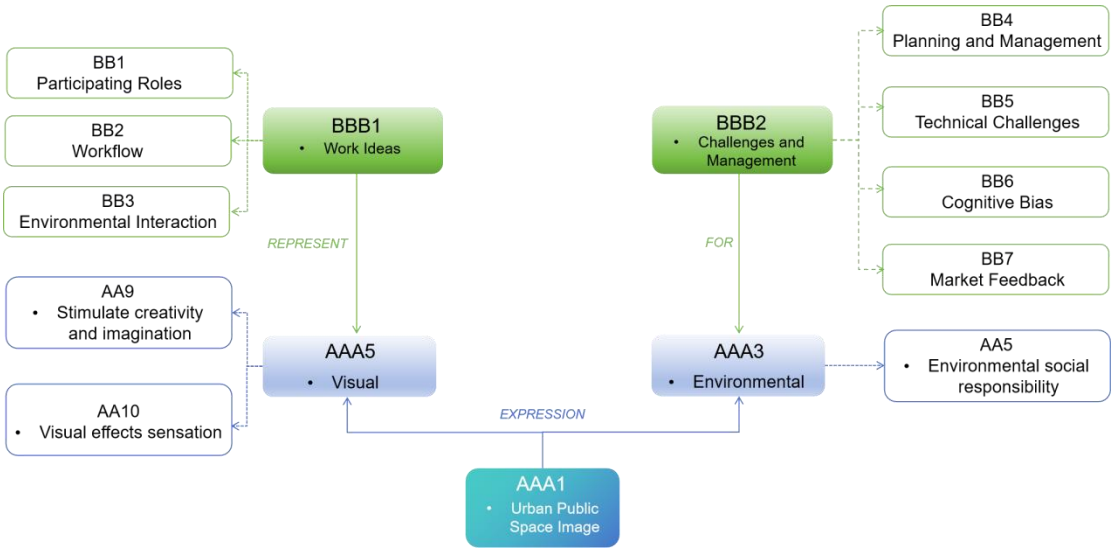


Figure 61. Mindmap of the First Clue

The first clue, connected by AAA1, AAA3, AAA5, BBB1, and BBB2, explores how to carry out better use of media architecture to design the image of urban public space. Under the influence of media architecture, the image of urban public space (AAA1) can be expressed as the creation of digital environmental space (AAA3) and spatial visual imagery (AAA5), and is influenced by the management of the challenges of media architecture (BBB2) and the designers' work thinking (BBB1).

Planning and participation are two important factors in the digital environment placemaking level (AAA3), and when discussing the challenges and management of media architecture (BBB2), the participants pointed out the many challenges that media architecture faces in their work, including planning and management issues, technical difficulties, cognitive bias, and market feedback. By reflecting and digging into the above issues, the study concluded that at the planning level of the digital environment placemaking level, clear plans and regulations should be set for the design of media architecture and their surroundings, with a focus on coordinating the design style of media architecture with the overall urban design, and to achieve flexibility in the application of technology. At the participatory level, it is necessary to design public participation and feedback mechanisms, pursue multi-party cooperation, and do a good job in education and publicity at the level of digital placemaking.

In Spatial Visual Imagery (AAA5) the emphasis is on visual impact and visual imagery. These elements are reflected in the consideration of job roles, processes and environments in the work concept (BBB1). Visual impact is a key element in the design of media architecture, which aims to attract the attention of the audience through strong visual effects and leave a deep impression. The visual impact should be achieved by utilising a variety of design methods, focusing on content design, and aiming for a combination of technology and art.

Visual imagination refers to stimulating the audience's creative thinking and future vision through media architecture. The design should incorporate cutting-edge technological elements and

futuristic art styles to allow the audience to see the possibilities of the future city through visual experience. With the advancement of technology and media design methods, the role of the designer has changed, which means that the designer should not only consider the current visual effect but also look into the future development trend and propose forward-looking design solutions. In addition, the intervention of the body in the design of some media architecture can be emphasised so that the audience can be immersed through an immersive media experience, thus stimulating their imagination of future scenarios. Therefore, it creates a visual space that can guide the audience's imagination through the organic integration of design and environment.

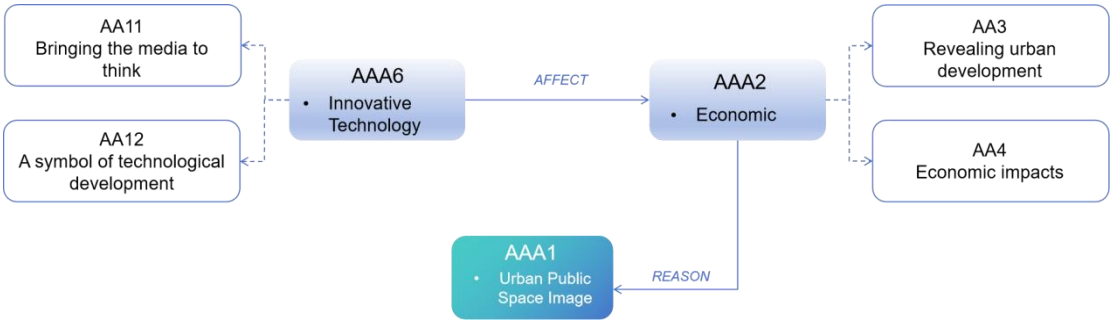


Figure 62. Mindmap of the Second Clue

The second clue, which consists of AAA1, AAA2, and AAA6 and is indirectly influenced by BBB1, explores how the quality of urban public spaces can be better assessed through media architecture. The study proposes to assess the interactive quality of media architecture from both economic and innovative perspectives, with the economic dimension assessing the quality of media architecture in terms of return and attraction, and the innovative dimension assessing the quality of media architecture by evaluating interactivity and technological transformations as evaluation criteria.

From an economic perspective (AAA2), media architecture is a product of the combination of technological development and architectural design, fully reflecting the progress of the digital economy and the digital age. Its impact on the real economy is highly anticipated. Media architecture drives economic growth by attracting people out of their homes to physical spaces for viewing, entertainment and consumption. Despite their high construction and operational costs, the economic returns generated are considered to be worth the investment. The media architecture of the future should enhance its attractiveness and utility through real-time interaction, integration of digital media, display of cultural symbols, and innovative design to comply with modernisation trends. From an innovation perspective (AAA6), media architecture needs to be assessed not only for their interactivity but also for their performance in technological transformation. Real-time interactivity of media architecture is considered an area in need of improvement. The media architecture of the future should take on more creative functions in the city and become centres of digital placemaking. However, current media architecture is disconnected in its integration with traditional urban forms, and even retrofitted media architecture faces similar problems. Therefore, enhancing interactivity and promoting technological transformation is key to improving the assessment of future media architecture.

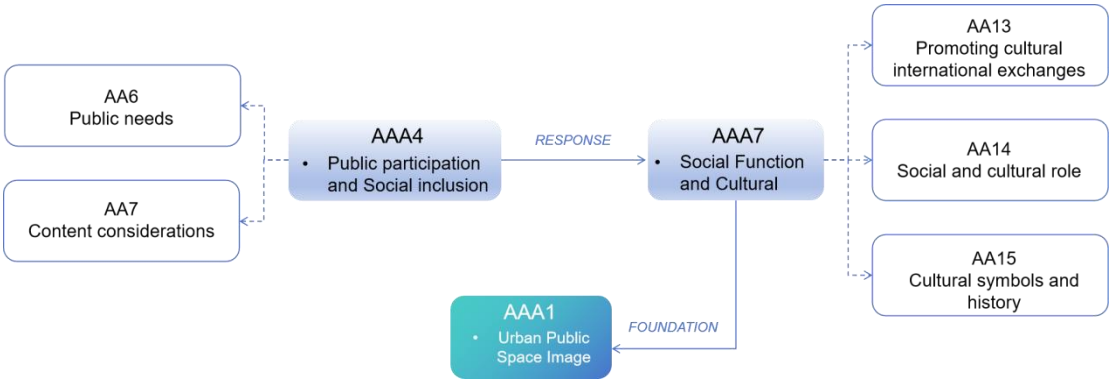


Figure 63. Mindmap of the Third Clue

The third clue consists of AAA1, AAA4, and AAA7 connected and indirectly influenced by BBB2 to explore how the process of media architecture intervention should be guided. The study suggests that to better guide media architecture in urban public spaces, it is necessary to do so at both the public and cultural levels. The public dimension needs to address the issues of demand, language and digital divide, while the cultural dimension needs to be guided from three perspectives: temporal, spatial and material.

From the public's perspective (AAA4), understanding what the public wants from a media architecture is key. Extensive public surveys and consultations have to be conducted to determine how they want media architecture to serve them. In addition to this, the content of the media architecture must create a common language between different groups to ensure that users can receive the content of the media architecture. Secondly, the differences in the use of digital technology by the public of different age levels and social classes must be considered. Looking at the cultural aspect of media architecture guidance (AAA7), media architecture for different purposes should be guided by three perspectives: historical exchange, international exchange and the materiality of culture. Time-themed media architecture reflects and respects the city's history and cultural symbols. Historical stories and place culture are integrated into the design and content creation so that the public can feel the continuation of history and the inheritance of place culture in the interaction. Space-themed media architecture can serve as a platform for international cultural exchange, showcasing and disseminating the cultural characteristics of different countries and regions. Through cross-cultural interaction and display, it promotes international understanding and cooperation. A media architecture with material as its theme should fulfil its socio-cultural role and become a platform for public discussion and exchange. It can be used to promote social welfare, cultural activities, and community interactions, and enhance the public's sense of social participation and community belonging.

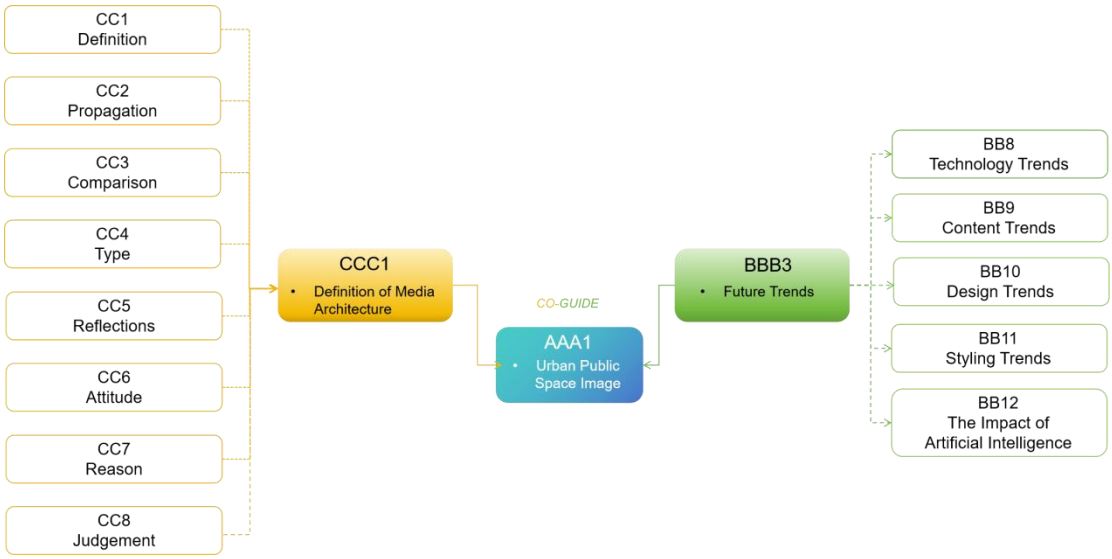


Figure 64. Mindmap of the Fourth Clue

The fourth clue is connected by AAA1, BBB3, and CCC1, where trends and definitions of media architecture come together to form the epistemology of media architecture. The fourth clue is the epistemology of the three preceding clues and serves as an epistemological aid to the design, evaluation, and guidance of the first three clues.

4.3.3.3 Selective Coding of Round C

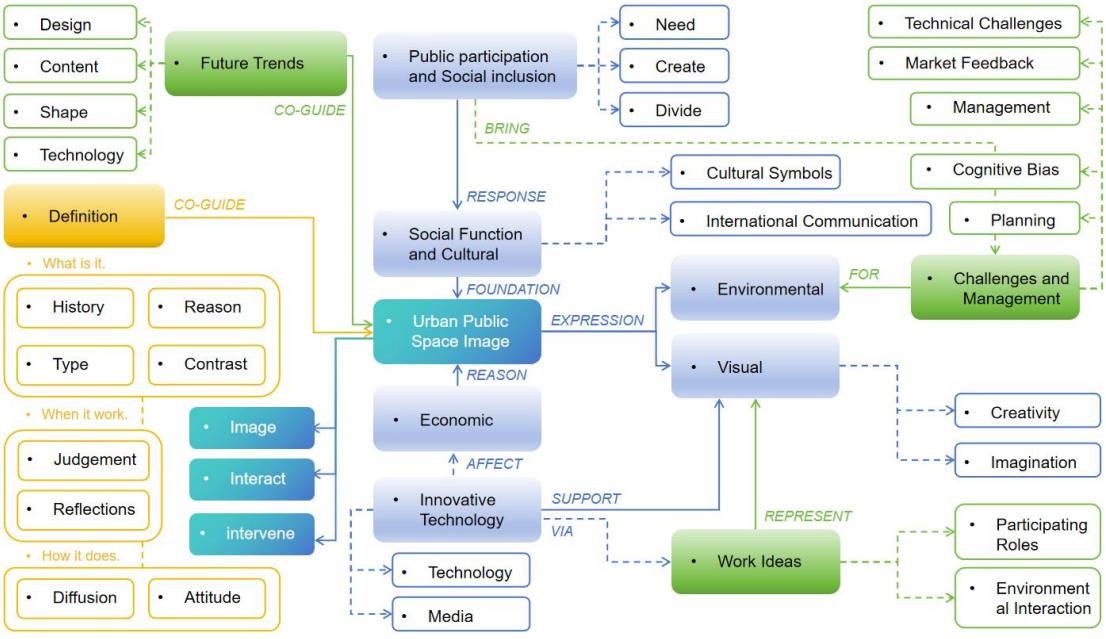


Figure 65. Overall Structure of the Interviews for this Research

The interviews were conducted through three rounds of research, in-depth semi-structured interviews with experiencers, designers, and managers in urban public spaces in China, and coded through grounded theoretical methodologies, essentially anchoring the coding and meaning units

of Chinese expectations for future media architecture. By organising and structuring the coding, the research questions are responded to through an exploration of the design, evaluation and guidance of future media architecture in Chinese cities. Figure 64 shows how the codes obtained from the interviews were organised based on the image of urban public spaces as the core code, and the logical relationship between its expression, relationship and cause.

In the next step of the research, the saturation of the grounded theory and the plausibility of the sampling results will be tested to pave the way for subsequent comparisons of theoretical studies and triangulation between different research methods.

4.3.3.4 Sampling and Saturation Arguments

The sampling rigour of this study is reflected in the structure of the three rounds of interviews (Figure 65). Grounded theory typically uses theoretical sampling, which is targeted at discovering and developing theory. Moreover, the sampling process is continually adjusted and refined throughout the cyclical process of data collection and analysis (Breckenridge & Jones, 2009). Nonetheless, cluster sampling can be employed in certain situations, particularly where initial categorisation of large, heterogeneous samples is required. Cluster sampling aims to explore the characteristics of the group among the interviewees (Simkus, 2022), and this interview was explicitly selected when the interviewees were called, so the research framework from the whole basically followstudy's ed the characteristics of cluster sampling. Purpose sampling in grounded theory refers to the purposeful selection of information-rich cases or samples for data collection in the early stages of a study, based on the research questions and theoretical framework (Cutcliffe, 2000). The means of reflecting purposive sampling in this study was through making adjustments to the questionnaire questions and format at each round of the study's iteration of the research process to achieve the most critical information for each category of the population interviewed.

Figure 66.Overall Logic of Sampling

Validating saturation in grounded theory is a crucial step to determine whether sufficient data has been collected to support the research conclusions (Aldiabat & Le Navenec, 2018). Saturation

means that new data no longer introduces new concepts or theoretical properties (Braun & Clarke, 2021). The following discussion will approach this research from conceptual, category, and theoretical saturation perspectives.

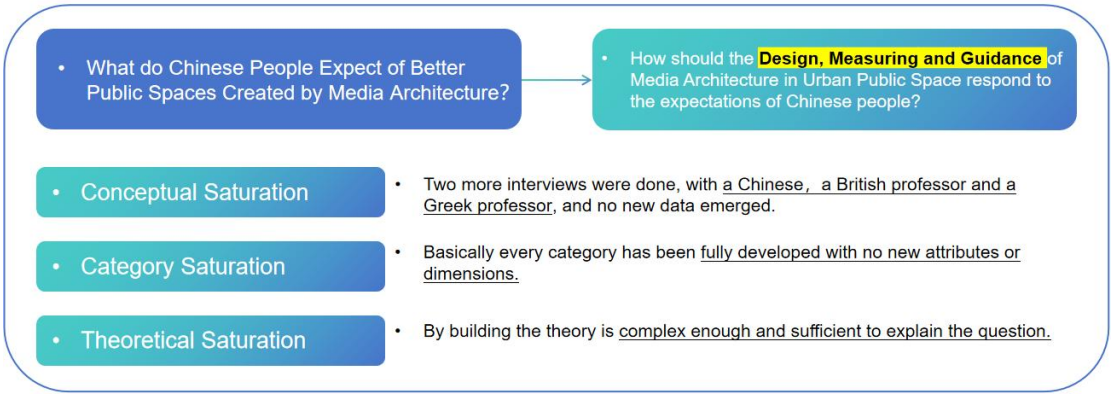


Figure 67.List of Tests of Saturation

Figure 67 presents the three ways in which saturation was examined in this study, which was considered to be essentially complete after completing three rounds of interviews with A1-A8, B1-B8, and C1-C6 to dissect and interpret the research questions in this study.

Conceptual saturation assumes that concepts should be drawn from a rich network of data, possess complex connections and nuances, resonate with existing literature, and withstand external validity tests (Nelson, 2017, p. 559). In this study, almost 40 units of meaning were extracted from the data to illustrate concepts around media architecture in Chinese cities, all of which are related to the thematic network of the data and exist in a logical exercise. Researchers can constructively articulate the media architecture in Chinese urban public space that needs to be studied based on these concepts and compare them with existing research in the field of media architecture. In addition, three more interviews were carried out, including a Chinese, a British professor, and a Greek professor, and no new data emerged. Therefore, the conceptual saturation of this grounded theory could be basically determined. Finally, three tables showing the conceptual saturation of the three rounds of research were created with the help of a saturation detection form proposed by Constantinou to assess qualitative research (Constantinou et al., 2017).

The three tables (Tables 19 to 21) illustrate the patterns of emerging meaning units across the three interview rounds, reaching conceptual saturation. In Round A interviews, the meaning units and raw materials identified from A1 to A8 gradually decreased, with the conceptual codes becoming fully covered by A4. From A5 to A8, no new conceptual units emerged. In Round B, conceptual units were fully covered from B1 onward. Although 49 raw materials appeared in the B5 interview, they were all encompassed within previously established concepts. Round C achieved complete coverage after the C5 interview, with no new concepts emerging. The three rounds of interviews exhibited a sequential relationship with overlapping meaning units, achieving a state of conceptual saturation.

Table 19. Conceptual Saturation Table of Round A

Interviewee of Round A	A1	A2	A3	A4	A5	A6	A7	A8
Meaning Units	10	9	6	6	6	8	6	6
Raw Material	18	15	10	9	10	17	13	11
Number of Common Concepts with the Former		6	3	2	4	2	3	3
Number of Emerging Concepts		3	1	1	0	0	0	0
Total Concepts Emerged	10	13	14	15	15	15	15	15
Coverage of Concept Number*	66.67 %	86.67 %	93.33 %	100 %	100 %	100 %	100 %	100 %

*Coverage of Concept Number=(Total Concepts Emerged for Each Interviewee / Final Total Concepts Emerged)×100%

Table 20. Conceptual Saturation Table of Round B

Interviewee of Round B	B1	B2	B3	B4	B5	B6	B7	B8
Meaning Units	12	8	9	6	9	5	9	8
Raw Material	31	18	18	15	49	17	17	15
Number of Common Concepts with the Former		8	6	3	4	5	3	7
Number of Emerging Concepts		0	0	0	0	0	0	0
Total Concepts Emerged	12	12	12	12	12	12	12	12
Coverage of Concept Number*	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

Table 21. Conceptual Saturation Table of Round C

Interviewee of Round C	C1	C2	C3	C4	C5	C6
Meaning Units	8	7	7	5	7	6
Raw Material	58	35	29	13	33	21
Number of Common Concepts with the Former		7	6	5	4	5
Number of Emerging Concepts		0	1	0	1	0
Total Concepts Emerged	8	8	9	9	10	10
Coverage of Concept Number*	80%	80%	90%	90%	100%	100%

Category saturation affects how many sample sizes the study should be stopped. Some researchers have argued that in addition to the surfacing of new concepts (Hennink et al., 2017), the issue of categories in specific studies should be considered (Francis et al., 2010). In the current study, saturation of categories encompasses the definition of the concepts from the interviewee and the definition of the proposed concepts. Basically, every category has been fully developed with no new attributes or dimensions. Experiencers, designers, and administrators of media architecture in China's urban public spaces were included in this research sample.

