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Xiangyang LI,

orcid.org/0009-0008-2253-4181

*PhD student at the Department of Graphic Design
Kyiv National University of Technologies and Design
(Kyiv, Ukraine) 205756270@qq.com*

Nataliia SKLIARENKO,

orcid.org/0000-0001-9188-1947

*Doctor of Study of Art, Professor,
Professor at the Department of Architecture and Design
Lutsk National Technical University
(Lutsk, Ukraine) nata_skliarenko@ukr.net*

REGIONAL INNOVATIVE DESIGN STRATEGIES IN THE SHAPING OF URBAN VISUAL IMAGE IN SHANDONG PROVINCE

The article analyses regional strategies for designing the visual image of cities in Shandong Province. It proves that there is a need for a design approach aimed at promoting the level of artistic construction in cities, refining their image, and strengthening inter-city connections. Against the backdrop of increasing multi-city connectivity in the region, it is reasonable to form a visual image of the city in a broader spatial context. This study adopts an interdisciplinary approach, focusing on the holistic and synergistic way in which public art and architecture landscapes play out and form a synergy of design as important visual elements in urban spaces, within a regional perspective. This paper argues that existing research often studies public art separately from architecture landscapes, and focuses primarily on the separate design expressions of these two in case urban spaces. However, there is still a lack of a systematic design discussion at the regional level that focuses on the synergistic relationship that the two play in the city's visual image. Considering these factors, this paper develops a synergistic public art-architecture landscape design model that can act on a regional scale from the standpoint of the spatial pattern of multi-cities coexisting in Shandong Province. Three major metropolitan areas of the province were considered as spatial objects of design analysis, and their design manifestations were studied. The three design strategies in the model, Structural Order-Oriented type, Landscape Narrativity-Oriented type and Adaptive Growth-Oriented type. They support each other and act as the core level influencing the way the inputs and outputs of the upper and lower levels are produced. Research indicates that this model can integrate the regional synergistic relationship between public art and architecture landscapes within a unified framework. These types of design strategies ensure the formation of an urban visual image in different environments, providing new ideas for regionalisation and systematic design of the urban visual image.

Key words: *Visual Image of City, Visual Communications Design, Public Art, Architecture Landscape, Design Strategy, Regional Collaborative Design.*

Сян'ян ЛІ,

orcid.org/0009-0008-2253-4181

*аспірант кафедри графічного дизайну
Київського національного університету технологій та дизайну
(Київ, Україна) 205756270@qq.com*

Наталія СКЛЯРЕНКО,

orcid.org/0000-0001-9188-1947

*доктор мистецтвознавства, професор,
професор кафедри архітектури та дизайну
Луцького національного технічного університету
(Луцьк, Україна) nata_skliarenko@ukr.net*

РЕГІОНАЛЬНІ ІННОВАЦІЙНІ ДИЗАЙНЕРСЬКІ СТРАТЕГІЇ У ФОРМУВАННІ МІСЬКОГО ВІЗУАЛЬНОГО ІМІДЖУ В ПРОВІНЦІ ШАНЬДУН

У статті проаналізовано регіональні стратегії дизайну візуального образу міст провінції Шаньдун. Доведено, що існує потреба у дизайнерському підході до проектування, спрямованому на підвищення рівня художнього моделювання в містах, вдосконалення їхнього іміджу та зміцнення міжміських взаємозв'язків. На тлі зростання

міжміської взаємодії в регіоні обґрунтовано формування візуального образу міста в більш широкому просторовому контексті. В основі дослідження лежить міждисциплінарний підхід, що базується на цілісному синергетичному впливі публічного мистецтва та архітектурних ландшафтів, які формують синергію дизайну як важливих візуальних елементів у міських просторах з позицій регіональності. Виявлено, що акцент у дослідженнях переважно зроблений на публічному мистецтві окремо від архітектурного ландшафту і зосереджується лише на певних дизайнерських характеристиках кожного з цих елементів у міському просторі. Відсутність системного аналізу дизайну на регіональному рівні потребує ґрунтового дослідження синергетичних відносин цих двох елементів у візуальному образі міста. З огляду на ці фактори, у статті розроблено синергетичну модель дизайну структури співіснування декількох міст у провінції Шаньдун. Розглянуто три основні мегаполіси провінції як просторові об'єкти дизайнерського аналізу та досліджено їхні дизайнерські прояви. Три стратегії дизайну в моделі орієнтовані на структурний порядок, ландшафтну нарративність та адаптивне зростання. Вони підтримують одна одну і діють як основний рівень, що впливає на спосіб формування вхідних і вихідних даних верхнього та нижнього рівнів. Дослідження показує, що ця модель може інтегрувати регіональні синергетичні відносини між публічним мистецтвом та архітектурним ландшафтом в єдину структуру. Ці типи дизайнерських стратегій забезпечують формування міського візуального образу в різних середовищах, надаючи нові ідеї для регіоналізації та системного дизайну міського візуального образу.