Tables 22 to 24 present saturation assessments of coding categories across the three rounds of interviews. In Round A, nearly all types of meaning units were gathered after the first four interviews (A1 to A4). Meaning units that did not emerge initially, such as AA2, AA8, and AA12, were later substantiated in interviews A6, A7, and A8, indicating that the coding categories in

Round A approached saturation. In Rounds B and C, the initial interviews established a stable set of meaning unit types. Although new meaning units appeared in Round C (CC9 and CC10), they were still classifiable within the coding established in Round B.

Table 22. Coding Saturation Detection of Round A

Coding	Meaning Units	A1	A2	A3	A4	A5	A6	A7	A8
AAA1	AA1	√		√		√		√	√
	AA2			√			√		
AAA2	AA3	√	√				√		
	AA4	√		√	√	√		√	
AAA3	AA5		√				√		√
AAA4	AA6	√	√	√			√	√	√
	AA7	√			√	√	√		
	AA8				√				√
AAA5	AA9	√	√		√	√			
	AA10	√	√				√	√	
AAA6	AA11	√			√	√	√	√	√
	AA12		√				√		
AAA7	AA13	√	√			√		√	
	AA14	√	√	√	√				
	AA15		√	√					√

Table 23. Coding Saturation Detection of Round B

Coding	Meaning Units	B1	B2	B3	B4	B5	B6	B7	B8
BBB1	BB1	√	√	√		√		√	√
	BB2	√	√	√	√			√	√
	BB3	√	√		√			√	√
BBB2	BB4	√	√	√	√	√	√		√
	BB5	√	√	√		√	√	√	√
	BB6	√		√		√	√	√	
	BB7	√		√		√	√	√	√
BBB3	BB8	√		√	√	√		√	
	BB9	√	√	√		√		√	√
	BB10	√	√	√	√	√	√		√
	BB11	√			√	√			
	BB12	√	√					√	

Table 24. Coding Saturation Detection of Round C

Coding	Meaning Units	C1	C2	C3	C4	C5	C6
CCC1	CC1	√	√	√	√	√	√
	CC2	√	√	√	√	√	√
	CC3	√	√	√	√	√	
	CC4	√					√
	CC5	√	√	√		√	√
	CC6	√	√				
	CC7	√	√	√	√	√	√
	CC8	√	√	√	√		
BBB2	CC9			√		√	√
BBB3	CC10					√	

Theoretical saturation means that researchers have done a comprehensive examination of the phenomena being studied and have actualized the depth and breadth of social theory to achieve thorough descriptions, explanations, and interpretations of their research (Faulkner & Trotter, 2017, p.2). Although some researchers have criticised Glaser and Strauss' grounded theory methodology for the concept of data saturation as being overly vague, there is no directional difference in the criteria for saturation of grounded theory (Low, 2019). The determination that saturation has been reached often occurs when the research design is adequate for the purposes and goals of the research (Saunders et al., 2017). In the current study, data were coded through three rounds of semi-structured interviews, and when the third round was conducted when more data were collected, no new themes, categories, or concepts emerged. At the same time, all the existing categories and concepts in the coding had been fully developed with detailed descriptions and clear relationships. The four threads obtained from this study basically developed the basic status and understanding of urban public spaces in China and adequately explain the phenomena in the data, and further data collection does not significantly change the theoretical structure. The new data added no new value to the existing theoretical framework and the data began to become redundant. Therefore, it was basically judged that this grounded theory was largely saturated.

The saturation analysis in this study confirmed the completeness and rigor of the research findings. Through three rounds of interviews, the conceptual, category, and theoretical saturation was systematically evaluated to ensure data sufficiency and comprehensiveness. Conceptual saturation was demonstrated as new meaning units ceased to emerge, allowing for a rich conceptual network around media architecture in Chinese urban spaces. Category saturation was achieved by fully developing all relevant categories, with no new attributes arising in subsequent interviews. Theoretical saturation was reached when further data collection no longer contributed novel themes or insights, validating the depth and scope of the analysis.

These three forms of saturation confirm that the grounded theory developed in this study was reliable and representative, effectively capturing the perspectives on media architecture in urban public spaces. The study has reached a saturation point, and additional data would not yield substantial new value, indicating that the research objectives have been successfully achieved.

4.3.3.5 Analytic Hierarchy Process of Round C

Table 25. Ranking of Analytic Hierarchy Process for Round B + C

Number	B1	B2	B3	B4	B5	B6	B7	B8	C1	C2	C3	C4	C5	C6
City Image	7	7	4	5	5	6	5	6	7	3	6	5	5	7
Economic Impact	6	6	5	2	2	7	2	3	5	6	4	6	3	3
Social Functions and Cultural Exchange	6	5	2	7	7	6	1	5	4	5	7	7	2	3
Innovation and Technology Integration	3	2	6	3	3	6	4	4	3	4	5	4	6	5
Environmental impact and sustainability	4	5	1	4	4	5	3	2	2	1	1	5	1	5
Public participation and social inclusion	5	4	7	6	6	5	6	6	2	7	3	3	4	7
Visual Impact and Vitality	2	5	3	3	3	4	7	7	6	2	2	3	7	7

During the study, in addition to the semi-structured interviews, interviewees from Rounds B and C were asked to participate in a hierarchical analysis of the material from Round A. Interviewees B1 to B8 and C1 to C6, a total of 14 participants, rated the codes summarized in the meaning units of Round A based on their value propensities in designing, evaluating, and managing media architecture. Each code was rated on a scale of 1 to 7, with higher scores indicating greater perceived importance in media architecture in urban public spaces. Table 25 presents the base scores from the two rounds.

Table 26. Descriptive Analysis of Round B

Round B: Designer							
	Mean*	Std*	min	25%	50%	75%	max
City Image	5.625	1.060660172	4	5	5.5	6.25	7
Economic Impact	4.125	2.100170061	2	2	4	6	7
Social Functions and Cultural Exchange	4.875	2.232071427	1	4.25	5.5	6.25	7
Innovation and Technology Integration	3.875	1.457737974	2	3	3.5	4.5	6
Environmental impact and sustainability	3.5	1.414213562	1	2.75	4	4.25	5
Public participation and social inclusion	5.625	0.916125381	4	5	6	6	7
Visual Impact and Vitality	4.25	1.908627031	2	3	3.5	5.5	7

*All data discussed below are retained to two decimal places

Table 26 presents the perceptions of Round B's designers on the various indicators of Round A.

The designers' perceptions of Round A's indicators are presented in the table. Public participation and social inclusion (mean=5.63; std=0.92) was considered by the designers, with City Image (mean=5.63; std=1.06) being slightly less important. Designers placed the most emphasis on the public's experience of the media architecture design, followed by the designers' concern for the impact of the media architecture on the overall image of the city when designing the media architecture. Environmental impact was considered the least important (mean=3.5; std=1.41), probably because designers considered the quality of interaction and visual effects of the media architecture to be a higher priority than place and environment. The biggest point of disagreement among designers was Social Functions and Cultural Exchange (std=2.32), and the reason for the disagreement might be because some designers believed that the differences in the positioning and functions of media architecture had resulted in functionality and culture being less important in some commercial and image projects.

Table 27. Descriptive Analysis of Round C

Round C: Professionals							
	Mean*	Std*	min	25%	50%	75%	max
City Image	5.5	1.516575089	3	5	5.5	6.75	7
Economic Impact	4.5	1.378404875	3	3.25	4.5	5.75	6
Social Functions and Cultural Exchange	4.666666667	2.065591118	2	3.25	4.5	6.5	7
Innovation and Technology Integration	4.833333333	1.471960144	3	4	4.5	5.75	7
Environmental impact and sustainability	2.5	1.974841766	1	1	1.5	4.25	5
Public participation and social inclusion	4.333333333	2.160246899	2	3	3.5	6.25	7
Visual Impact and Vitality	4.5	2.42899156	2	2.25	4.5	6.75	7

Table 27 presents the views of Round C professionals on the indicators compared to Round A. It is interesting to note that although the results of Round B were processed, they were not made available to Round C interviewees as this was done to avoid capturing misleading data. Professionals considered City Image to be the most important (mean=5.5, std=1.52) because Round C interviewees tended to take on some of the work of judging media architecture in the city's public spaces, and therefore Round C interviewers were more concerned with the overall image of the city. 5.5, std=1.52), the reason for this was that interviewers in Round C were often tasked with judging media architecture in some of the city's public spaces, so the interviewers of Round C were more concerned with the overall image of the city. It is worth noting that the same thing that both designers and professionals considered least important was the environmental impact (mean=2.5, std=1.97). In this round, however, the biggest divergence was between Visual Impact and Vitality (std 2.43), which might be because some of the interviewees in Round C expressed negative views on visual interference with the city's image.

Table 28. Descriptive Analysis of Round B + C

Round B + C: Designers + Professionals							
	Mean*	Std*	min	25%	50%	75%	max
City Image	5.571428571	1.222499691	3	5	5.5	6.75	7
Economic Impact	4.285714286	1.772810521	2	3	4.5	6	7
Social Functions and Cultural Exchange	4.785714286	2.082105866	1	3.25	5	6.75	7
Innovation and Technology Integration	4.142857143	1.292412345	2	3	4	5	6
Environmental impact and sustainability	3.071428571	1.685425567	1	1.25	3.5	4.75	5
Public participation and social inclusion	5.071428571	1.639150142	2	4	5.5	6	7
Visual Impact and Vitality	4.357142857	2.060886398	2	3	3.5	6.75	7

Table 28 combines the two previous rounds of judgments and perceptions of media architecture. Interviewees generally agreed that City Image was the most important: it had the highest mean score and the lowest standard deviation (mean=5.57; std=1.22). Interviewees agreed that it would be desirable to temporarily forego Environmental impact and sustainability for better interaction or more graphic visuals (mean=3.07; std=1.69). The biggest point of divergence in this set of data was between Social Functions and Cultural Exchange and Visual Impact and Vitality. Based on previous studies, it is known that designers are unstable in their judgement of Social Functions and Cultural Exchange and professionals believe that there is a discrepancy in the judgement of Visual Impact and Vitality.

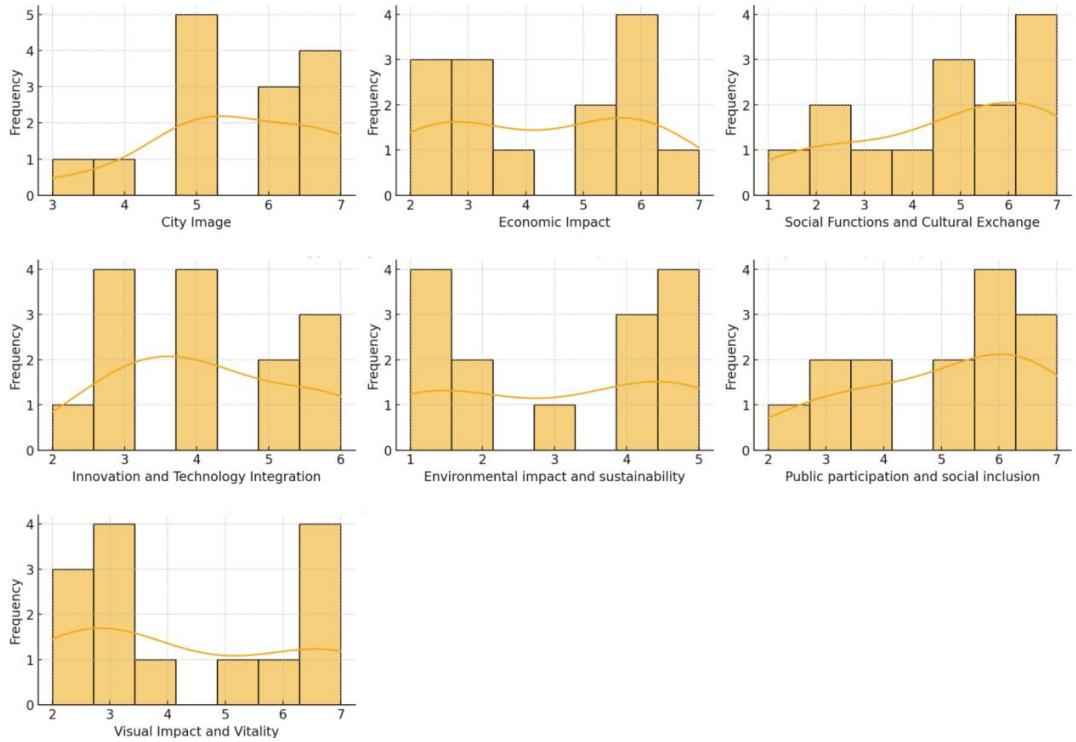


Figure 68. Bar Chart of Indicators

The bar chart (Figure 68) provides a more intuitive understanding of the specific details of each indicator in the hierarchical analysis, with the X-axis of the bar chart showing the rating scores and the Y-axis showing the frequency of occurrence. City Image data is concentrated between 5 and 7, indicating that city image is rated highly, and the frequency of ratings of 7 is high. Economic Impact data is more evenly distributed, with ratings concentrated between 2 and 6, indicating that the ratings of Economic Impact vary widely, indicating a wide variation in Economic Impact ratings. Social Functions and Cultural Exchange ratings are concentrated between 5 and 7, indicating that Social Functions and Cultural Exchange are mostly rated highly. Innovation and Technology Integration are concentrated between 3 and 6, indicating that Innovation and Technology Integration ratings are more concentrated in the middle range. Environmental Impact and Sustainability ratings are more dispersed, with ratings between 1 and 5, indicating a greater variation in ratings for Environmental Impact and Sustainability. Public participation and social inclusion also show a similar picture, with a wide variation in ratings. Visual Impact and Vitality ratings are polarised, with concentrations of 2, 3 and 7, indicating a clear divergence in the ratings of Visual Impact and Vitality.

City image scores are concentrated between 5 and 7, indicating high ratings due to good architectural style and urban planning. Economic impact scores are evenly distributed, showing wide variation in opinions. Social functions and cultural exchange scores are between 5 and 7, indicating widespread recognition. Innovation and technology integration scores are between 3 and 6, indicating moderate performance. Environmental impact and sustainability scores are dispersed, reflecting differing views. Public participation and social inclusion scores are also dispersed, showing a divergence of opinions. Visual impact and vitality scores are polarized, concentrated at 2, 3, and 7, indicating significant differences in perception.

The data was analysed using box-and-whisker plots to better compare the differences between the Round B and Round C groups, as shown in Figure 69, supplemented by pre-series tables for a multidimensional assessment. The box-and-whisker plots illustrate the distribution of each metric within each group, including medians, quartiles, maximums, minimums, and outliers. For City Image, the medians of both groups are relatively close, but Round B exhibits a wider distribution, indicating greater variability. In terms of Economic Impact, Round B shows a wider distribution with a lower median, whereas Round C has a higher median and a more concentrated distribution. When considering Social Functions and Cultural Exchange, both groups display significant variability, though Round B has a slightly higher median. Innovation and Technology Integration shows that both groups have similar medians, but Round C presents a wider distribution. For Environmental Impact and Sustainability, Round B has a more concentrated distribution with a higher median, while Round C demonstrates more variability. Regarding Public Participation and Social Inclusion, Round B not only has a higher median but also a wider distribution, indicating greater variability and higher engagement. Finally, in terms of Visual Impact and Vitality, Round C has a higher median and a broader range of distribution compared to Round B, suggesting a more diverse impact. These comparisons highlight the distinct characteristics and variations in the assessments of the two groups across different metrics, providing a comprehensive understanding of their differences.

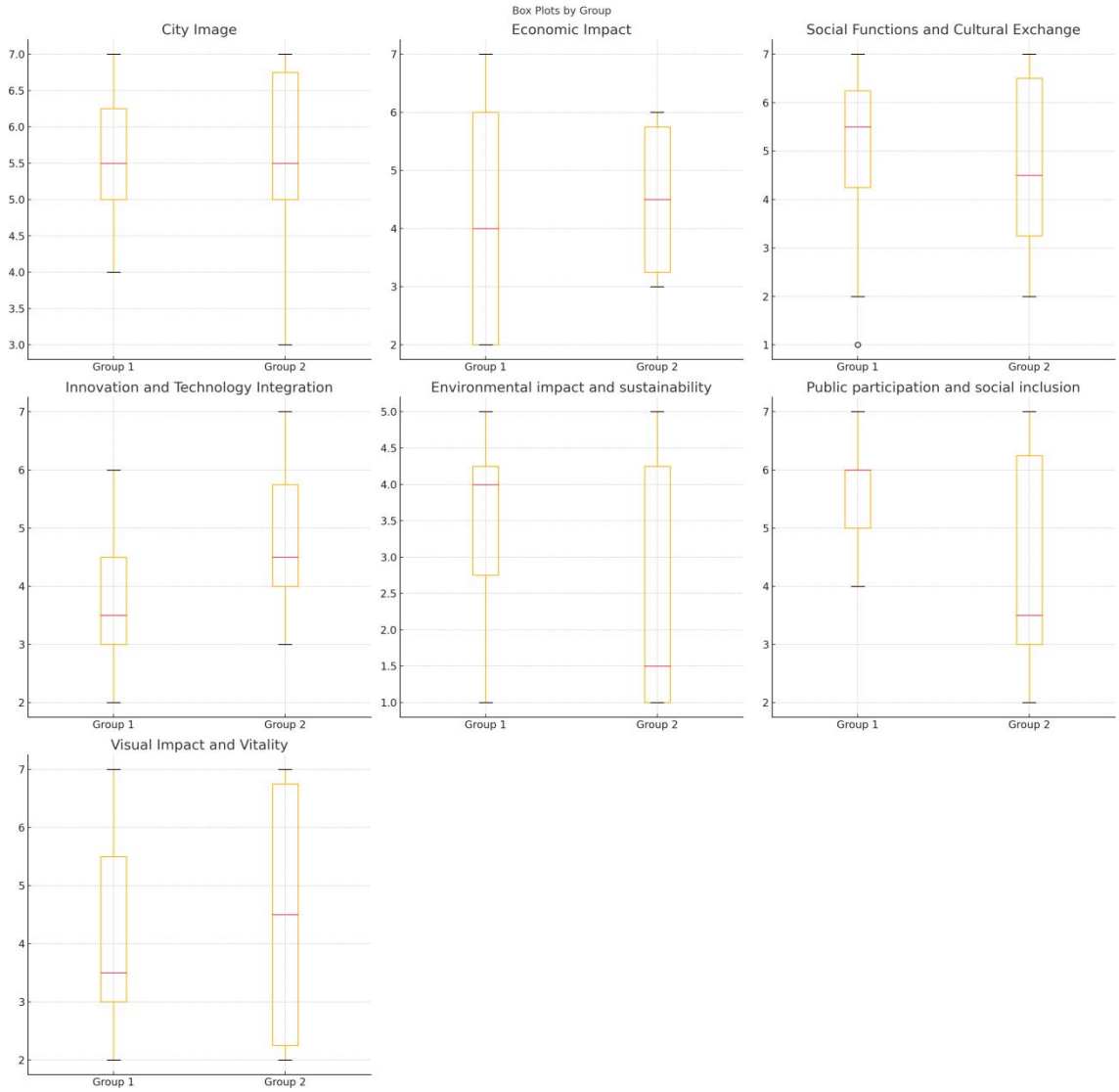


Figure 69. Box Plots of Analytic Hierarchy Process for Round B + C

A comparison of the box plots for the two groups confirms the understanding of the data in the preceding table, as Round B has higher medians for most of the indicators, suggesting that Round B performs better in these areas. Several indicators in Round B, such as “Economic Impact” and “Visual Impact and Vitality”, have high median values, indicating better performance in these areas. The distributions of the two groups on “Social Functions and Cultural Exchange” and “Innovation and Technology Integration” are closer.