Ключові слова: візуальний образ міста, дизайн візуальних комунікацій, публічне мистецтво, архітектурний ландшафт, дизайнерська стратегія, регіональний спільний дизайн.

Problem Statement. Urban image consists of huge buildings, public spaces and some unique elements (Elhagla et al., 2020). The representation of the city at the visual level provides a vehicle for its image to be physically observed and specifically analyzed. The shaping of a good urban visual behaviour is essential to create a positive impression in the urban space, which has an important perceptual value (Santosa et al., 2018). As the types of urban space continue to be enriched, visual identity is no longer established only through the individual expression of visual elements such as logos and guide signs (Li and Skliarenko, 2024; Li and Skliarenko, 2025), but is more often accessed and compared on a daily basis through a variety of visual elements in urban space.

Urban public space can enhance the quality of the urban environment, awaken people's cultural memory in the city as well as enhance their sense of image and belonging (Ramlee et al., 2015). In contemporary urban construction and regeneration, multiple, relatively independent and disparate design practices in the urban space generally revolve around the goals and conditions of their respective projects. It is also influenced by spatial governance approaches such as privatisation trends, security policies, compact 'festival' spaces and the transformation of 'gaps in the city' (Schmidt and Németh, 2010), resulting in an increasing 'fragmentation' of visual expression in public space (Mela, 2014). Urban visual image is also often understood as an overlay of several localised designs, lacking a holistic approach.

The regionalisation of cities is a trend in contemporary society. This trend also complicates the situation facing the visual image of cities. When cities become increasingly spatially connected without corresponding holistic design measures, the visual images of cit-

ies become independent of each other and influence the formation of an overall impression of multiple cities. Shandong Province is no exception, and the differences in socio-economic conditions, construction and development orientation, and spatial structure of different cities often result in different visual expressions. It is therefore important to construct a collaborative design approach for regional cities that enables designers to respond effectively to the visual needs of today's people in the context of rapid urban development.

Analysis of research. In recent years, the study of urban visual image has gradually shifted from the discussion of symbolic identification and communication expression to the spatial and environmental level, and the understanding of the process of urban image formation in a more comprehensive spatial context has received the attention of some scholars. The studies of Montgomery (1998) and Rahman et al. (2020) pointed out that urban image is not only composed of some visual symbols, but also closely related to spatial form, place characteristics and people's daily experience. In terms of spatial perception, Sepe's (2017) study discusses the characteristics of the formation of urban image and place perception in the context of multiple spatial elements working together at the level of public space and use experience. On this basis, Wäckerlin et al. (2020) discuss and analyze the contexts in which urban image is formed in the spatial context of a polycentric region, stressing that it is not sufficient to analyze the image of a city in a single urban context, but that it is also necessary to do so by means of regionalised municipal synergies.

The question of the role played by design elements in urban spaces has been discussed by a number of scholars at the level of both public art and architec-

ture. Discussions at the level of public art focus on the relationship between public artworks and the urban places in which they are situated, arguing that the art form, the way it is set up and the context in which it is situated affects the way in which the public understands the space and shapes its participatory behaviours to a certain extent (Milne and Pojani, 2023; Zebracki, 2013). Architecture studies have explored the possibilities of integrating architecture and landscape, arguing in favour of shaping and ensuring the overall quality of urban public space through the synergistic action of multiple characterizing elements of the space (Bal and Czałczyńska-Podolska, 2019). Whereas studies synthesizing the two have mostly focused on artistic expression at the visual level, exploring aspects of role and importance (Düzenli et al., 2017; Zabawa-Krzyrkowska and Groń, 2020), the scope remains at the level of the specific space, and does not join it to the regional and transcultural frameworks for holistic analyses.

In the context of regional design, the shaping of urban space is often viewed as a comprehensive problem that spans scales and involves multiple actors. Balz (2018) discusses regional design from a discretionary planning perspective, noting that design reasoning methods can be effective in creating a coherent relationship between urban planning guidelines and specific scenarios in order to refine and advance spatial concepts and regional development decisions. Meanwhile, studies by Kempenaar and van den Brink (2017) and Kempenaar (2020) view regional design as a strategic design tool for connecting spatial visions with governance actions, emphasizing the coordinated adaptation of regions through a multi-scale design approach. It provides a guiding overarching framework for tackling complex and evolving design challenges. However, these research perspectives are only from the fields of regional design and urban planning, and there is a lack of research that links to the field of visual communication and combines regional and urban visual image. This validates the importance of this study.