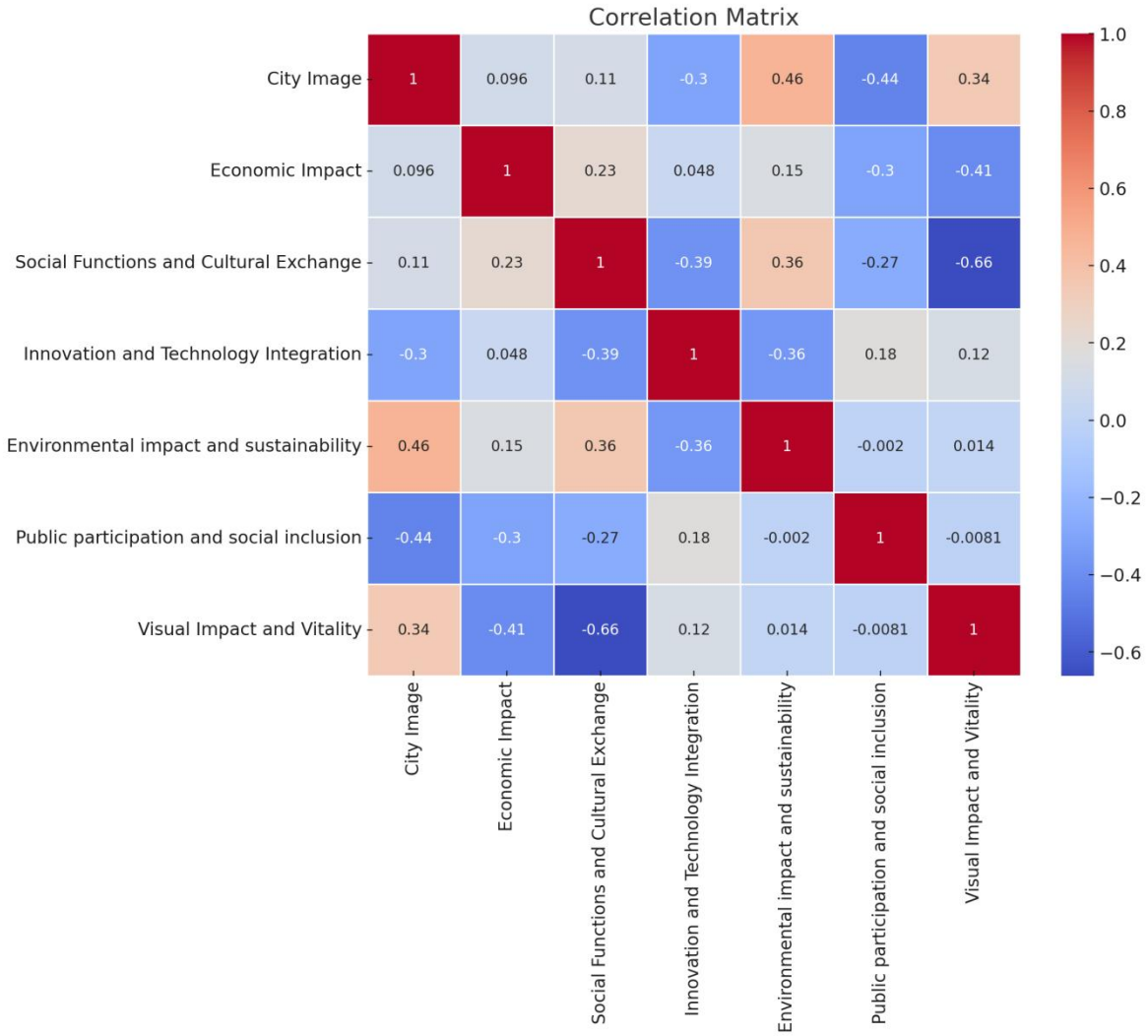


Figure 70. Correlation Matrix Heatmap of Analytic Hierarchy Process for Round B + C

The data collected through the hierarchical analysis was compared to get an overall picture of the data, and in the next stage of data processing, the comparative relationship between the scores of the indicators was analysed through the heat map (Figure 70). A heat map is a visualisation tool used to show the correlation between variables. The colours in the graph indicate the strength of the correlation, with darker colours indicating a stronger correlation. The correlations range from -1 to 1. There are a total of four findings from the heat map.

City Image has a positive correlation with Environmental Impact and Sustainability (0.46) and Visual Impact and Vitality (0.34), indicating that enhancing the city image requires attention to environmental protection and urban aesthetic design. However, City Image is negatively correlated with Innovation and Technology Integration and Public Participation and Social Inclusion, suggesting that we should carefully manage innovation trends and public engagement to better serve the true city image.

Economic Impact is positively correlated with Social Functions and Cultural Exchange,

suggesting that economic development contributes to enhancing these aspects. However, attention needs to be paid to visual and social inclusion aspects. There is a negative correlation of -0.41 between Economic Impact and Visual Impact and Vitality, indicating that visual impact and vitality are lower where economic impact is higher. Additionally, Economic Impact and Public Participation and Social Inclusion have a negative correlation of -0.3, suggesting that higher economic impact is associated with lower public participation and social inclusion.

There is a paradox between innovation and the environment. Specifically, the negative correlation of -0.36 between Innovation and Technology Integration and Environmental Impact and Sustainability suggests that areas with better technological innovation generally exhibit poorer environmental sustainability. This highlights the necessity of striking a balance between environmental protection and sustainable development with the promotion of technological innovation.

The challenges of social inclusion are evident as public participation and social inclusion negatively correlate with City Image and Economic Impact, with correlations of -0.44 and -0.3 respectively. This indicates that higher levels of public participation and social inclusion are associated with lower city image and economic impact, presenting a challenge in balancing these aspects during economic development.

Using the analytic hierarchy process (AHP) and various illustrations, the indicators establish the centrality of urban imagery in the overall study. The study found that professionals rated urban imagery slightly higher than the designers' sample group, with the main divergence between the two groups being in social function and visual vibrancy. Additionally, environment and vision showed a correlation with urban imagery, necessitating special attention. The comparison of indicators also revealed strong correlations between economic and social factors, innovation and environment, and challenge and participation indicators for media architecture in urban public space. These correlations required more focus in the design, management, and direction processes. Although the ratings of the indicators did not directly direct the design and management of media architecture, they offered a series of models for stakeholders to adhere to.

4.4 Ethical Consideration

In this study, ethical considerations permeated the entire research process. Firstly, the study strictly adhered to the principle of informed consent. All participants voluntarily signed informed consent forms after being fully informed about the purpose, methods, potential risks, and benefits of the research. The personal data of participants would be anonymized and encrypted to ensure privacy and confidentiality. Among the 25 interviewees involved in this study, including 3 subjects for data saturation verification, all signed the informed consent forms before the research commenced. Furthermore, the research methodology was designed to comply with ethical norms, avoiding any unnecessary inconvenience or harm to participants. All research activities have been reviewed and approved by the ethics committee, ensuring the research process meets ethical standards. Moreover, since data collection for this study was conducted outside the UK, it also complies with the ethical guidelines of both the University of Wales Trinity Saint David and the Guangzhou Academy of Fine Arts in China. The collected data didn't include sensitive information as defined by GDPR 2016 and DPA 2018. From the perspective of academic integrity and plagiarism avoidance, this study ensured that all citations and references were accurate and properly sourced,

adhering to the APA citation standards. Finally, the research process and results should remain transparent to prevent data manipulation and distortion. Upon completion of the study, the data and results would be appropriately disclosed to promote academic exchange and knowledge dissemination.

4.5 Chapter Summary

This chapter investigates media architecture in Chinese urban public spaces through positivist and interpretive approaches, aiming to explore the Chinese public's expectations for media architecture in future urban spaces.

The positivist section encompasses studies from media, urban, and social perspectives. The research is based on samples from 15 cities across China, with researchers conducting in-depth observations and recordings over the past two years.

Media research involved classifying the communication mechanisms of media architecture in public spaces across 15 cities. By organizing the location, target audience, content, and purpose of these media structures, the study identified three types of media communication mechanisms: City Advocates, Hawkers, and Partygoers. This classification enhances the understanding of the roles and status of media architecture in urban public spaces.

Urban research utilizes Kevin Lynch's concept of the image of the city, emphasizing the temporal aspect in addition to physical elements. It posits that media architecture acts as a carrier of dynamic urban imagery.

Social research is divided into two parts: spatial triad and space syntax. These methods provide complementary perspectives on urban public spaces. To capture more detailed urban insights, the study narrowed its focus from 15 to 5 cities for spatial examination and calculation. The spatial triad involves spatial practice, representations of space, and representational space. It includes recording, mapping, and videoing media architecture in urban public spaces. Space syntax uses various metrics to calculate and illustrate the locations of media architecture on maps, and combines data analysis to examine outstanding samples in these spaces.

The social research advocates for unique evaluation standards for future media architecture designs, distinct from those of non-media architecture. It recommends using different knowledge structures and perspectives for precise design, management, and guidance of media architecture. This approach broadens the research and practice perspectives of media architecture, offering a new method for designing urban public space imagery. By integrating the core findings of the spatial triad and space syntax, the study suggests adopting a completely different research paradigm and attitude towards media architecture, viewing it as billboards, laboratories, galleries, decorations, and interactive game venues based on their roles and locations in cities.

The interpretive research employs grounded theory, conducting three rounds of semi-structured interviews in the past year, followed by hierarchical analysis and diagrammatic data based on the first round of questionnaire coding. Through constructive coding of interviews, the study

developed theories related to the role of media architecture in future urban public spaces. The three rounds of interviews focused on experiences, designers, and professionals involved in urban public space media architecture. By organizing raw materials and meaning units, the interviews yielded 11 well-explained codes and three fully interpreted coding tables. Using axial coding, the study centred on urban public space imagery and, supported by data from the three rounds, derived four theories concerning future urban public space design, measurement, guidance, and the future understanding of media architecture. The grounded theory also involved discussions on sampling and non-sampling and triple saturation tests.

The hierarchical analysis further established the central position of urban public space imagery and proposed relational metrics to be measured for the construction of media architecture in future urban spaces. The study used descriptive analysis, bar charts, box plots, and heat maps to explore the characteristics of the metrics and their interrelations.

By combining positivist and interpretive approaches, this research revealed the multifaceted roles and complex relationships of media architecture in Chinese urban public spaces. Positivism provides objective data and patterns, while interpretivism delves into people's subjective experiences and expectations of media architecture. Future media architecture design should integrate these methods, considering its dynamic role in urban public spaces to achieve more precise and effective design, management, and application. This comprehensive research paradigm enhances our understanding of current media architecture and supports its future development in urban public spaces.

The urban and individual studies conducted in this research are based entirely on Chinese urban public spaces and the experiences of Chinese media architecture users. Therefore, the research findings offer unique insights into media architecture in the context of Chinese urban spaces. The forthcoming research phase will incorporate triangulation to validate the conclusions. This will entail comparing the derived theories and doctrines with the existing ones and outstanding cases. Through such validation and discussion, the future development direction of urban media architecture will be further confirmed.

CHAPTER FIVE

DISCUSSTION

5.1 Introduction

In this chapter, this chapter details the development process of the research and summarises the contribution of the current study, starting from the triangulation of the research findings in the previous chapter. This study is based on rooted theory guided by post-positivist philosophy, covering both positivist and interpretivism research tendencies and combining qualitative and quantitative approaches. Through triangulation, the above material is systematised, the findings and contributions of this study are clarified, the research questions are responded to, and how the research gaps are explained to be filled.

This study investigates and researches the performance of media architecture in urban public spaces in China. Based on the experience of media architecture in urban public spaces in China, the study develops a series of doctrines that respond to systemic, interdisciplinary, and unique issues in the research gap. Then, another part of this chapter compares and explores the findings of this research with existing theories and studies to discuss and anchor the research results in depth.

5.2 Triangulation

Triangulation is a research method used to enhance the credibility and validity of research findings (Thurmond, 2001, p.253). By combining multiple data sources, methods, or theories, researchers can achieve a more comprehensive understanding of the research subject, thereby reducing the bias associated with a single method or data source (Bekhet & Zauszniewski, 2012). Although some scholars express skepticism about the rationality and structure within the triangulation method (Hammersley, 2008; Heesen & Zucker, 2019), this does not prevent triangulation from being a critical validation method in research (Bans-Akutey & Tiimub, 2021; Dzwigol, 2022).

According to Arias' classification of triangulation, four types of triangulation are identified: Data, Researcher, Theoretical, and Methodological (Arias, 2022, p.40). This study will focus on Methodological triangulation. This is because the study on media architecture in public spaces in Chinese cities utilized six research methods, including both qualitative and quantitative approaches, to collect data from different perspectives. Methodological triangulation is regarded as an effective approach to broadening researchers' insights into new phenomena (Bekhet & Zauszniewski, 2012, p.20), and this in-depth insight is particularly suitable for the study of media architecture, which has only gained popularity in the last decade. Additionally, employing both "within-method" and "across-method" triangulation is considered accurate and rigorous, effectively reducing bias in research (Casey & Murphy, 2009, p.16; Heesen et al., 2019; Arias, 2022, p.40).

In terms of triangulating the methods of this research, the methods of data collection will be measured from two perspectives, the first being the division of the research methods into qualitative and quantitative dimensions, with each of the three research methods being measured. On the other hand, these six research methods will be triangulated in terms of positivism and

interpretivism for categorisation. Through these two rounds of measurement, the data from the above studies were mined in depth to define the findings and contribution of the subsequent studies.

5.2.1 Methodological Triangulation

In this study, research methods can be categorized based on methodological perspectives into quantitative and qualitative levels. By employing this standard, a horizontal measurement is conducted to compare findings across different studies. The quantitative research includes calculations by researchers using space syntax for the areas where media architecture is located in public spaces, surveys assessing the audience's evaluations of various indicators for urban media architecture, and ranking and scoring of indicators derived from interviews. The qualitative research encompasses the articulation of the functional aspects of spatial practices related to media architecture in urban public spaces, the extension of urban imagery through media architecture, and classification methods of media architecture based on its content. These two methodologies analyse and discuss media architecture from multiple dimensions. The research from different levels and perspectives may introduce limitations; therefore, triangulation is employed to mitigate these limitations and deeply explore the relationships within the data.

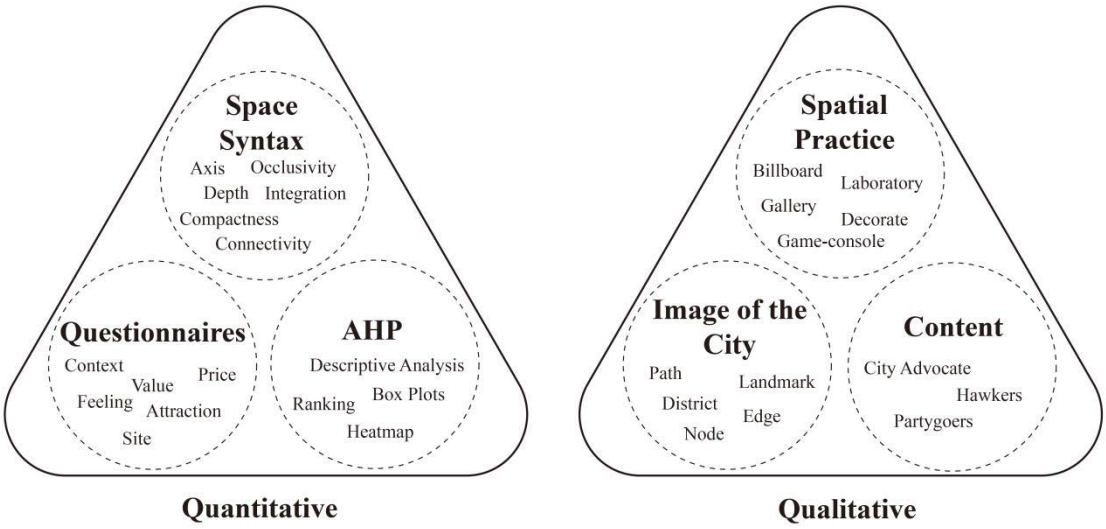


Figure 71. Schematic Diagram of the Methodological Triangulation Assessment

5.2.1.1 Data of Space Syntax

In the analysis of space syntax, areas where media architecture is located often exhibit higher levels of axis, connectivity, integration, and occlusivity than the overall global average of the site while showing lower levels of compactness and depth. Table 29 demonstrates this observation by comparing the space syntax data of media architecture in public spaces across five cities. The table calculates the average values of media architecture and the overall site across six dimensions for each city. The city's values are derived from Tables 6 - 10 where all relevant parameters for media architecture are comprehensively calculated along with the global average parameters. The ratio R represents the proportion of parameters of the area where media architecture is located to the global parameters, providing a clear visualization of the differences between these parameters.

Table 29. Integration of Space Syntax Data

City	Axis	Connectivity	Integration	Occlusivity	Compactness	Depth
Guangzhou	**6.1**	**139.3**	**4.40771**	**1957663.7**	0.09247508	2.992432
Global*	3.25	90.7234	3.55327	1268800	**0.120648**	**3.53266**
R	**0.532**	**0.651**	**0.806**	**0.648**	**1.3054**	**1.181**
Shenzhen	**10.5**	**2029.1**	**8.093971**	**1208.8337**	0.12738122	2.461274
Global*	4.32	1286.37	6.99359	770.608	**0.136678**	**2.75849**
R	**0.411**	**0.634**	**0.864**	**0.637**	**1.073**	**1.121**
Chengdu	**7.4**	**2316.5**	**7.8507**	**934.1894**	0.141495	2.488
Global*	3.81	1176.24	6.44076	723.322	**0.16474895**	**2.89916**
R	**0.514**	**0.508**	**0.820**	**0.774**	**1.164**	**1.165**
Wuhan	**7**	**1485.997556**	**7.68712111**	**703.188889**	0.132522667	2.443658
Global*	3.36	786.804	5.7439	384.598	**0.159899**	**3.01029**
R	**0.480**	**0.529**	**0.747**	**0.547**	**1.207**	**1.231**
Changsha	**7.6**	**1910.4**	**6.243588**	**1267.7169**	0.10876349	3.143053
Global*	3.35294	1446.37	5.58823	1090.36	**0.117176**	**3.41112**
R	**0.441**	**0.757**	**0.895**	**0.860**	**1.077**	**1.085**

* Refers to the global average index

R = Media Architecture regional Average / Golbal Area Average

In urban public spaces, media architecture exhibits patterns of high openness and accessibility. Axis is used to describe spatial layouts and movement paths, aiding in the analysis of spatial accessibility and visibility. Higher axis values indicate greater accessibility and visibility. The analysis of five cities shows that the axis values for areas with media architecture are nearly double those of the overall site, suggesting that these areas are open and accessible. In urban planning, connectivity reflects the accessibility and convenience of a location, often used to assess the efficiency of road networks or pedestrian paths. The areas with media architecture exhibit significantly higher transportation convenience than the overall site, with tight connections to other nodes.

Media architecture units serve as critical nodes within the space. Although many areas with media architecture have limited visibility, the strong visual presence of media architecture still enhances the sense of place. Integration is a space syntax measure used to assess the centrality or importance of a spatial unit (e.g., streets, buildings) within the entire spatial network. High integration indicates that the spatial unit is easily accessible and a key node in the network. Calculations from the five cities indicate that media architecture areas generally have higher integration levels than the overall integration of the site. Areas with high occlusivity typically have restricted visibility, potentially affecting the use and experience of the space. However, high occlusivity can also let pedestrians pay attention to the media architecture itself, enhancing the efficiency of content dissemination.

Media architecture is often placed in open spaces, creating a comfortable and safe interactive experience for visitors. High compactness indicates efficient space utilization, helping to reduce

commuting distances and promote walking. The overall site compactness is lower than that of the areas with media architecture, making these areas suitable for staying and experiencing. Greater depth implies that a node is more challenging to reach and remoter. The depth of media architecture areas is lower than that of the overall site, indicating a higher accessibility. Low compactness and low depth offer an open, spacious, and easily accessible leisure space while reducing traffic flow and providing a quiet, safe walking environment.

5.2.1.2 Data of Questionnaires

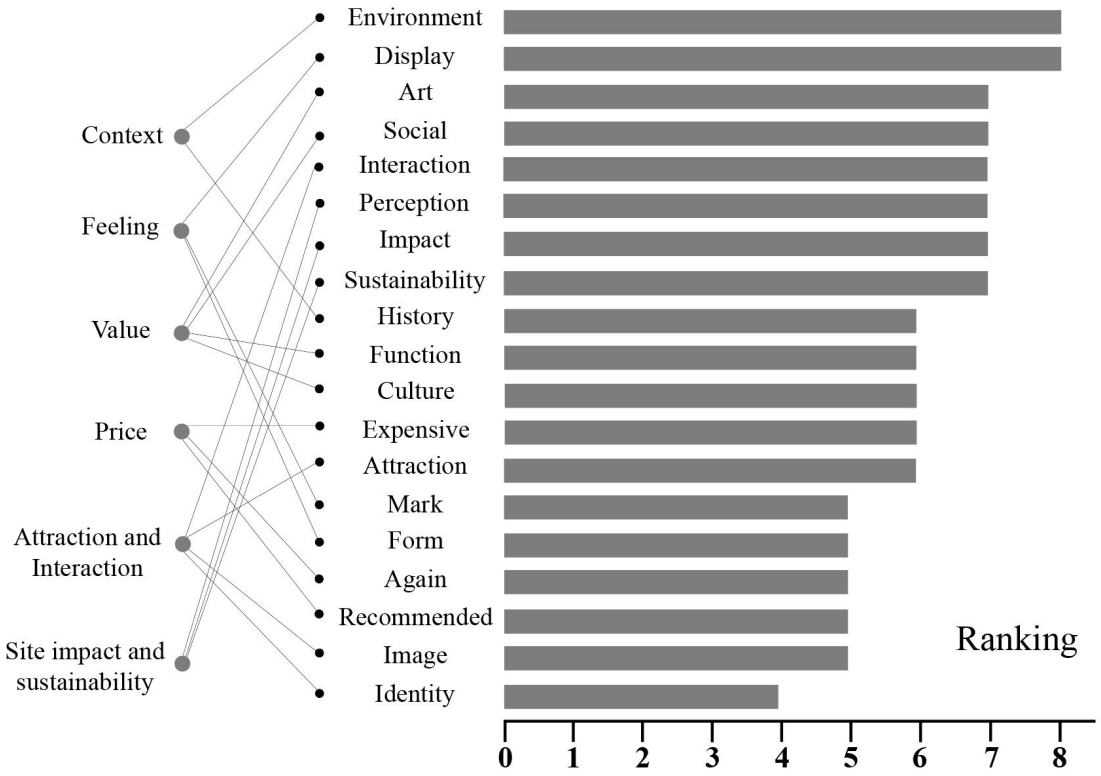


Figure 72. Integration of Questionnaire Information

Figure 72 presents the integration of questionnaire data and the scoring of relevant indicators from the first round of interviews. This chart illustrates the perceived specific functions of media architecture as identified by the respondents in the initial interviews. “Environment” and “Display” ranked the highest, indicating that the adaptability of media architecture to its environment and its display effectiveness were critical evaluation criteria. “Art” and “Social” also received high scores, highlighting the importance of artistic value and social interaction as significant features of media architecture. Additionally, high scores in “Sustainability” and “Interaction” underscored the attention given to environmental impact and interactive experiences.

Media architecture, as a crucial component of urban public spaces, serves multiple functions, including information dissemination, enhancing urban identity, and improving the quality of public spaces. However, based on the indicator scores of media architecture performance in urban public spaces, “Identity” received the lowest score. This suggests a significant deficiency in how media architecture reflects urban characteristics and distinctiveness. The primary reason for the

low score in urban identity is the tendency for media content to be repetitive, commercialized, or mundane. Such content lacks creativity and depth, failing to effectively convey the unique culture and historical background of the city. Consequently, viewers struggle to find a connection with the city's identity through these structures. Moreover, commercialized content tends to cater to market demands rather than showcasing the city's uniqueness, further diminishing the role of media architecture in enhancing urban identity and distinctiveness. As a result, media architecture falls short of becoming a significant representative of urban culture and identity, leading to its lower score in the identity dimension.

5.2.1.3 Data of Analytic Hierarchy Process (AHP)

Through descriptive and correlational evaluations of the coding from the Round B and Round C interviews in previous chapters, the Analytic Hierarchy Process (AHP) yielded two significant conclusions. First, the study utilized box plots (Figure 68) and heat maps (Figure 69) to explore relationships among the codes, further establishing the central role of urban imagery in the grounded theory of this research. This also confirmed the logical rigor of the grounded theory by revealing a positive correlation between urban imagery and both environmental and visual presentations.

Additionally, the study found differences in the primary evaluators between the two groups. Round B, represented by designers, showed greater variability and lower median values across multiple indicators, while Round C, represented by experts, exhibited higher median values and more concentrated distributions in most indicators. Designers focused more on public participation, whereas experts were more concerned with urban imagery. The core divergence among designers centred on the social and cultural functions of media architecture, whereas experts differed on whether the visual functionality and vibrancy of media architecture were more important than other indicators.

5.2.1.4 Quantitative Method Triangulation

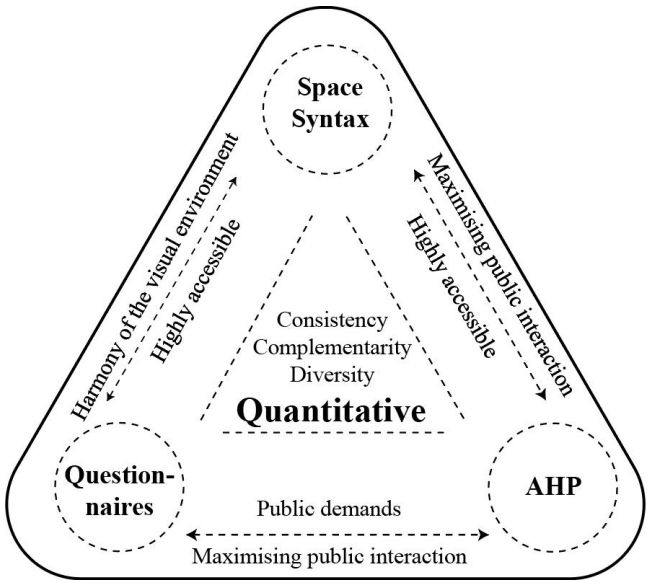


Figure 73. Triangulation of Quantitative

By analyzing spatial syntax, this study suggests that areas with media architecture usually have high accessibility and openness. Despite their open nature, these areas are also highly compact, effectively attracting and retaining public presence for engagement and experience. These zones are critical nodes for comprehension. High accessibility ensures the public can easily access and experience these areas, while high openness and compactness contribute to harmonious visual and environmental design, aligning with public surveys emphasizing the importance of visual and environmental harmony. Media architecture, as key nodes, is often designed to be more visually appealing and attractive to fulfill public needs and enhance public engagement. Designers select these areas for media architecture to maximize interaction and participation. These areas often become iconic urban landmarks, contributing to a distinctive urban image and resonating with expert concerns about urban identity.

Questionnaire data analysis reveals that visual impact and environmental harmony are paramount for media architecture. The public expresses aversion towards the homogenization resulting from commercialized media architecture. If media architecture areas possess high openness and accessibility, their design is more likely to achieve visual and environmental harmony. Spatial syntax analysis supports this, indicating that these areas indeed possess significant appeal. Public aversion to homogeneity reflects dissatisfaction with the lack of locally distinctive architecture. Comparing spatial characteristics of media architecture areas in different cities can further elucidate which features contribute to these sentiments. Designers should prioritize public engagement and focus on visual and environmental design to meet public demands. Experts' focus on urban image aligns with public disdain for homogenization, highlighting the need for unique designs to enhance urban distinctiveness, reflecting a shared concern for urban identity.

Analyses using the Analytic Hierarchy Process (AHP) indicate that designers prioritize public engagement, whereas experts emphasize urban image. There is a positive correlation between urban image and environmental and visual presentation. Highly accessible and open areas facilitate public participation; designers select these areas to achieve higher public interaction rates, consistent with spatial syntax findings. Compact and highly accessible areas are often designed as urban landmarks, enhancing urban image. Spatial syntax can identify these key nodes, supporting expert concerns. The public deems visual and environmental harmony to be of utmost importance. Designers are thus obliged to take this into account in order to guarantee public engagement and contentment. The public's dislike of homogenization implies the necessity for more singular designs to augment urban distinctiveness. The concerns of experts ought to be integrated with public requirements to fashion unique and harmonious urban vistas.

The comprehensive analysis reveals that the three conclusions support and complement each other across multiple aspects. They consistently highlight the importance of public engagement, visual and environmental harmony, and urban image. Spatial syntax provides quantitative spatial feature analysis, questionnaires offer subjective public feedback, and the AHP reveals designer and expert priorities. These methods are complementary, offering a holistic perspective for the study. Differences highlight areas for further research, such as balancing commercialization and local distinctiveness to ensure media architecture both attracts the public and enhances urban image. Through the application of methodological triangulation, the reliability of the research conclusions

is verified, thereby affording a more comprehensive and profound understanding.

5.2.1.5 Data of Spatial Practice

Using the perspective of spatial production theory, one can comprehensively understand the role of media architecture within urban public spaces. Media architecture transcends mere physical space, reflecting and shaping social relations and cultural expressions through its design, usage, and impact. These structures not only offer new interactive and social spaces within the city but also encounter challenges related to commercialization, information overload, and the integration of technology and culture. Understanding these aspects is crucial for effectively planning and managing urban public spaces.

Simultaneously, media architecture participates in the production of space, showcasing the unique characteristics of the space and place through its content. It plays a significant role in expressing the culture of the place, embodying the narrative of the locale, and fostering communication and interaction within the space.

5.2.1.6 Data of Image of the City

From the perspective of Kevin Lynch's theory of urban imagery, the role of media architecture in urban public spaces can be more clearly understood. At the path level, media architecture can guide pedestrian and vehicular traffic through dynamic displays and lighting effects, while also providing real-time information such as traffic updates, weather forecasts, and public service announcements, thereby enhancing the functionality and convenience of these pathways. Regarding boundaries, media architecture can enhance the visual effect of city borders, making them more recognizable and distinctive. Additionally, media architecture can blur physical boundaries, creating more open and integrated boundary areas by displaying artworks or interactive installations.

At the district level, the uniform installation of media architecture with consistent styles or themes within specific areas can strengthen the area's uniqueness and identity. Media architecture can assist in delineating urban functional zones, using diverse media content and display forms to differentiate commercial, cultural, residential, and other functional areas. Concerning nodes, media architecture can serve as the core of urban nodes, attracting people to gather and interact by offering information, entertainment, and interactive functions. Furthermore, through dynamic and interactive display methods, node areas can become more attractive and vibrant, serving as important landmarks and social spaces within the city. Media architecture can become prominent city landmarks through innovative design and strong visual impact, thus aiding people in recognizing and remembering urban spaces. Media architecture with cultural or historical themes can symbolize the city, reflecting its cultural essence and historical background.

Media architecture not only reinforces the basic elements of paths, boundaries, districts, nodes, and landmarks but also enriches people's perception and experience of urban spaces through dynamic and interactive means. Detailed mechanisms and case studies further reveal how media architecture enhances the functionality, recognizability, and cultural appeal of urban spaces through information transmission, theme creation, activity centres, and visual focal points.

Moreover, the emergence of media architecture aligns with Kevin Lynch's reflective concepts on urban imagery theory, extending beyond physical space to showcase temporal imagery within the city through fluid media.

5.2.1.7 Data of Media Content

As shown in Table 4 and Image 12, media architecture has unique advantages in highlighting the city's image, promoting commercial information, and facilitating the city's visual imagination through its content. The role of media architecture in urban public space is further summarised by classifying them into three types of media architecture, namely City Advocate, Hawkers and Partygoers.

5.2.1.8 Qualitative Method Triangulation

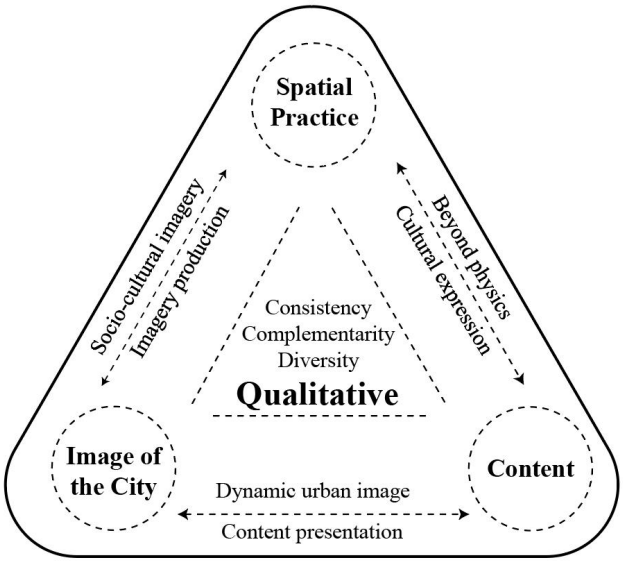


Figure 74. Triangulation of Qualitative

Media architecture is not merely a part of physical space; it also reflects and shapes social relations and cultural expressions through its design, usage, and impact. In urban settings, media architecture offers new interactive and social spaces while facing challenges such as commercialization, information overload, and the integration of technology and culture. The design and use of media architecture mirror and influence social relations and cultural expressions, aligning with the enhancement and development of the urban image. This urban image encompasses both physical form and social and cultural dimensions. Moreover, media architecture, by providing new interactive and social spaces, can reinforce the urban image, particularly within the temporal context of future development. These interactive spaces promote positive public perception and experience of the city.

The physical presence and socio-cultural functions of media architecture strengthen the urban image. This reinforcement is evident not only in the present but also in the future temporal dimension of urban image development. The evolution of the urban image is a dynamic process, with media architecture aligning through ever-changing content and interactive spaces, reflecting

societal and cultural evolution. Additionally, the content of media architecture directly contributes to the enhancement of the urban image by showcasing the city's character and visual imagination. The future development of the urban image requires continuous updating and enrichment of such content. Media architecture content can not only reflect the current urban image but also anticipate and guide the future urban image. This alignment with temporal imagery is achieved through the foresight and innovation of content.

Media architecture excels in highlighting the city's image, promoting commercial information, and fostering urban visual imagination through its content. The content plays a crucial role in media architecture, not only displaying the city's image but also reflecting social relations and cultural expressions through its design and usage. The commercialization and visual imagination of media architecture content are directly related to the challenges of commercialization and information overload in urban areas. Balancing between richness and overload is essential for this content.

By means of triangulation analysis, the above-mentioned conclusions are buttressed both theoretically and practically, providing substantial insights and guidance. The three conclusions uniformly highlight the multifaceted functions and roles played by media architecture, especially in the aspects of social relations, cultural expressions, urban imagery, and content display. Each conclusion reveals the importance and impact of media architecture in urban settings from different perspectives: spatial production, urban imagery, and content analysis. These complementary methods provide a comprehensive view for understanding the full scope of media architecture. The divergent aspects highlight areas needing further research, such as balancing commercialization and information overload challenges, ensuring that media architecture content enhances the urban image without compromising its uniqueness and cultural value.

5.2.2 Paradigm Triangulation

Based on the steps and framework of the study (Figure 9), this study can also triangulate the methods from a paradigm perspective (Figure 75), and continue to dig out the linkages between the methods based on the antecedent understanding to discuss this study scientific in depth.

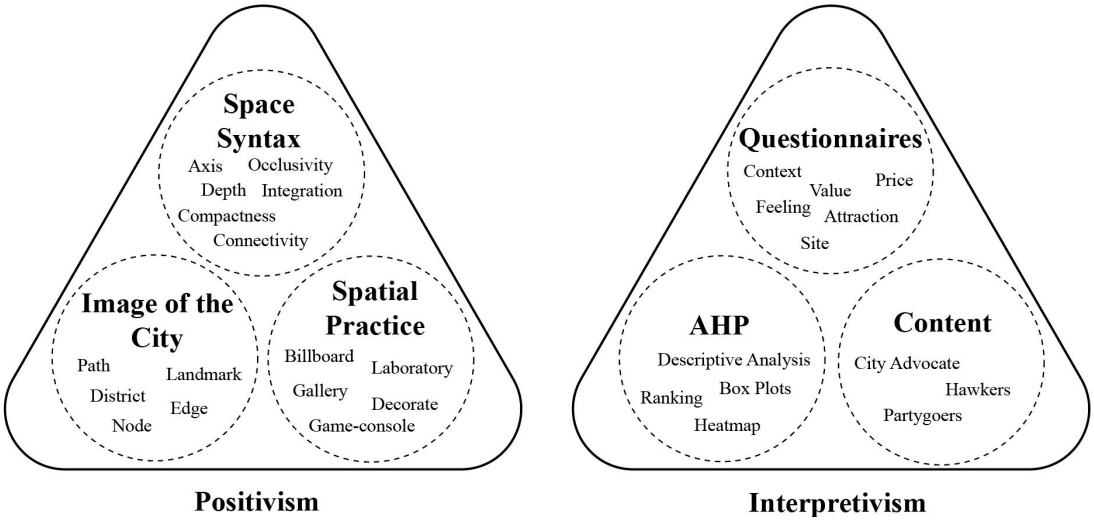


Figure 75. Schematic Diagram of the Paradigm Triangulation Assessment

5.2.2.1 Positivism Triangulation

In the positivism research diagram, triangulation suggests that media architecture, through its high accessibility and compact open design, not only reinforces urban imagery and socio-cultural expression but also becomes a dynamic cultural node and interactive platform in balancing the challenges of commercialization and information overload.

Media architecture, characterized by its high accessibility and openness, powerfully showcases urban landscapes and facilitates cultural representation. By integrating empirical research findings from spatial syntax, urban imagery, and spatial production studies, it is posited that media architecture not only solidifies urban visual identity but also fosters social connection and enriches cultural narratives by creating dynamic interactive spaces. Consequently, media architecture evolves into a critical nexus for urban imagery and cultural dialogue, serving dual roles as a physical landmark and a convergence point for socio-cultural intersections. Its high accessibility and openness ensure that media architecture will continue to play a central role in the future evolution of cities, responding to and leading the flux of urban culture and social relations through innovative design and multifunctional utilization.

Confronted with the dual pressures of compactness and commercialization, media architecture as a key node of social and cultural expression carries a complex mission. Empirical studies combining spatial syntax and spatial production theories reveal that while compactness is conducive to providing intensive high-quality experiences, it also brings challenges of commercial information overload and visual saturation. Therefore, designers and urban planners bear a significant responsibility to maintain both compactness and openness. Meanwhile, they need to adopt innovative strategies to meticulously regulate the flow of commercial information and the public's sensory and cultural perception to prevent information saturation. Media architecture is not only a prominent landmark in the urban fabric but also the core intersection of socio-cultural dynamics. This dual identity underscores its indispensable position in urban planning and design. Planners must ensure the physical accessibility and openness of media architecture while fully considering its social value and cultural function, achieving harmonious coexistence between functionality and aesthetics, commerce, and culture.

The aforementioned viewpoints are derived from the cross-interpretation of positivism research data and validated through triangulated data verification of the theoretical findings.

5.2.2.2 Interpretivism Triangulation

In the Interpretivism research framework, triangulation suggests that media architecture design should enhance public engagement through visual and environmental harmony. This approach should utilize content design to highlight urban identity and promote commercial information, while balancing commercialization with uniqueness to avoid homogeneity, thus achieving a win-win situation for urban image and public satisfaction.

The design of media architecture should grasp the dual driving forces of environmental harmony and public participation. Analytic Hierarchy Process (AHP) indicates that designers focus on public engagement, which is positively correlated with environmental and visual presentation.

Survey results reveal that the public considers visual and environmental harmony to be of utmost importance and dislikes the homogenization caused by commercialization. Therefore, designers should enhance public engagement through harmonious visual and environmental design, while avoiding monotonous commercial designs. This approach not only improves the urban image but also increases public satisfaction and engagement. Media architecture should elevate the urban image through meticulously designed content, integrating harmonious environmental and visual presentations. This enables effective commercial information dissemination while enhancing the city's unique identity and visual appeal. AHP reveals that experts focus on urban image, which is positively correlated with environmental and visual presentation. Examination of media architecture content shows that it highlights urban identity, promotes commercial information, and fosters urban visual imagination. Moreover, in media architecture content design, it is crucial to balance the dissemination of commercial information with environmental harmony to avoid the phenomenon of homogenized cities. Unique visual and environmental designs should enhance the city’s distinctiveness and attractiveness. Survey results indicate that the public values visual and environmental harmony despises commercial homogenization, and believes that media architecture should emphasize urban identity and commercial information through its content.

The perspectives mentioned above combine the different concerns of designers, experts, and the public, emphasizing the multifaceted functions and challenges of media architecture in the urban environment. They also offer a solution that balances the needs of all parties involved.

5.2.3 Summary of Triangulation

The triangulation of this research is a multi-level and all-encompassing data integration study through a combination of spatial syntax, questionnaires, hierarchical analysis, spatial production, urban imagery, and content analysis.

The study concludes that media architecture in urban environments, through its high accessibility and compact open design, not only reinforces urban imagery and future development time imagery but also reflects and shapes social relations and cultural expressions through its design and use. Designers should enhance public engagement through harmonious visual and environmental contexts, and use content design to highlight the city’s image and promote commercial messages while balancing commercialisation with uniqueness, avoiding one-size-fits-all, and achieving a win-win situation for the city’s image and public satisfaction.

5.2.4 Connecting Grounded Theory

In this chapter, the integration of Grounded Theory and Triangulation is employed to explore the specific contributions of this study and address the existing research gaps and questions. In addition to the multi-level and multi-perspective research on media architecture in urban public spaces mentioned above, an in-depth, semi-structured interview guided by Grounded Theory was carried out among audiences, designers, and managers of media architecture in China. Grounded Theory is a bottom-up research method that emphasizes discovering theories from data. Triangulation is a technique that enhances and supplements research findings through multiple angles and methods. Combining Grounded Theory and Triangulation significantly enhances the reliability and theoretical contributions of the research. This evaluative approach, based on

multiple data sources, multiple research participants, multiple theoretical perspectives, and multiple methods, not only delves deeply into the theories within the data but also expands the breadth of the research.

5.2.4.1 Summary of Grounded Theory

This study, guided by Grounded Theory, developed four research strands to support the theoretical framework. centred around the Urban Public Space Image (AAA1), the research identifies several influencing factors, including Visual, Environmental, Innovative Technology, Economic, Public Participation and Social Inclusion, Future Trends, and the Definition of Media Architecture.

The first thread encompasses visual and environmental factors, where the design of media architecture in urban public spaces (AAA1) necessitates visual guidance for public space creation and environmental spatial imagination. This design is influenced by work ideas and management aspects. Visual factors (AAA5) are primarily influenced by work ideas (BBB1), including participating roles (BB1), workflow (BB2), and environmental interaction (BB3). The combined effects of these factors not only stimulate individual creativity and imagination (AA9) but also enhance the perception of visual effects (AA10). Environmental factors (AAA3), on the other hand, are influenced by challenges and management (BBB2), which include planning and management (BB4), technical challenges (BB5), cognitive bias (BB6), and market feedback (BB7). The interaction of these factors encourages organizations to emphasize environmental social responsibility (AA5) in the planning and management process. By deeply examining the interaction between visual and environmental factors, we can observe the significant role of work ideas in enhancing visual effects. In practical work, the diversity of participating roles and the optimization of workflows promote creative thinking and improve visual outcomes. Meanwhile, managing environmental factors requires a comprehensive consideration of technical challenges and cognitive biases, and timely strategy adjustments based on market feedback, thereby enhancing organizational sustainability while achieving environmental social responsibility. Therefore, through a detailed analysis of the interactions among these factors and their impacts on visual and environmental outcomes, this study provides crucial theoretical support and practical guidance for related fields.

The second thread encompasses innovative technology and economic factors. The evaluation of media architecture in urban public spaces (AAA1) must consider innovative technology, while economic factors serve as the foundation of media architecture, being central to its operation and management. Innovative technology (AAA6) manifests as both guiding media thought (AA11) and symbolizing technological development (AA12), influencing economic factors (AAA2). Economic factors (AAA2), in turn, reveal urban development (AA3) and economic impacts (AA4), constituting one of the reasons for forming the urban public space image (AAA1). The application of innovative technology in media architecture within urban public spaces not only transforms the physical form of the city but also redefines the interaction between people and space. Simultaneously, economic factors, as the core driving force of urban development, play a crucial role in the planning and construction of urban public spaces. In this process, the convenience brought by technological advancements and the resources generated by economic growth work together, making media architecture in urban public spaces a vital symbol reflecting urban vitality

and competitiveness. Therefore, by examining the interactions between innovative technology and economic factors, this study highlights how these elements contribute to shaping the urban public space image, offering essential theoretical insights and practical guidance for the field.

The third thread encompasses public participation and social inclusion. The guidance for media architecture in urban public spaces (AAA1) must thoroughly consider the impact of social functions and cultural dimensions, shaping better urban public spaces through public participation and social inclusion. Public participation and social inclusion (AAA4) are influenced by public needs (AA6) and content considerations (AA7). Social functions and cultural aspects (AAA7), in response to public participation and social inclusion (AAA4), manifest as promoting cultural international exchanges (AA13), social and cultural roles (AA14), and cultural symbols and history (AA15). Public participation and social inclusion hold significant importance in guiding media architecture within urban public spaces. By fully considering public needs and content considerations, media architecture can achieve multiple goals at the social function and cultural levels, creating more inclusive and culturally rich urban public spaces. This not only helps to enhance the quality of life for citizens but also promotes social harmony and cultural exchange. Consequently, by analyzing the interactions among these factors and their impacts on public participation and social inclusion, this study offers essential theoretical support and practical guidance for the field.

The fourth thread encompasses future trends and the definition of media architecture. The media architecture of urban public space image (AAA1) needs to be guided by future trends, while also requiring in-depth consideration of the existing definitions of media architecture. The definition of media architecture (CCC1) involves aspects such as definition (CC1), propagation (CC2), comparison (CC3), type (CC4), reflections (CC5), attitude (CC6), reason (CC7), and judgment (CC8). Future trends (BBB3), on the other hand, include technology trends (BB8), content trends (BB9), design trends (BB10), styling trends (BB11), and the impact of artificial intelligence (BB12). Therefore, in future research and practice, it is necessary to combine the aforementioned definitions and trends to conduct systematic analysis and forward-thinking reflection on media architecture, thereby promoting its innovative development in urban public spaces.

5.2.4.2 Presentation of Grounded Theory Strategies

Based on the four perspectives identified through Grounded Theory research, the expectations of Chinese people for better public spaces created through media architecture include the following aspects:

- Enhancing the visual and environmental experience in urban public spaces through media architecture design. People expect media architecture to enhance the beauty and attractiveness of public spaces through visual guidance and environmental creation. At the same time, work ideas and environmental management are emphasized to ensure the sustainability of visual effects and environmental quality.

- Guiding media architecture's technological innovation to improve economic benefits in line with public evaluation. The public hopes that media architecture can apply the latest

innovative technologies to enhance the interactivity and modernity of public spaces. Moreover, media architecture should reflect the economic vitality of the city, promote economic development, and bring tangible economic benefits.

- Driving media architecture to embrace public participation and social inclusion to improve space quality. Citizens hope to have more involvement in the design and management of public spaces, making these spaces more inclusive and culturally rich. Media architecture should consider public needs and opinions, promoting social harmony and cultural exchange.

- Focusing on future development trends in media architecture to raise the standards of urban public spaces. The public expects media architecture to keep pace with future technology, content, and design trends, particularly the development of artificial intelligence, to create forward-thinking and innovative public spaces that meet the needs of future urban development.

5.2.4.3 Common and Complementary of Triangulation and Grounded Theory

Both triangulation and grounded theory emphasize the importance of public participation and advocate for enhancing the visual and environmental experience of public spaces through design and technology. Additionally, both theories argue that media architecture should highlight and strengthen the city's image, but they have different focal points. For example, triangulation places greater emphasis on balancing urban imagery with commercial information, while grounded theory is more concerned with technological innovation and future development trends.

By analyzing the two phases of this research, the following comprehensive understanding can be drawn. On the level of public participation and social-cultural expression, triangulation emphasizes enhancing public participation through design and visual effects, whereas grounded theory highlights the desire of the public to be more involved in the design and management process. Therefore, media architecture should be designed and utilized in ways that facilitate public engagement and interaction, thereby reflecting and shaping social relationships and cultural expressions.

Regarding urban imagery and the quality of public spaces, triangulation focuses on strengthening the city's image through high accessibility and compact design, while grounded theory points to enhancing the visual and environmental experience of public spaces. A comprehensive analysis suggests that media architecture should combine high accessibility, compact design, and high-quality visual experiences to improve the city's image, while also focusing on sustainability.

In terms of technological innovation and economic benefits, triangulation emphasizes balancing commercialization with uniqueness through content design, while grounded theory underscores technological innovation to enhance interactivity and economic benefits. The research suggests that media architecture should leverage technological innovation to improve interactivity and economic benefits while maintaining the uniqueness of content design to avoid excessive commercialization.

For future development trends and sustainability, triangulation advocates for design and usage that harmonize with the visual and environmental context, while grounded theory emphasizes keeping up with future technological and design trends. Therefore, in designing media architecture, future technological developments, particularly in artificial intelligence, should be considered, ensuring the sustainability of visual effects and environmental quality.

This comprehensive analysis clarifies that media architecture design and application must balance and integrate multiple aspects such as public participation, urban imagery, technological innovation, and sustainability to enhance the city's image and improve the quality of public spaces.

5.3 Contributions

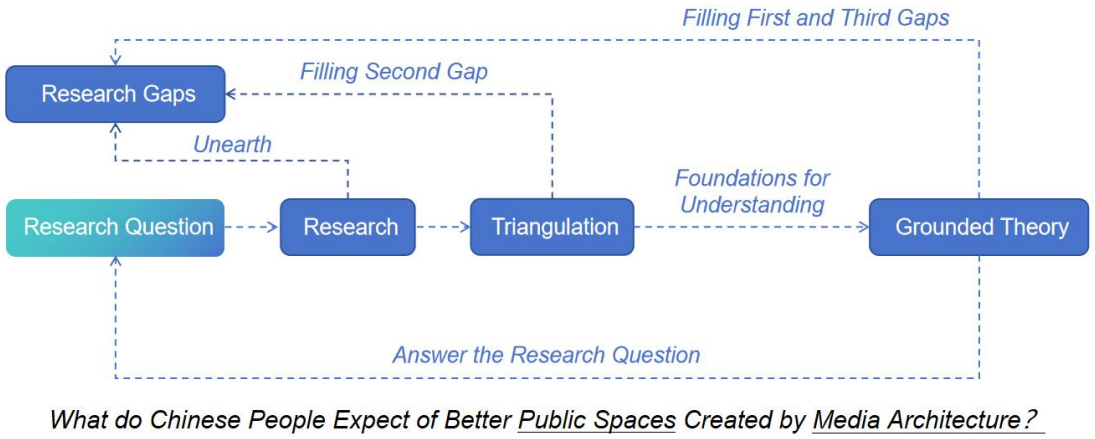


Figure 76. Illustration of Contribution of Research

This thesis makes several contributions to the field of media architecture in urban public space, through a series of research and surveys, trying to answer the research question and fill the research gap. The contribution to research can be further subdivided into academic contribution and practical contribution.

5.3.1 Theoretical Contributions

In this study, a systematic research framework and methodology is adopted to make significant academic contributions by deeply exploring media architecture within urban public spaces. Focusing on five cities in southern China, the research expands the existing knowledge system of media architecture. Through semi-structured interviews, the study reveals the expectations of Chinese citizens regarding media architecture in urban public spaces. The findings suggest that Chinese people expect media architecture to enhance the aesthetic appeal and attractiveness of public spaces, incorporate cutting-edge technology to improve interactivity and modernity, promote economic development and benefits, increase public engagement and cultural inclusiveness, and ensure their sustainability and innovation by aligning with future technological and design trends.

Beyond addressing the primary research questions, this study fills three significant gaps identified in the literature review. The first gap is the lack of systematic methodology in existing research.

This study employs grounded theory as its primary methodology, guided by postpositivism, and follows a rigorous coding process. Additionally, the pilot research utilizes phenomenology, narratology, and case studies during the preliminary stages, aiming to explore the research issues surrounding media architecture in urban public spaces from a methodological perspective.

The second gap addressed is the need for interdisciplinary and humanistic perspectives. This research integrates various approaches from urban studies, media studies, and sociology to explore media architecture in Chinese urban public spaces. The study also bridges the gap between positivism and interpretivism under the guidance of postpositivism, countering the single-dimensional approach of previous studies. This multidisciplinary and multi-philosophical approach ensures a comprehensive and detailed investigation of media architecture.

The third gap pertains to exploring China's unique characteristics as a research subject. The study starts with examining over 15 Chinese cities, selecting five key cities for a more focused analysis. By employing various research methods at different levels, the study investigates media architecture in the urban public spaces of these Chinese cities, contributing to an understanding of their unique contexts.

Moreover, this research develops new theories and models related to media architecture. By applying grounded theory, the study constructs a theoretical framework on how media architecture influences the image of urban public spaces. The research also employs postpositivism as its philosophical foundation, utilizing both positivist and interpretivist approaches, thus enhancing the depth and breadth of the research model from both methodological and paradigmatic perspectives.

5.3.2 Contributions to Knowledge

This study responds to the research framework's call for contributions to knowledge, demonstrating significant advancements concerning media architecture across foundational theory, disciplinary domains, and specialized fields.

5.3.2.1 Spatial Extension of Media Theory

The primary contribution of this research to Marshall McLuhan's media theory lies in its extension of core concepts and their theoretical deepening within the context of Chinese cities. By shifting the perspective of media studies from the macro-level philosophy of technology down to concrete urban spatial practices, and employing interdisciplinary methodologies (spatial analysis, sociology, user research), the study constructs a more operational theoretical framework. This framework not only validates McLuhan's core proposition that "the medium shapes the environment" (McLuhan, 1964, p. 10) but also, through Chinese case studies, reveals the complexities of this theory within the tensions of globalization and localization, offering a new paradigm for applying media theory to urban research in the digital age.

McLuhan's dictum "The Medium is the Message" (McLuhan, 1964, p. 10) emphasizes how the form of media itself shapes social cognition and behavior. This study applies this theory to the realm of urban public space and architecture, proposing "media architecture" as a dynamic medium. Its function extends beyond mere information transmission to actively reconfigure spatial

function and meaning through technological means (e.g., digital screens, interactive design). Case studies like Guangzhou's Beijing Road and Shenzhen's Huaqiangbei demonstrate how media architecture shapes city images through visual symbols and dynamic content, substantiating McLuhan's view that "media alter environmental perception" (McLuhan, 1964, p. 12). The study highlights how the "dynamism" of media architecture transcends the limitations of traditional static buildings, extending McLuhan's concept of "media as extensions of man" into "architecture as extensions of sensory experience," thereby imbuing space with novel attributes of social interaction.

Furthermore, McLuhan viewed technology as an "unconscious extension" of human society (McLuhan, 1964, p. 274). This study further positions media architecture as a composite medium encompassing technology, culture, and social interaction. Its innovations in "media materiality," achieved through digital screens and interactive technologies, resonate with McLuhan's categorization of "cool" and "hot" media (McLuhan, 1964, p. 54), while placing greater emphasis on technology's role in facilitating public participation. Defined as a "medium for urban identity," media architecture transmits local culture through visual symbols, deepening McLuhan's proposition concerning "media shaping collective identity" (McLuhan, 1964, p. 115). Concurrently, the study notes the potential for media architecture to exacerbate the contradiction between "technological utopianism" and "privacy deprivation," thereby extending McLuhan's reflection on technology's dual nature.

The research also embodies a critical development of McLuhan's theory. Firstly, this critical stance manifests in its emphasis on the dynamism of media theory: whereas McLuhan focused on the "instantaneous impact" of media (McLuhan, 1964, p. 15), this study argues that the meaning of media architecture emerges gradually through long-term social practices, shaped by factors like policy support and cultural adaptation, thus underscoring the mediating role of "temporality" on media effects. Secondly, it reveals that Chinese media architecture prioritizes "collectivist narratives" (e.g., patriotic-themed light shows) over McLuhan's focus on "individual sensory extension" (McLuhan, 1964, p. 16), highlighting the differential manifestations of media theory across distinct cultural contexts.

5.3.2.2 DeepSeek of the Media City

Through its in-depth investigation of media architecture in Chinese cities, this study offers significant theoretical, methodological, and practical extensions to Scott McQuire's "Media City" thesis (McQuire, 2016) .

First, it expands the theoretical framework of "media-city" interaction. While McQuire posits a deep inter-embeddedness of media technology and urban space, emphasizing media's infrastructural role (McQuire, 2016, p. 32), this study empirically validates this theory's applicability in a non-Western context using Chinese cases (e.g., Guangzhou's Beijing Road, Shenzhen's Huaqiangbei). It reveals the unique functions of media architecture in Chinese cities: acting not only as a technological carrier but also as a vehicle for transmitting local cultural symbols, thereby reinforcing urban place identity. Within China's rapid urbanization, media architecture is deployed to address modernization challenges, exemplifying the dynamic

adaptation of technology to societal needs.

Second, whereas McQuire focuses on media technology's restructuring of the public sphere (McQuire, 2016, p. 38), this study, through Chinese practices, supplements the concept with diverse forms of "publicness." Media architecture creates new participatory public experiences through digital interaction, moving beyond the traditional "spectator-performer" model towards a "co-creative publicness." Simultaneously, media architecture demonstrates significant efficacy in enhancing urban cultural inclusivity. In multicultural cities like Shenzhen and Chengdu, features such as multilingual interfaces and localized content design foster cultural integration among diverse groups, deepening McQuire's discussion on "division and connection" (McQuire, 2016, p. 32).

Third, the study addresses a limitation in McQuire's theory. McQuire tends to emphasize technology's unidirectional shaping of the city (McQuire, 2016, p. 32); this research, however, underscores bidirectional interaction. Media architecture is conceptualized not merely as a technological product but as a vessel for popular cultural practice, highlighting the potential for "user-generated space." Analysis of Chinese cases reveals that media city theory must account for cultural specificity. For instance, the electronic screen advertisements in Shenzhen's Huaqiangbei embody global consumer culture while embedding characteristics of the local grassroots economy, manifesting the tension between globalization and localization.

5.3.2.3 The Global South Turn in the Media Architecture Biennale (MAB)

This study, through Chinese case analysis, deepens the theoretical understanding of media architecture's dual functions presented by the Media Architecture Biennale (MAB), contributing significantly to transcending the boundaries between traditional architecture and media art/design, and to elucidating the dialectical relationship between technology and socio-cultural expression. The research emphasizes media architecture as a "dynamic communication system" requiring the integration of design, technology, and socio-cultural expression, echoing MAB's definition that media architecture must "move beyond traditional architecture and media art/design" (Jenek et al., 2021). It further proposes that the core value of media architecture lies in reshaping the interactive logic and cultural identity of urban public spaces. Examples like "participatory design" promoting social inclusivity resonate with the theoretical orientations within MAB categories such as "Equitable and Sustainable Media Architecture" and "Participatory Media Architecture and Infrastructures."

Moreover, the study advocates for balancing "technological innovation" and "social needs" in media architecture. This involves utilizing sustainable technologies (e.g., energy-efficient LEDs) for cultural expression while remaining vigilant about technology-induced digital divides. This perspective complements MAB's critical reflection on "Beyond Commercial Media Architecture," stressing that media architecture should avoid becoming mere technological spectacle and must instead embrace socio-ethical responsibilities. By developing a "media-space-user" interaction model (illustrated by the Guangzhou Beijing Road case), the research reveals how media architecture reshapes urban perception through visual symbols (e.g., projection mapping), providing a combined quantitative and qualitative analytical approach for MAB's "Spatial Media

Art" category. Through user interviews and designer surveys, the study identifies localized concepts like "cultural translation" (e.g., panda-themed lighting in Chengdu's Chunxi Road) and "technological empowerment," infusing situated knowledge into MAB categories such as "Animated Media Architecture" and "Future Trends and Prototypes," thereby propelling the theory from a Western-centric perspective towards multicultural pluralism. Analysis of media architecture's impact on urban structure (e.g., crowd guidance via electronic billboards in Shenzhen's Huaqiangbei) supplements gaps in MAB's research on spatial mobility within the "Transmedial Media Architecture" category.

In summary, this research makes substantial contributions to the field of media architecture studies. By employing Chinese cases, it demonstrates the necessity for media architecture to negotiate a balance between "global technological trends" and "local cultural needs." This opens avenues for future global theoretical dialogue centred on Chinese experiences while simultaneously highlighting the unique significance of cultural factors in media architecture research. Crucially, this work addresses a significant gap in media architecture research within China. It is also noteworthy that the Media Architecture Biennale (MAB) 2025 will be held in Bangkok, Thailand, marking MAB's renewed focus on Asia following the 2018 Beijing edition. This development holds considerable importance for amplifying Global South narratives and the technological discourses of cities in the developing world.

The concept of the "Global South" centres on socio-economic structures and positions within the global power/economic system, rather than mere geography. It represents a critical perspective and collective identity challenging the Western-dominated global order, legacies of colonialism, and developmental imbalances (Dados & Connell, 2012). Both China and Thailand are recognized as significant members of the Global South. Focusing on media architecture offers a vital pathway, through urban and architectural practice, to counter the marginalization of developing nations in global technological discourse.

5.3.3 Practical Implications

On the practical side, this study contributes to the design, evaluation, and guidance of media architecture in urban public spaces in China. Firstly, it identifies future development directions for media architecture in these spaces. Given China's status as the largest producer and user of media architectural equipment globally, the findings provide valuable references for major cities in other Asian countries and beyond. The study offers insights into the future design of media architecture in urban public spaces.

Secondly, through an in-depth exploration of social aspects and combined with spatial triad analysis and space syntax, the study concludes that media architecture should align with the overall image of the city, thus proposing corresponding operational and design strategies. Therefore, the criteria for evaluating media architecture in urban public spaces should be adaptable rather than fixed, adjusting to the planned urban image of different cities.

Finally, the study suggests that future guidelines for urban public spaces should adhere to the theoretical framework on how media architecture influences the image of these spaces, considering the relationships between different codes. This provides a practical and operable

theoretical reference for urban designers, media architecture designers, media architecture managers, and interaction designers.

5.3.4 Summary

This section has briefly reviewed the contributions of the research. Under the research paradigm of post-positivism, the original theoretical framework of media architecture is constructed through rooted theory, which fills in the gaps and depths at the levels of methodology, research perspectives, and research scope. Moreover, the research on the Chinese context fills the gap of non-Western perspectives, through which it is found that Chinese citizens' 'public expectation' of media architecture as a platform is significantly different from the individual interaction preference in the European and American literature, a finding that challenges the Western-centred theoretical presuppositions and promotes the public-cultural turn in the study of media architecture.

The next phase will compare the findings with existing literature, analyse the study's innovations and empirical results, and highlight the differences between this research and established theories. The discussion will focus on how the results support or challenge existing views and the implications of these findings. By comparing theories and models, the study will further explore the potential theoretical applications and extensions of the research findings. Additionally, the practical implications of the research will be explored, particularly regarding its impact on policy, industry practices, and societal development. Finally, potential directions for future research will be proposed, emphasizing the foundational role this study plays in guiding future work.

5.4 Integration

This section combines literature on antecedents and the research methodology to compare the definitions and contributions of this study with relevant literature. Through a comparison of the media architecture definition in this research against those of MAB and other scholars (Chapter 2), and an analysis of related concepts and definitions, this chapter aims to substantiate the unique contributions and value of the present research. The definitions of media architecture are listed and compared in order to make the research accessible to a wider field of knowledge.

Based on the above interviews (CC1), media architecture can be defined as an integrated interactive platform that incorporates architectural design, technology, and art. It is a form of architecture that transforms a building’s surface into a dynamic, changeable and interactive interface with users by integrating multimedia technologies such as lights, screens, sounds and sensors. Media architecture is more than just the physical structure of a building; it focuses on enhancing a building’s expressive power and information dissemination capacity through digital technology and multimedia content, enabling it to provide a richer visual and sensory experience and, to a certain extent, breaking down the boundaries among the building, the environment and people.

In addition to the definition of media architecture, the elements that influence media architecture are also explored from the side. Then the definition of media architecture is discussed from the perspectives of propagation, comparison, type, reflections, attitude, reason, and judgement (CC2 -

CC8). In this chapter, further assertions will be made by centreing on the definition of media architecture.

5.4.1 Contributions to the Definition of Media Architecture in this Research

This study undertakes an in-depth exploration of media architecture and advances a definition that positions it as an interactive platform integrating architectural design, technology, and art. Specifically, media architecture is conceptualized as a form of architecture that transforms building surfaces into dynamic, adaptable, and interactive interfaces with users by incorporating multimedia technologies such as lighting, screens, sound, and sensors. This definition not only addresses the physical structure of buildings but also underscores the role of digital media in redefining the interaction between architecture and its occupants. It emphasizes the enhancement of a building's expressive power and information dissemination capacity through digital technology and multimedia content, thereby offering a richer visual and sensory experience. Consequently, it effectively dissolves the boundaries between the building, its environment, and the people interacting with it. To elaborate further, the study's definition of media architecture underscores its comprehensive and interactive nature. Media architecture is not merely a display platform for building surfaces; rather, it constitutes an interactive space where technology and art converge to enhance user experience, which aligns with Hespanhol's view. Meanwhile, this study further accentuates the interaction between buildings and users to provide a novel perspective on the role of media architecture in the digital age (Hespanhol, 2017, p.54). In this context, the integration of interactive elements becomes a pivotal aspect, transforming passive architectural forms into active participants in the urban environment, thereby reshaping how spaces are perceived and utilized.

In addition, the study's definition places particular emphasis on multi-sensory experiences and the dissolution of traditional boundaries. By integrating various multimedia technologies, media architecture enhances not only the visual impact of buildings but also transcends the barriers between the building, the environment, and its users through sensory interaction. This boundary dissolution is crucial in creating immersive environments that engage users on multiple levels, fostering a deeper connection between the individual and the architectural space. This emphasis on multi-sensory experiences and the enhancement of architectural expression through digital technology distinguishes this study's definition from others, offering valuable insights for future design practices and research.

Besides, the study highlights the critical role of enhancing expressive power and information dissemination capabilities. While this aspect is also evident in the 2023 Media Architecture Biennale (MAB) definition, this study places it at the very core of its conceptualization to further explore how media architecture can enrich narrative functions within urban spaces and foster public engagement. By doing so, it shifts the focus from architecture as a static entity to one that actively participates in the social and cultural narratives of a city. This focus on the expressive and communicative functions of architecture makes the study's definition notably distinct in both academic and practical contexts.

Lastly, in this study, the conceptual boundaries and applications of media architecture are

expanded by addressing the distinctions between media architecture and media facades. Then simple commercial or public communication uses are extended to investigate its potential in facilitating social interaction and shaping urban spaces. Through this comprehensive examination, the study not only contributes new insights to the academic discourse on media architecture but also provides practical guidance that is both innovative and applicable. The implications of this expanded definition are significant, suggesting new pathways for the integration of technology in architecture that are responsive not only to aesthetic and functional demands but also to the evolving needs of urban societies.

5.4.2 Comparison to Others Definitions

This study’s definition of media architecture shares foundational commonalities with the Media Architecture Biennale (MAB) frameworks while establishing critical distinctions. Both acknowledge media architecture as a technologically mediated phenomenon that integrates digital systems (sensors, displays, data interfaces) into the built environment to enable novel functionalities beyond conventional architecture. Like MAB’ s 2023 definition, this research recognizes its capacity to foster civic engagement and transcend purely commercial applications. However, the core divergence lies in their conceptual anchors: this study posits an ontological reconfiguration of architecture itself — positioning it as an interactive platform where technology-art-architecture synthesis transforms building surfaces into dynamic interfaces. This framework prioritizes architectural agency (expression enhancement, narrative capacity) and outcomes (boundary dissolution, multi-sensory immersion) as inherent objectives, whereas MAB treats these as contextual possibilities rather than definitional imperatives. Consequently, while MAB describes what media architecture includes, this research defines what it fundamentally is: a transformative spatial practice centered on human-building symbiosis.

This conceptualization makes three pivotal contributions to media architecture scholarship and presents individual insights derived from grounded theory research conducted in China. This research deepens the core essence and value proposition of media architecture. By explicitly defining media architecture as an "Interactive platform" that converges architecture, technology, and art, it transcends MAB's characterization as a "technology-integrated layer" or "multifunctional system," capturing its fundamental nature as a novel medium for spatial relationships. Simultaneously, the research positions "multi-sensory experience" and "boundary dissolution" at its conceptual core. It not only acknowledges multi-sensory dimensions but intrinsically integrates them with creating immersive environments, deepening human-space connections, and dissolving physical/perceptual boundaries. These elements serve as both key mechanisms and direct outcomes for achieving core values - expression, dissemination, and interaction.

Furthermore, the research provides an integrated theoretical perspective. Its definition organically synthesizes multiple dimensions: architecture (space, surface, expression), digital technology (interactivity, dynamism), artistic elements (aesthetics, narrative), and human perception (multi-sensory engagement, experience, boundary dissolution). This integration forms a more coherent and robust theoretical framework. In contrast, MAB23's definition primarily catalogs technical components and enumerates application scenarios.

Ultimately, this research's definition does not negate but significantly refines and focuses MAB's conceptualizations. It identifies media architecture's core distinction from other technology-integrated applications: fundamentally representing an evolutionary form of architectural ontology in the digital age. Through interactive technologies and multi-sensory design, architecture transforms into a dynamic platform and experiential environment characterized by potent expressive power, communicative capacity, and active participation in socio-spatial construction.

Beyond the comparison with the Media Architecture Biennale (MAB) definition, prior research also reveals scholars' multi-dimensional exploration of the concept of media architecture. While existing definitions differ in their emphasis and scope, their core foundations exhibit significant consensus: Media architecture is fundamentally the integration of technology and architecture (Berber et al., 2023; Savić, 2023), constituting the most essential common ground; Relevant definitions generally reject the notion of architecture as static and unchanging (Jenek et al., 2021; Venetsianou, 2022; Semenyuk et al., 2022), emphasizing its aim to create experiences distinct from traditional architecture; Media architecture is widely regarded as a key vehicle for information dissemination and narrative within the urban environment (Chang et al., 2019; Semenyuk et al., 2022; Zhang, 2023; Ferrari & de Souza, 2023).

Despite sharing these core commonalities, this study's definition of media architecture possesses distinctiveness in its focus and connotation. This study places the concept of an "Interactive platform" at the core of its definition, strongly emphasizing the central role of direct interaction between users and the architectural interface, and positioning this interaction as the key mechanism for achieving boundary dissolution. While interactivity is widely discussed in existing research (Jenek et al., 2021; Berber et al., 2023), and scholars such as Hespanhol (2017) and Colangelo (2021) have conducted more systematic investigations into interaction modes (e.g., Shadow Playing, Remote Control, Automatic Gate, etc.), providing detailed classification frameworks; these studies often treat interactivity as one of the outcomes or attributes of media architecture, rather than positioning it as the core starting point and foundational construct of the definition, as this study does. Another core contribution of this study lies in its systematic explanation of how modern technology creates immersive experiences and dissolves traditional boundaries through Sensory Fusion. Although sensory experiences (particularly visual ones) are mentioned in related literature (Berber et al., 2023), few studies tightly integrate "boundary dissolution" with them and elevate this integration to a core pillar of the definition. For instance, Jenek et al. (2021) propose "embodying physical space," and Chang et al. (2019) discuss the "portal between the physical and virtual worlds." While these expressions touch upon boundary issues, this study's exploration of their underlying mechanisms and systemic impacts is more in-depth and systematic.

5.5 Criticization

While media architecture is widely praised for its capacity to redefine public space functions and foster cultural inclusivity—and while this study maintains a generally optimistic view—we must nevertheless acknowledge certain critical voices that have emerged during the research process. At

the leaning part stage of this research, this section attempts to add some critical perspectives of this research.

Simmel's analysis of modern urban life as a realm of sensory overstimulation and psychological detachment suggests that city dwellers develop a defensive "blasé attitude" to cope with sensory overload (Simmel, 1900). This risks reducing media architecture to a mere backdrop for passive consumption rather than active engagement. The dazzling digital facades along Guangzhou's Beijing Road (discussed in Chapter Four) epitomize what Simmel termed the intensified nervous stimulation characteristic of capitalist modernity. However, such visual hyperstimulation may lead to dual alienation—both physical and communal. During the interview, a long-term resident in Chengdu's Chunxi Road media district reported feeling like "tourists in their own hometown," indicating that while media architecture enhances urban vitality, it may simultaneously erode place attachment.

Concurrently, certain scholarly critiques dismiss contemporary architecture as "junkspace"—characterized by stylistic pastiche and corporate banality—a critique that finds validation in some media architecture projects (Koolhaas, 2002). The generic LED screens and repetitive commercial loops at Changsha's Wuyi Square risk degrading public space into what Koolhaas calls "junkspace" devoid of civic significance. Yet these critiques often overlook media architecture's subversive potential: some local artists have reprogrammed digital facades with community-generated content, transforming "junkspace" into platforms for counter-hegemonic expression.

A balanced assessment must recognize media architecture's dual role: it serves as both an instrument of neoliberal urbanization and a site for creative resistance. As media architecture proliferates across Chinese cities, its socio-political and cultural significance will depend not merely on technological novelty, but more crucially on its ability to forge meaningful connections with local places, historical contexts, and lived experiences amidst the spectacle of urban transformation.

5.6 Chapter Summary

This chapter provides a comprehensive overview of the research methodology and its contributions to media architecture in urban public spaces. Starting with the triangulation approach, the study demonstrates how combining different data sources and methods enhance the credibility and validity of research findings. By employing Methodological triangulation, six research methods are utilized to gather data from both qualitative and quantitative perspectives, ensuring a thorough understanding of media architecture’s role in Chinese urban spaces. The chapter also discussed the contributions of the study, which are categorized into academic and practical implications, aiming to address existing research gaps and offer valuable insights for both scholars and practitioners. Finally, by comparing the research findings with existing definitions though critic thinking, the chapter highlights the unique value and contributions of this study, setting the stage for further discussions in subsequent chapters.

CHAPTER SIX

CONCLUSION

6.1 Research Summary

This study focuses on five cities in southern China, systematically examining media architecture within urban public spaces, and makes significant contributions both academically and practically. It expands the existing knowledge base by addressing major gaps in methodology and interdisciplinary perspectives, providing an in-depth analysis of media architecture in urban public spaces.

The research delves into the role of media architecture in Chinese urban public spaces, and then employs a systematic research framework and methodology to uncover the potential of media architecture in enhancing public engagement, shaping urban identity, and fostering socio-cultural exchanges. The findings suggest that media architecture serves as both a powerful tool for displaying urban identity and a critical mechanism for addressing the challenges of urban modernization. By integrating perspectives from media studies, urban studies, and sociology, this research constructs a theoretical framework for media architecture in urban public spaces and empirically validates its application across different urban contexts.

6.2 Contribution and Implication to the Professional Field

This study makes substantial contributions to architecture, urban planning and media studies by systematically examining media architecture's dual role as physical infrastructure and communication medium in urban spaces. It provides forward-looking guidance for urban development, proposing innovative approaches to integrate media architecture in ways that address evolving societal needs while offering city planners and designers a framework for future-responsive public spaces. The research establishes adaptable evaluation criteria for media architecture's success based on its urban imagery impact and public interaction potential, enabling culturally and economically contextualized implementations across different cities. For practitioners, it delivers concrete design strategies emphasizing visual impact, public engagement and socio-cultural relevance to better integrate these structures within urban fabrics. Crucially, the study advances professional practice by demonstrating how media architecture merges architectural innovation with digital communication at the technology-media-architecture intersection. These insights empower designers to transcend conventional boundaries through interactive technologies that enhance symbolic meaning in urban environments. Ultimately, the work positions media architecture as a dynamic driver of urban digital transformation, establishing foundations for projects that will shape future cities.

6.3 Limitations

Despite its contributions to understanding media architecture’s role in urban spaces, this study has several limitations. The research’s exclusive focus on Chinese urban contexts restricts the generalizability of its findings due to China’s unique socio-cultural, economic, and political conditions, necessitating further validation in other global settings. Methodologically, while semi-structured interviews, spatial analysis, and qualitative approaches yielded valuable insights,

the reliance on these techniques limits statistical robustness, and time constraints prevented deeper investigation into factors like public psychological acceptance and long-term social impacts. Although grounded theory guided data analysis, the coding process inherently involved researcher subjectivity, potentially affecting conceptual accuracy and restricting the model's applicability beyond the studied contexts. Additionally, since part of the research was conducted in non-English languages, translation during final presentation may have introduced unintended distortions despite rigorous efforts to maintain fidelity. These limitations underscore the need for broader empirical validation and methodological diversification in future studies.

6.4 Recommendations for Future Research

Based on the limitations identified in this study, future research can further expand and deepen in several directions to enhance the generalizability and practical value of the findings.

6.4.1 Recommendations

Firstly, future research should expand the geographic and cultural scope. Studies should include urban public spaces from diverse cultural, social, and economic backgrounds to validate and extend the theoretical framework and practical guidelines proposed in this research. By testing the impact of media architecture in various cultural contexts, research can provide more comprehensive and globally applicable insights, thereby enhancing the external validity of the findings.

Secondly, future research should significantly emphasize quantitative studies and data validation. Building on the qualitative methods such as semi-structured interviews and spatial analysis employed in this study, future work can utilize large-scale surveys, statistical analysis, and data modeling to more accurately assess the long-term effects of media architecture on public psychology, social behavior, and urban development. The use of more rigorous statistical methods and cross-validation with multiple data sources will help improve the significance, reliability, and reproducibility of the research outcomes.

Thirdly, future research should pay essential attention to further development and validation of the grounded theory model. Researchers should test the model's applicability in different urban environments and cultural contexts to verify its broader validity. Additionally, applying the model to various types of media architecture projects can help identify its scope and limitations. Future studies should also consider incorporating more participants and variables to enhance the model's complexity and predictive power.

Fourthly, future research should deepen interdisciplinary integration. Although this study successfully integrated perspectives from urban studies, media studies, and sociology, future research can further harmonize differences between disciplines at both the methodological and theoretical levels, ensuring consistency and coherence in the theoretical models developed across disciplines.

Fifthly, future research should explore the uncertainties of technological development. Given the rapid and unpredictable nature of technological advancements, research can utilize scenario

analysis and technological forecasting to explore the potential impacts of different technological trajectories on the future role of media architecture. This approach will provide a more comprehensive understanding of the possible futures of media architecture in urban environments and offer more flexible and adaptive design and management recommendations.

Lastly, addressing language and cultural differences should be a priority in future cross-linguistic and cross-cultural research. Researchers can minimize the risks of information loss and misinterpretation by employing more meticulous translation and cultural adaptation strategies. Bilingual analysis and review by cultural experts will also help ensure the accuracy and cultural relevance of the research findings.

In summary, while this study acknowledges certain limitations, these also present clear directions and opportunities for future research. By expanding geographic scope, strengthening quantitative research, deepening interdisciplinary integration, and exploring technological uncertainties, future research will be able to more comprehensively understand and harness the potential of media architecture, so that new insights and solutions can be provided for the sustainable development and cultural expression of cities worldwide.

6.4.2 Future Works

This study's findings are expected to advance along two key trajectories.

First, they will facilitate scholarly dissemination through transforming Chapters 2, 4, 5 and 6 into a bilingual Chinese-English monograph, supported by targeted funding. This publication will elucidate China's media architecture evolution, its socio-cultural drivers, and public reception while providing contextual knowledge for tourism, urban governance and design professionals. It will additionally serve as an analytical framework for examining China's urbanization patterns, city branding strategies and creative urban development through this architectural phenomenon.

Second, the research will inform pedagogical development through curriculum integration. In partnership with academic institutions, the findings will be adapted into specialized courses for Architecture, Digital Arts and Design programs. These courses will cultivate students' critical understanding of media architecture as an interdisciplinary nexus of urbanism, built environment and digital media, equipping them with applicable knowledge for both academic inquiry and professional practice. The pedagogical translation aims to bridge theoretical insights with practical competencies in analyzing and engaging with media-saturated urban environments.

6.5 Conclusion

This research originated from the observation of a growing phenomenon in urban public spaces: an increasing number of screens were covering the facades of these spaces, digitally transforming the surfaces of buildings and constantly conveying information. In this process, buildings were understood as media, shaping public perception and the nature of urban public spaces. This type of architecture can broadly be categorized as media architecture, representing an emerging architectural phenomenon centred on the concept of media. This study aims to explore the role of media architecture in enhancing interaction and visual performance in public spaces, and it

focuses on the manifestation of media architecture in Chinese urban public spaces. The study seeks to uncover what the public expects from media architecture in these contexts.

The research employed a mixed-methods approach within a post-positivist paradigm, utilizing grounded theory as its primary methodology. A structured research framework was developed, linking positivism and interpretivism across various stages of the study. The saturation of the research was tested through paradigmatic and methodological lenses during the final stages of data collection. The findings address the research gaps identified in the literature review and respond to the research question.

The research design began with an analysis of media content and the image of the city across 15 Chinese cities and classified media architecture in urban public spaces. The study then focused on five representative southern cities, using spatial triad analysis and space syntax for in-depth analysis and computation. After completing the positivist phase, the research transitioned to an interpretivist approach. The researcher conducted field studies in these cities in recent years, observing the experiences of individuals in these public spaces. The interpretivist phase began with semi-structured interviews with these individuals, employing grounded theory as the methodology, and conducting three rounds of grounded theory research. Each round of interviews had a different focus, with slight adjustments made to the questions after each round. The interviews were supplemented with questionnaires and analytic hierarchy process methods. The three rounds of interviews targeted public space users, designers, and expert reviewers in Chinese cities. The grounded theory process resulted in 11 open codes and 3 rigorous coding tables, with the imagery of urban public spaces serving as the axial coding theme. Four main threads were identified through the selection and construction of relationships among these codes, which influenced and guided the future development trends of media architecture in urban public spaces. The study delved into the definition of media architecture, discussed its role in guiding urban public spaces, and provided a more detailed classification based on types and comparisons.

Following two rounds of triangulation involving methodology and paradigm, the study established research saturation and linked the findings of positivism and interpretivism, particularly those derived from the grounded theory. The main contributions of this dissertation include revealing that Chinese people expect media architecture to enhance the aesthetic appeal and attractiveness of public spaces, integrate cutting-edge technologies, increase interactivity and modernity, promote economic growth and benefits, and enhance public engagement and cultural inclusivity. Additionally, media architecture should adapt to future technological and design trends to ensure sustainability and innovation in public spaces. The research also filled methodological and humanistic gaps in media architecture studies and highlighted the need for a broader perspective on the research subjects.

This research adhered to relevant ethical guidelines and provided significant insights and practical contributions to the fields of urban planning, architectural design, and media studies. It advanced the understanding of the relationship between physical entities and communication media in urban public spaces and laid the foundation for the digital transformation of cities and the future integration of architectural innovation with digitalization.

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APPENDICES

Appendix 1. Disclaimer

This questionnaire has been designed as a research tool for the doctoral project of Mr. Ruan Haoyi, a Doctoral candidate in Art and Design, under the joint program between the Guangzhou Academy of Fine Arts and the University of Wales Trinity Saint David. The research project, titled *"Irresistible Media City Nightlife: The Role of Media Architecture in Shaping Urban Spaces and Visual Environmental Imagination in China,"* aims to explore how media architecture, as an increasingly common urban phenomenon, affects participants' impressions of sites. To date, the researcher has conducted field studies in over ten major cities in China, identifying several research samples. This questionnaire is part of a further investigation, and your participation is greatly appreciated.

This study is a voluntary and online-based research activity, lasting approximately 30 minutes. It will be conducted in Mandarin, and interviews will later be translated into English. Research methods include surveys and interviews, with audio recordings made for documentation. Before any interviews or other data collection methods, participants will be asked to answer questions and sign bilingual interview notes. The interview may be paused or questioned at any time. No animal or environmental harm and no medical or biological modifications will be involved in the interview process. Respondents will be randomly recruited based on interviewer-defined criteria, and no specific groups, such as prisoners or minors, are targeted. All participants will be anonymously recruited, and no privacy-related issues will be addressed in the questionnaire or interview. Participants will not receive any compensation or financial benefits from this research. The intellectual property of the research results belongs to the researcher, and participants will not receive royalties or financial support. Participants will be informed that the research process will not cause any harm, including risks to personal health and safety, physical injury, mental distress, accusations of harm or misconduct, or conflicts of interest.

The interview primarily combines a questionnaire with an interview format. It is mainly used to collect basic information and structured questions from the interviewees. You have the right to omit any questions you do not wish to answer. If you cannot use a computer, the questionnaire can be completed with the assistance of the interviewer. The interview will be a semi-structured and open-ended conversation lasting about 30 minutes.

During the interview, the interviewer will record and audio tape the entire session, with a transcript created afterward. It is important to emphasize that the research datas will be strictly confidential. If disclosed, the data will be anonymized using research codes, ensuring your data cannot be identified. Upon completion of your participation, you will be provided with a summary of the research in a manner appropriate to the

study, including but not limited to reports, doctoral theses, and related publications. This research complies with the *Provisions of the Scientific Ethics Committee of the Guangzhou Academy of Fine Arts (Trial)* and the *University of Wales Trinity Saint David Research Data Retention Guidelines.* Interviewers voluntarily participate in this study, and neither the researcher nor the university will gain any financial or other benefits from this participation. This study will not intentionally mislead participants or conceal the specific objectives of the research, either partially or entirely. All collected data will exclude sensitive information as defined by the 2016 General Data Protection Regulation (GDPR) and the 2018 Data Protection Act (DPA). Research data will be stored on the researcher's personal computers, mobile devices, and cloud storage, and will be protected by the researcher. These data will not be stored in the research data repository at the University of Wales Trinity Saint David (see https://researchdata.uwtsd.ac.uk/).

This study was ethically reviewed on 30 November 2023 by the Postgrad Research Department of UWTSD.

This informed consent form and all interview information will only be accessible to the research team. If you agree to the above terms, please provide your electronic signature and the date in the blank space below.

This signature is solely for the purpose of acknowledging your consent for this study.

Appendix 2. Questionnaire and Interview Questions in Round A

Round A

A. Basic Information

1. Please tell me your age as follows
   - 18~35
   - 35~60
   - 60+

2. What is your occupation type?
   -Agriculture, forestry, animal husbandry, fishing
   -Mining
   -Manufacturing
   -Electricity, heat, gas and water production and supply
   -Construction
   -Wholesale and retail trade
   -Transportation, storage and postal services
   -Accommodation and catering
   -Information transmission, software and information technology services
   -Finance
   -Real estate
   -Rental and business services
   -Scientific research and technical services
   -Water, Environment and Public Facilities Management
   -Residential services, repairs and other services
   -Education
   -Health and social work
   -Culture, sports and recreation
   -Public administration, social security and social organizations
   -International organisations

3. Your level of education is:
   -Primary education: Primary school graduation
   -Junior secondary education: Junior secondary school graduation
   -High school education: High school graduation
   -Secondary vocational education: graduation from vocational high school or secondary professional school
   -University education: college graduation
   -Undergraduate education: graduation from a bachelor's degree
   -Postgraduate education: graduation from a master's or doctoral program

4. In the past year, in which city did you mainly live:
-(please specify)

5. The city discussed in this study and experienced by the researcher is
- Guangzhou (Beijing Road)
- Shenzhen (Huaqiang North)
- Changsha (Wuyi Square)
- Wuhan (Jianghan Road)
- Chengdu (Chunxi Road)

B. Questionnaire

1. Have you visited a media building in the past year?
- Yes
- No

2. What is the main reason for your visit to the Media Building? (multiple answers possible)
- To visit an exhibition or event
- To admire architectural design
- For work or meetings
- Other (please specify)

3. What aspects of media architecture were most interesting to you during your visit? (multiple answers possible)
- The exterior design of the building
- The layout of the interior spaces
- Air quality and ventilation
- Lighting and sound effects
- Interactive display technology
- Choice of colours and materials
- Other (please specify)

4. Which aspects of the media building were you least satisfied with during your visit? (multiple answers possible)
- Air quality and ventilation
- Noise or environmental pollution
- Poor maintenance of facilities
- Unattractive display content
- Difficulty of access and parking
- Other (please specify)

5. What qualities do you think a media building should have? (multiple answers possible)
- Aesthetic value

- Interactive experience
- Environmental friendliness and sustainability
- Technological advancement
- Social responsibility
- Other (please specify)

6. Do you think that the design of media buildings should take into account the surrounding environment?
- Should be considered
- Not relevant
- Should not consider

7. Do you think that the design of media buildings should take into account the local cultural and historical context?
- Should consider
- Not relevant
- Should not be considered

8. Do you think that the design approach to media architecture enhances the overall rating of the building?
- Very much
- Yes
- Fairly
- No
- Very much not

9. Do you feel that the design of the media building enhances the presentation of the media format?
- Very much so
- Yes
- Fair
- No
- Very much not

10. Do you feel that the design of the media building is appropriate to the form of media it carries?
- Completely
- Generally
- Not really
- Not at all

11. Do you think that the design of the media building has artistic value?
- Very much
- Yes
- Fair

- No
- Not at all

12. Do you think that the design of the media building has a practical value?
    - Very
    - Yes
    - Fair
    - No
    - Not at all

13. Do you feel that the design of the media building has practical value?
    - Very much so
    - Yes
    - Fair
    - No
    - Not at all

14. Do you feel that the design of the media building has social value?
    - Very much so
    - Yes
    - Fair
    - No
    - Very much not

15. Would you be willing to pay a higher ticket price for better experiencing a media building?
    - Yes
    - No

16. Would you be willing to visit the Media Building again?
    - Yes
    - No

17. Would you recommend the Media Building to others?
    - Yes
    - No

18. do you have any other comments or suggestions?

Thank you for your participation! Please continue the interview with the interviewer for approximately 20 minutes.

C. Semi-structured interview questions

Questionnaire Title: Survey on the relationship between media buildings and the overall image of the city

[Media City Experience]

- Have you ever experienced a media building in the city? If so, please list an example that stood out to you.
- How do the visuals of media architecture affect your sensory experience? Please describe how you felt when viewing the media building.
- How did the dynamic elements of the media building (e.g., lighting, projections, etc.) affect your experience? Please share your thoughts on these elements.

[Media City Image]

- What is your opinion on the relationship between media architecture and the overall image of the city?
- What do you think is the importance of media architecture in shaping the overall image of a city?
- Does media architecture play a role in enhancing the overall image of the city you live in? Please share your observations and experiences.
- Do you think there are any negative impacts between media architecture and the overall image of the city? If yes, please describe the specifics.

[Media City Style]

- Should the design style of media buildings be in harmony with the overall architectural style of the city? Please describe your views and reasons?
- How do the appearance and signage of media buildings affect the identity and brand image of the city? Please describe your observations and experiences!

[Media City Culture]

- In your opinion, should media architecture focus more on showcasing the city's history and culture or pursuing modernisation and innovation? Please describe your opinion.

[Media City Economy]

- Do you think media architecture can become a landmark of the city and an important element to attract tourists? Please explain your point of view.
- Can media architecture create jobs and economic growth for cities? Please explain your opinion and relevant real-life examples.
- Can media architecture attract more investment and business activities, and thus contribute to the development of a city? Please share your views and experiences.

[Media City Life]

- Do media buildings have a positive impact on social activities and cultural exchanges in cities? If yes, please share your observations and experiences.
- What role do media buildings play in the life and cultural activities of city residents? Please share your observations and experiences.

[Media City Innovation]

- In your opinion, does media architecture stimulate the creativity and imagination of city dwellers? Please explain your opinion.
- In your opinion, can the creativity and uniqueness of media architecture inject vitality and artistic atmosphere into cities? Please share your observations and experiences.

[Media City Politics]

- Can media architecture bring cultural exchanges and international contacts to the city? Please explain your views.
- Does the accessibility and social inclusiveness of media architecture have a positive impact on the overall image of the city? Please explain your views and reasons.

[Media City Building]

- Do you think the planning and layout of media buildings should take into account the needs and comfort of city residents? Please share your thoughts.
- Do you think the scale and height of media buildings need to be compatible with the overall urban planning of the city? Please share your views and opinions.
- Should media buildings focus on sustainability and environmental friendliness in urban development? Please explain your views.

[Media City Vitality]

- How do the light and shadow effects and dynamic elements of media buildings affect the night view and vitality of cities? Please share your observations and experiences.
- Do media buildings provide more places for cultural and recreational activities for city residents? Please describe your observations and experiences.

Finally, please share your expectations and suggestions for the future development of media architecture in relation to the city's overall image.

Thank you for your participation in this survey! Your answers are very important to our research.

Appendix 3. Questionnaire and Interview Questions in Round B

Round B

1. Personal Information

Name:

Age:

Gender:

Years of Professional Experience:

2. Educational Background

What is your highest level of education? (Bachelor's/Master's/PhD/Other) _____

In which field did you obtain your degree? _____

3. Professional Experience

Type of Company/Institution:

- ✧ Design Firm
- ✧ Architecture Firm
- ✧ Lighting Design Firm
- ✧ Media Company
- ✧ Other: _____

What types of projects do you primarily work on? (Select all that apply):

- ✧ Residential
- ✧ Commercial
- ✧ Cultural
- ✧ Educational
- ✧ Entertainment
- ✧ Digital Media
- ✧ Metaverse
- ✧ Other: _____

What is your role in media architecture design?

- ✧ Designer
- ✧ Project Manager
- ✧ Technical Specialist
- ✧ Manager
- ✧ Other: _____

Please describe the most representative media architecture project you have participated in and indicate your role in the project.

_____

4. Multidimensional Assessment of Media Architecture

On a scale from 1 to 7, how would you rate and rank the importance of the following aspects of media architecture? Pay particular attention to how these aspects enhance urban attractiveness and vibrancy at night.

- ✧ Urban Image
- ✧ Economic Impact (investment and employment)
- ✧ Social Function and Cultural Exchange
- ✧ Innovation and Technological Integration
- ✧ Environmental Impact and Sustainability
- ✧ Public Engagement and Social Inclusivity
- ✧ Visual Impact and Vibrancy

Select the two aspects you rated highest, explain their importance, and provide examples from specific projects.

5. Challenges and Opportunities

What is the biggest challenge you have encountered in designing/managing media architecture in nighttime environments? Please share how you addressed it.

_____

What underutilized opportunities do you believe exist in the design/management of media architecture, particularly in enhancing urban nightlife?

_____

6. Future Outlook

What innovations or development trends do you most anticipate in the future of media architecture for promoting urban nightlife?

_____

7. Professional Insights

What suggestions or insights do you have for fostering the harmonious coexistence of media architecture with urban nightlife and sociocultural dynamics?

_____

8. Summary Feedback

In the current conditions of urban nightlife, how do you think public awareness and acceptance of media architecture can be improved?

_____

Appendix 4. Questionnaire and Interview Questions in Round C

Round C

1. **Basic Information**

Name:

Age:

Gender:

Years of Professional Experience:

What is your highest level of education? (Bachelor's/Master's/PhD/Other) _____

In which field did you obtain your degree? _____

- ✧ Your professional field (you may select multiple; please highlight your choices):
- ✧ Architectural Design
- ✧ Lighting Design
- ✧ Multimedia Design
- ✧ Other (please specify): _____

2. Definition of Media Architecture

2.1 Based on your personal practice and research, how do you define media architecture?

_____

2.2 List the reasons and factors you believe contribute to the popularity of media architecture in China, and explain why.

_____

3. Multidimensional Assessment of Media Architecture

On a scale from 1 to 7, how would you rate and rank the importance of the following aspects of media architecture? Pay particular attention to how these aspects enhance urban attractiveness and vibrancy at night.

- ✧ Urban Image
- ✧ Economic Impact (investment and employment)
- ✧ Social Function and Cultural Exchange
- ✧ Innovation and Technological Integration
- ✧ Environmental Impact and Sustainability
- ✧ Public Engagement and Social Inclusivity
- ✧ Visual Impact and Vibrancy

Select the two aspects you rated highest, explain their importance, and provide examples from specific projects.

4. Media Architecture: A Machine of Communication

4.1 Do you believe that the rise of media architecture has improved people's ability to perceive the communicative function of buildings?

_____

4.2 In your opinion, has the development of social media in the digital age influenced the evolution of media architecture by changing how people perceive space?

_____

4.3 As media architecture becomes a machine for dissemination in urban space, creating new audiences, tools, experiences, spatial perceptions, media relations, and urban values, do you believe that a new evaluation system for media architecture should be established?
If you agree, please describe the characteristics of this evaluation system, focusing on how it differs from existing architectural evaluation methods.
If you disagree, please explain your viewpoints and reasons.

_____

5. New Architecture (?)

5.1 In your opinion, what are the reasons behind the iterative evolution of media architecture as a new architectural typology?

_____

5.2 Compare and describe the core differences between media architecture and traditional architecture (prior to the emergence of media architecture) in terms of spatial perception, spatial narrative, and spatial dissemination.

_____

Appendix 5. Coding Table in Round A

Raw Material (⩽3 Samples)	Meaning Units	Open Coding (A)
A1-2: Media architecture may be the effect of highlighting Guangzhou as the capital of Guangdong Province.	AA1: The image of city	AAA1: Urban Public Space Image
A3-9: Not to mention that 3D panda has long since taken the internet by storm and turned into a representation of the city of Chengdu.		
A7-5: Now foreigners, foreign tourists to sightseeing, the first place to go is here. They all know there Wuyi Square in Changsha, and these media buildings should be how to say it should be a publicity effect.		
A3-10: Like dealing with tattoos, the design and application of media architecture needs to take into account its harmony and overall aesthetics with other elements of the city. Chengdu has done a pretty good job in this.	AA2: Design style in harmony with the city	
A6-2: For example, like a lot of Western films, European and American cyberpunk style, it's a real combination of architecture and digital technology that can blend together. Now we see this shell, I feel it is not very compatible.		
A1-9: Because this form of digital media expression is supposed to be the same as advertising, both have the role of creating traffic to obtain and generate public opinion.	AA3: Revealing urban development	AAA2: Economic
A2-13: It not only showcases the city's scientific, technological and artistic achievements but also promotes economic and social development.		
A6-4: If there is a good blend of technological sensibilities and media architecture, one would think that the city has a lot of potential for the future.		
A1-5: (Another function of media architecture is) The ability to stimulate economic growth.	AA4: Economic impacts	
A3-6: I think they are like super magnets for the city, attracting hordes of tourists and big investments.		
A4-4: These media architecture are quite expensive to build and maintain, but they do attract a lot of tourists, which can be a good earner for the city.		
A2-11: Energy-efficient materials and technologies, such as LED lighting and solar panels, were used to ensure that the building's operations were as environmentally friendly as possible.	AA5: Environmental social responsibility	AAA3: Environmental
A6-13: In the future of urban construction, basically if you build this kind of media architecture or office building, no one will ask the people what they think, but only ask the government to agree or not. If the government agrees, the capital will definitely maximise its own interests.		
A8-5: This should still be planned, if not, the city night scene will		

become a mess, and the planning will not work.		
A1-4: It is also able to show the positive energy of the social atmosphere, such as building a youthful life and so on. This kind of social energy orientation, I think, has a very deep and powerful influence on people's daily subtle influence.	AA6: Public needs	AAA4: Public participation and Social inclusion
A2-12: When night falls, the whole tower reveals different themes and stories through its changing lights, which not only attract a large number of residents and tourists but also activate commercial and entertainment activities in the neighbourhood.		
A8-6: I think like the friendliness of the environment, because you if the residents around the residents don't support a thing getting it right, there's going to be a point where they obviously care that they don't support the thing. I think it's bad.		
A1-10: I think that digital media architecture should have that positive impact, both in their present time and the kind of relevance that they exhibit.	AA7: Content considerations	
A4-6: I really hope these benefits go beyond just making the city look more modern. It would be great if regular people like us could actually feel the impact. For instance, if these media architectures could share useful info like job openings, laws, health tips, or emergency alerts, that would truly benefit everyone.		
A5-6: What they show is often just something superficial, lacking an emotional connection with the viewer.		
A4-5: Media architecture, as a product of the new era, does represent, to a certain extent, young people's attitude towards life in pursuit of novelty, uniqueness and personalised expression. However, for people like me, life is still better when it is down-to-earth!	AA8: Digital divide	
A4-7: I come from a rural area and am not familiar with many of the modern amenities of the city		
A8-7: This construction to do a good job, must give the neighbouring residents of the views or suggestions they communicate well, to make this thing public. Right, do not say that it is too administrative or formalised, seek their views, and slowly everyone will grind it out.		
A2-8: Media architecture, as a combination of technology and art, greatly stimulates the creativity and imagination of city dwellers.	AA9: Stimulate creativity and imagination	AAA5: Visual
A4-1: I remember the first time I walked into a big city, the glittering buildings were especially bright at night, almost like a festival. That glow gave me the feeling that I had stepped into another world.		
A5-1: The experience in Wuhan was a visual feast, to say the least. The media architecture of the city, especially the huge LED displays and neon billboards, gave me a feeling as if I had stepped into cyberspace.		
A1-1: Media architecture in Guangzhou is already a common phenomenon.	AA10: Visual	

A2-1: The tower is completely transformed at night, from a simple TV tower to a huge, dynamic canvas with colourful lights flowing over it.	effects sensation	
A7-1: At that time, it is the first time for us to see the screen there, so we are very curious. We just look at the screen without seeing the flow of people and think that the effect of publicity is very good.		
A1-17: It's like why anchors are so hot right now, if media architecture can be as interactive in real time as network celebrities, then it should be better and more popular in the future.	AA11: Bringing the media to think	AAA6: Innovative Technology
A5-3: It doesn't have the glitz and glamour of Shanghai, or the glitzy scenes of the super-sized screens, but it does have a busyness and clutter that is closer to the essence of life, showing another side of Wuhan as the commercial centre of South China.		
A6-5: In the original building based on the addition of digital media, in fact, I have a kind of feeling that it is a quite broken house, plus a pile of ads.		
A2-3: Guangzhou Tower is not only a TV broadcasting tower, it is also a cultural symbol of the city, representing Guangzhou's determination to move towards modernisation and internationalisation.	AA12: A symbol of technological development	
A2-9: The buildings themselves are products of innovation, demonstrating the possibilities of the city of the future.		
A6-9: Huaqiang North Commercial Area is still a relatively backward because it used to be a wholesale market. However, after the transformation of the media building, it can be clearly felt that it is transforming in the direction of technology.		
A1-14: Media architecture is a form that can be disseminated internationally.	AA13: Promoting cultural international exchanges	AAA7: Social Function and Cultural
A2-10: The event attracted a large number of foreign tourists and professionals to Guangzhou, deepening their understanding and interest in the city and its culture. Such international exchanges are extremely important to the political and cultural status of a city.		
A7-8: For example, like you just talked about some of the events that are held, it can invite some foreign, including that some foreign companies can also hold events in Changsha and so on.		
A1-11: The media architecture serves as a weathervane, as if in a classroom, the digital building is the content on the blackboard, the process by which the teacher conveys the message to the students through the blackboard.	AA14: Social and cultural role	
A2-7: These buildings are not only icons of the city, but have also become hotspots for socialising, and people can often be seen gathering around the light show		
A3-2: With each step, changes in perspective and light and shadow bring new feelings and inspiration. The light and shadow on the surface of the building present not only traditional cultural elements,		

such as the dynamic patterns of Sichuan opera faces, but also abstract graphics with a strong sense of modern technology.		
A2-6: Media architecture is not only the embodiment of modern technology but an important bridge between urban cultural heritage and innovation. By combining advanced media technology and architectural design, buildings such as the Guangzhou Tower strike a unique balance between showcasing Guangzhou's cultural heritage and modern development.	AA15: Cultural symbols and history	
A3-8: I remember one night when a short film was being shown on a huge media wall in Taikoo Li about the daily life and cultural characteristics of Chengdu, the crowd included both locals and foreign tourists stopped there to watch and interact with each other. This kind of scene can be seen around many media architecture in Chengdu, becoming a unique landscape of the city.		
A8-3: Media architecture should incorporate the city's history and culture as well as historical belt innovations.		

Appendix 6: Coding Table in Round B

Raw Material (≤3 Samples)	Meaning Units	Open Coding (B)
B1-19: Real content creators are probably moving into a role similar to an advisor on what kind of content you need. I'm a consultant, but I'm also an advisor.	BB1: Participating Roles	BBB1: Work Ideas
B5-1: Our main role in this project is to be a scripting company for the programme and content. Through cooperation with other animation companies, we do the animation of the video content and then communicate with each other to adjust a more suitable programme for broadcasting.		
B8-2: My role in this project is mainly an urban planning consultant. I am responsible for ensuring the harmony between architectural design and urban planning.		
B1-3: It actually represents two ways of thinking about the work. One way of thinking is to start with the content, and I think about who I'm serving first. The other is that the latter project is more concerned with the environment, or I might think about the equipment I'm serving in relation to the environment, and then think about the content we're involved in.	BB2: Workflow	
B3-8: Because first of all the first, as a public building, the transport building is actually suitable for a large part of the city services, in fact, everything we do is for the work type, and it is also the window of a city, especially the transport building.		
B4-3: It is hoped that the display building will be both an exhibition space and a living media that can intervene in urban life, interact with citizens, and promote extensive cultural exchanges.		
B2-5: The characteristics of the different contents are taken into account, as well as the need to combine different media to present this different effect and place it in a space that presents a more multifaceted narrative.	BB3: Environmental Interaction	
B7-2: Our design concept was to create a building that reflects the innovative spirit of the Pearl River Creative Park while blending harmoniously with the surrounding urban environment. The façade is designed with programmable LED strips, which are cleverly embedded into the building's glass façade to ensure that natural light is not compromised during the day, while at night the building transforms into a giant display.		
B8-10: In the Huaqiang North area, there is a building with a huge LED screen assembled on the facade, and this screen has become a window to showcase innovative technology and art.		
B2-8: I think it's more important because the so-called night environment or this kind of media architecture, it's a public thing, it's	BB4: Planning	BBB2: Challenges

not a private thing. It's not a private thing, so if you have content to disseminate your views, the vetting of that viewpoint, the logic of the content itself, I think that maybe if it's a government department, it needs to be a little bit of a gatekeeper and a regulator.	and Management	and Management
B3-14: Because a media architecture is naturally electronic and it is very big, the public security authorities have always been very concerned about these few places. So when we did the event, we also encountered such a difficulty, because it is a media architecture, all the things we publish have to be submitted for review in advance. It's not as possible as broadcasting a PowerPoint, technically it's the same. But in terms of the degree of audit and gatekeeping, its importance and sensitivity is much higher than in other media. Because of its volume, its points, its influence, the media architecture it must be a focal point of the space, so it is a place where nothing can go wrong.		
B5-12: Because if it's a corporate self-contained media structure, it may be more about presenting some of its own cultural concepts. If it is a city-level, government-led one, it may be related to the function and image of the city.		
B6-11: We frequently come across the issue of colour saturation. Currently, we possess numerous such technical means, or some of the lamps and lanterns that are used for light mixing. As a result, the colours produced are basically of relatively high saturation.	BB5: Technical Challenges	
B7-6: One of the toughest issues when designing and managing a media building is how to balance its visual appeal with its environmental impact, especially with regard to light pollution and energy consumption.		
B8-6: When designing and managing media buildings at night, one of the biggest challenges we face as members of the China Institute of Urban Planning (CIUP) is how to effectively balance visual attractiveness, energy efficiency, and minimising light pollution and disturbance to the surrounding environment. To achieve the optimal balance of these goals, we have adopted a series of innovative strategies.		
B1-17: Now more screens are just as hard as advertising boards, it is only through the screen can become a dynamic advertising board.	BB6: Cognitive Bias	
B5-16: In fact, from a planning point of view in reality, many of our projects are actually critical of media architecture because the space in which it can exist is very limited.		
B6-8: Investment and design are two entirely different matters. He might ask you to design something. For instance, it often happens that Party A says you can be free to design new equipment, apply new technological means, and so on. You're given the freedom to design as you like. However, in reality, when it comes to the budget, the cost		

you come up with might seem exorbitant to him. It could be ten times, twenty times, or even a hundred times what he had in mind.		
B1-4: But he added that there were some problems with the operation of the bar, his location, there were a lot of trees outside the screen and so on, in fact, its communication effect as well as the marketing effect was not so good in the subsequent feedback. But as a visual designer, I think the visual effect of his design is satisfactory, but the business purpose or communication purpose behind it may not be as expected.	BB7: Market Feedback	
B3-6: The client had to invest this huge amount of money specifically for this space to do something like this, and at the time, it was very difficult to solve the problem that we encountered.		
B5-6: We didn't encounter any opposition to the extremes that we were presenting. Including the inside is also very accidentally appeared kind of character is the future of science fiction some people er anime characters. I think this is if for a municipal government, including the Shenzhen Municipal Government in the neighbourhood, this kind of feeling it is very niche some of the images I can be on, so I feel very surprised. At the same time, I also think that Shenzhen is still quite open to that kind of, uh, actually the most open to a diversity of citizens, I understand that as long as it's healthy, it's okay.		
B3-2: We seem to feel in the advertising market again that customers are not so receptive to such a wide range of media architecture, so in fact, when we did the new terminal, we started to use the subtraction method again instead, how to use fewer screens to achieve better results.	BB8: Technology Trends	BBB3: Future Trends
B3-15: So I think maybe the indoor part we will go towards will still follow the current trend of multimedia technology, will follow the technology, will follow the product. Maybe this year we have come out how the technology, may be VR and naked eye 3D.		
B5-7: The technology must be innovated, but not all. For example, you do not let me know that your your technology installed things are screen, you want to create suspense for me, you want to create a kind of wrong is illusion, you want to give me a kind of surprise must give me surprise. But these surprises are not and not the content brought, but a technological innovation, or technology, or a patchwork of technology, or a multi-dimensional experience that allows me to experience what brings me and what attracts me. This actually can not fall off the line, or this must be in this is a foundation.		
B1-27: Just like I feel that New York is such a city, and Times Square is a little too multimedia architecture. Although it has some special cultural significance, it is alsocomplex and has also become a symbol of its cultural attributes, so there is a certain specificity.	BB9: Content Trends	
B2-12: I think there should be some control over the content. Indeed, in particular, I would recommend that the media façade should feature		

more content that is more subdued, more flowing, and more artistic, while having less content that is overly frenetic and changes at a very rapid pace.		
B5-5: I think Shenzhen gives young artists a lot of possibilities. So when he is screening our creations, there are actually a lot of elements, some of them are very sci-fi, some of them are very natural ecological, some of them are about Shenzhen's local culture, and some of them are about traditional culture, so there are a lot of different kinds of content.		
B5-8: But if it's the story good media inside in the end generally actually are not good. Because we as viewers or ordinary viewers, don't go er in the professional point of view to see, in fact, we still need to have a visual impact, the content is actually just in the inside to present a er foothold, a height, a dimension, including one of his story chain can not move people, he is a blood. I think the media surface must be very wonderful, because the space is very pleasing. Both of these must be cutting edge and full.	BB10: Design Trends	
B6-9: The most fully expressive. Just as an example, let's say there's a guy who's just tall, short, fat, and thin, and he just doesn't care what type he is, but he should have some clothes that best fit him. Every place or every building has a form of media that suits it.		
B8-7: Make better use of these high-tech buildings by turning them into hotspots for nighttime activities rather than just everyday office or living spaces.		
B1-16: Nowadays, I think there are a lot of trends and directions for the development and innovation of various media architecture, because there is a lot to play with in terms of modelling, for example, the Alaskan spherical screen is very stunning. Like all kinds of shaped screens, a screen with more clever relationship with the environment, I think it should be incorporated into the design.	BB11: Styling Trends	
B4-4: While the construction and operation and maintenance of media architecture do bring economic benefits, such as increasing employment opportunities and attracting investment, their direct economic returns may not be the most prominent when compared to their cultural and social functions.		
B5-20: Because it is in fact the media façade in China should be a trend, over to a very high peak, everyone will start to converge, he will also reflect, slowly will go back to that is not so radical a statement, it began to slowly become more convergent.		
B1-20: It may have taken three months for a team of four people to create a project before. Now (due to the maturity of AI tools) a project that might take one person a week to go back and forth being able to modify n templates and communicate down to get it done, it's going to become a state where it's actually going to be much more efficient.	BB12: The Impact of Artificial Intelligenc	

B2-11: This understanding I now is that I now actually have a little bit of concern, because perhaps because now AIGC, especially generative artificial intelligence of this technology is developing too fast, it will actually have to replace the original video production of a process and logic.	e	
B7-10: With the development of artificial intelligence and machine learning technologies, media buildings are able to achieve higher levels of intelligence and adaptive capabilities. This means that the building can adjust its visual displays and interactions in real time based on the weather, the surrounding environment, and even the emotions and reactions of the audience.		

Appendix 7: Coding Table in Round C

Raw Material (⩽3 Samples)	Meaning Units	Open Coding (C)
C1-1: Media Architecture in English is called Media Architecture, which is actually a word translated from Media Architecture in foreign countries. So this matter mainly started from the related research in this area in foreign countries. There is an international organisation called MAI, Media Architecture Institute.	CC1: Definition	CCC1: Definition of Media Architecture
C2-1: The word media I think is the definition of architecture with media added to it, and it should be called media architecture. What is media? Media is actually a message, and if media is added to architecture, and this media can express a message that is beyond the building's ability to express a message, I think it is called media architecture.		
C4-1: Media architecture is an art form that combines architectural design with advanced media technologies. This design not only takes into account the functionality and aesthetics of the building but also emphasises the use of digital technologies and multimedia content to enhance the user's experience. Media architecture creates dynamic, changeable and interactive environments by integrating lighting, displays and interactive technologies to communicate and interact with the audience, thus providing a richer experience both visually and sensually.		
C1-33: So in terms of communication power and social impact, I still think that the goal should not be on the building itself, but the value orientation should be on the city, and the good or bad of the building is definitely not an isolated existence. That is to say, this matter should be orientated to the city, you can never isolate a building. When a museum exhibits to treat it, it must have a public nature. That's why I always think that the meaning of architecture in the city must be defined in the city. When it can be defined in the city, it is firstly reflected in its public value.	CC2: Propagation	
C2-16: Media construction is the building can express information to disseminate its information perception, equivalent to my body image of this thing I can not say clearly, I have added an information perception of things when it is a communication to improve. At the same time, he may improve the perception of the form with the help of the ontology, which may be weakened, but the improvement of the information will be strengthened, and it becomes such a very contradictory state. But because of the media architecture, for example, it can return to the ontology when it expresses, and it can return to the ontology when it does not want to express. Therefore, people's judgement and tolerance towards it. Because of its		

returnability, people's tolerance is rather larger than others.		
C3-9: It's very interesting what you've just mentioned about the way of design and maybe the way of distribution and the way of viewing of the content that we're talking about. A lot of artists nowadays are actually following this set of rules in their artistic creation.		
C1-51: This theory is actually something very traditional, and now all these so-called spatial intent things have been replaced by navigation, by digital things. Whoever drives a car now knows the way, drivers used to have maps in their heads, and now no one can find a place without navigation.	CC3: Comparison	
C3-12: It is in the spatial perception. The difference between media architecture and traditional architecture, media architecture is through the dynamic digital display technology, such as LED screen or dynamic projection of these things to provide changes in the visual experience. Traditional is that it is dynamic to emphasise the dynamic piece. Traditional architecture relies on static physical form to show, this is in the spatial perception. The second is the spatial narrative. The difference in spatial narrative. Media architecture can update the content in real time and quickly respond to cultural changes, events, or emergencies, so it has a rapid response ability. For example, a change in the colour palette or something echoes a particular event. Traditional architecture is a static narrative, so this media architecture should be more interactive and timely in spatial narrative. The third point is the difference in spatial communication. Media architecture actually transcends the limitations of physical space, that is, it can attach all kinds of content to its own building. In fact, a little bit I transcend time can transcend space.		
C5-8: I feel it is which direction media architecture can express the personality within will be less. Like the architects designed these buildings to give people the kind of feeling, I reckon it should be relatively close to the feeling of each person. But the media building media façade of the building is like a television set, it can give you the news and Hollywood blockbusters, and you can also watch the Spring Festival gala. If it is a large area of the media façade, it may present a sense of shock, not that single building so simple an experience.		
C1-41: First of all, it's hard to say whether it's a new type of building or not, this architect must not recognise it as a new type of building, and he must think that you've destroyed my building, or that you've made distortions on this building of mine.	CC4: Type	
C6-7: There are two kinds of media architecture. The first one is that the media architecture itself is used to spread messages. The second one is about how to present the building itself in a way that enables it to become a form of communication.		
C6-8: An architecture that transforms into a medium and a medium		

that evolves into an architecture represent two levels of thinking. These two directions indeed have an impact on whether what we are researching pertains to architecture or media.		
C1-13: What is the purpose of place making? The purpose of place making is to create a physical space for building, in which there should be people's activities. After the emergence of media architecture, especially in China, other places dare not say absolutely, at least in China, so that a large number of tourists from all over the country towards the media building this place, became a net red place!	CC5: Reflections	
C2-24: Architecture also encompasses the study of typology. It can be regarded as a type, specifically media architecture. There is also the typology within postmodern and avant-garde architecture. This area of study is highly extensive. However, this extensiveness mainly lies in the convenience it offers for classifying certain types.		
C3-3: As media architecture indeed possesses a crucial attribute, namely interaction, this interactivity pertains to how it engages with the audience, such as digital participation or the manner of participation. For instance, in Times Square where everyone is allowed to upload their own 15-second video or image, I consider this to be an excellent example of an interactive display.		
C1-17: This is something that, in my opinion, still needs to keep up with the times. At this point, you might say that during the day, the sunlight has no impact on your building, regardless of whether it's made of glass curtain walls, concrete, or bricks. In fact, such a building is hardly affected during the day.	CC6: Attitude	
C2-9: However, there is another aspect that I especially wish to convey my thoughts on and explain what I do. For example, when we install billboards on an upper floor, I am from a semiconductor company, a listed one. Besides the name of the company, there are also other signs that we want to put up.		
C2-10: The media wall is in a state where there is no precise definition, it is not a precise screen, and it is not a spaced-out definition of society or advertising. Given that the two have led to the emergence of it, now or people are still able to take advantage of this thing, so there will be a lot of use of almost neither I spend money, I do more things upstairs, to be able to express my message, I found that a lot of homeowners are very like.		
C1-28: Our profession actually has to step back, or we have to use the phenomenological method, called shelving, to carry out the essential reduction. Don't go with your past back professional background, or historical experience to examine this matter, you should remove all historical experience and tinted glasses, you just for this phenomenon you make your interpretation or make your judgement on it.	CC7: Reason	

C2-8: I found this pixel that is subject to the conditions of the building or other limitations, not very dense when the image is not very clear, with more and more development on the image is clearer and clearer. Originally, this ontological aesthetics of the was very influential, but why is there a large number of pursuits? Is the hope that the use of such carriers useless part? Just mentioned the mural, and sculpture it is to occupy the space and the inner wall, but the outer wall and the roof and these outside of the empty, are equivalent to his useless part if it can produce better value? This is a kind of focus, or should be thinking about the power, or self-expression of emotional information generated by a kind of demand.		
C3-2: I think it is still due to the rapid development of the economy and the progress of technology. Of course, it also includes the public's cultural identity and demand, and of course, it is also inseparable from the government's policy support and so on, which should be the main reason for its prevalence.		
C1-15: In fact, the media architecture you say it in the end which component which proportion is more, in fact, I think you ask this matter what is the purpose of it, you ask this matter the purpose of this question is because you worry about architecture what is the hidden meaning behind it	CC8: Judgement	
C3-10: The first aspect is the quality of the content of the media building. That is to say, you need to consider the creative and cultural relevance of the content of the media building, and how often they are updated and so on, and also the artistry of the building, which I think should also be considered, which is in terms of the quality of the content. The second point may be the interactivity, need to assess how the building interacts with the audience, including digital engagement, including your online engagement stuff, I think it also belongs to this kind of interaction. Like this kind of B-site, even the pop-up kind of this, I just think it's called digital engagement, it's all called interactivity. The third point is technological integration, evaluating the degree of innovation in the integration of digital technology and architectural structure in architecture. That is to say, I don't put a light spot on or a big screen directly on the building, but also to see how well they match. Another point is the social impact, that is to say, we have to analyse the impact of media architecture on the social environment and the daily life of the residents, which is also a criterion for judging. The fifth point is sustainability, that is, its environmental impact and its energy consumption. In fact, a lot of this can be done in terms of control, such as minimising energy consumption, being more friendly to the environment, and so on, and this belongs to the criterion of sustainability in terms of its technical performance.		

C4-5: This type of judgement differs from existing architectural assessment methods as it places more emphasis on the dynamic character of the building, its technological integration and its interaction with the public.		
C3-5: It's to the media building, I think it's the operators and managers who should have such a realisation. What I mean is that we can't just pay for it, we need to have a certain amount of income, which is balanced between the profitable and unprofitable parts to encourage more quality content to be produced, so that it have different hierarchies. I also have another consideration, as far as commercials are concerned, there are times when the content that is done on the big screen is very polished and very good looking. There are times when you can push some of the content that is labeled as purely artistic media\ and the media content of this kind of creation. They should be promoting each other, I show, you show, promote each other, and I think each other's this er is each other's competition, so this kind of media content will be getting better and better. Is that possible in China? In fact, it should be possible, as long as there is such a sense of management, strict screening of commercial advertising content, and encourage the integration of artistic creation, I think it may be a very good balance.	CC9: Management	BBB2: Challenges and Management
C5-7: The aspect ratio of the media building must also be paid special attention to, this involves the necessity of customising all the animation materials. Because we look at the TV set is generally 16 to 9 such a proportional relationship, if it is a building, it may be 9 to 16, or even 9 to 21. such a long strip, if we say that we use ordinary material directly to lay, without changing its proportionality premise, it is possible that the picture of the pixels will become very low. We should be able to consider the important content of this application material, and it should be more perfectly reflected in this building.		
C6-6: We will actually find in the research that many TV towers in the late stage of its operation and maintenance iare s basically unable to recover the investment. The first one is that the people who may have come to the TV tower often may have already visited it. This will have a great decline, so most of the city's TV towers basically have no way to recover the investment, and there is no way to continue to attract people flow!		
C5-5: At that time, there were several of us watching the scene together for maybe half an hour, and we kept admiring his ink painting in particular, which impressed me the most because it was very low in brightness, but it wasn't black, and it was that kind of light with a bright kind of transition effect, which was very good.	CC10: Future	BBB3: Future Trends
C5-6: As we have just discussed which direction the technology should go and your project provides a particularly good direction, he		

should be combined with some of our traditional aesthetics or some of the traditional meanings of the very concrete elements.		
C5-20: So it's possible that in the future, media architecture will, this way of media architecture will potentially go beyond the building itself, and this is something that I think it's possible to present, mainly depending on the technology.		