Purpose of the paper. The purpose of this study is to explore the synergistic relationship between public art and architecture landscapes in shaping urban visual image. Drawing upon the spatial characteristics of multiple coexisting metropolitan areas within Shandong Province, it aims to develop a regional collaborative design model.

Presentation of the main material. Indeed, the overall character of a city's visual image can be said to develop gradually over the presentation of multiple urban spaces, and is not entirely dependent on the design practices within a particular city. The multi-

faceted enhancement of cities in the region has led to the emergence of a cross-city character in the visual image of the city. This research perspective helps to avoid fragmentation of urban expressions and regional synergies thus become discussable.

Existing research on the integration of multiple cities focuses first and foremost on the broader concept of 'urban agglomerations'. This is an unavoidable state of urban development, influenced by, for example, highly developed industrialisation and urbanisation, which has led to the organisation of several cities on a regional spatial scale and a significant increase in economic development (Fang and Yu, 2017). However, the focus of the research is usually centred on economic, regional, planning and environmental areas (Fang and Yu, 2017; Li and Lu, 2021; Wang et al., 2023). The 'metropolitan area' of interest to this paper, on the other hand, is a relatively meso-conceptual one, usually consisting of one (or more) central city(s) represented by a tendency towards integrated and coordinated regional development, as well as a number of neighbouring towns and cities (which are at the same time socially and economically well connected) (Chu and Zhang, 2006); it is still a spatial form that relies on established administrative divisions and emerges as a result of official policy. The value is not so much in the delineation of clear boundaries as it is in the way it focuses on the connections and interactions between cities. In addition, the cities within each metropolitan area are able to interact with each other in order to enhance the overall external image of the region and to complement and develop with other regions. This also suggests that the relationships between these cities are complex and ambiguous (Goess et al., 2016). In the visual image of the city, the metropolitan area plays a role in bringing multiple types of visual elements from different cities into a unified framework, allowing for an integrated expression at the regional level. The visual image of the city is thus characterized by a clear directionality of the regional form.

Within Shandong Province, the metropolitan areas formed around Jinan, Qingdao and Linyi differ somewhat in their overall spatial patterns and levels of development. This also influences the way multiple types of visual elements are represented in different urban spaces. As an important medium of visual expression of urban image, the role of public art and architecture landscape needs to shift from individual expression to regional synergy. Considering the increased demand for visual design and the accelerated pace of modern urban construction, the authors propose a regional co-design model around a metropolitan area (Figure 1). Situating and analyzing these

design issues in a design model comprising three layers, regional structure, design strategy and visual image expression, helps to develop a holistic and synergistic understanding of public art and architecture landscapes as a synergistic way of influencing the way in which the city's visual image is shaped.

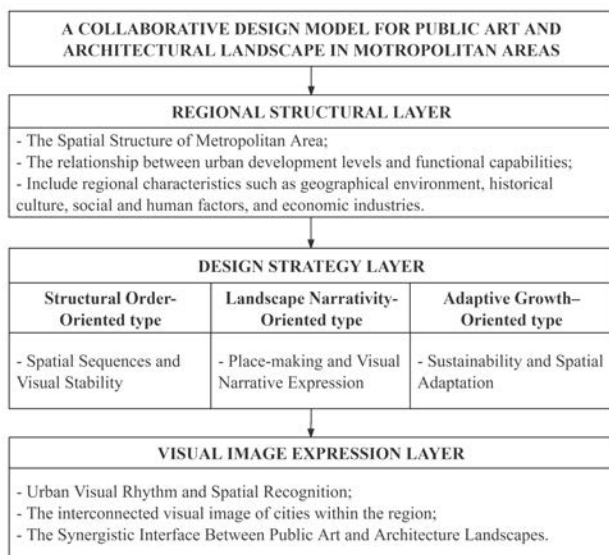


Fig. 1. The collaborative model of regional design for public art and architecture landscapes

It is necessary to explain here the role of the various layers in the model. The regional structural layer, which is the basis for regional design judgements, is the first level of the model and is used to define and delineate the extent of the urban area. It emphasises a multi-city spatial layout, a focus on the positioning of cities within the metropolitan area and a focus on integrating multiple elements of regional feature. The layer also emerges as a prerequisite for the visual image of the city, providing a coherent visual expression for the subsequent design strategies to be constructed at the regional level. The Design Strategy layer, located at Tier 2, is at the heart of this model and is key to translating the current state of the region within the metropolitan area into a practically applicable design approach. At the same time, the three design strategies, including structural order-oriented type, landscape narrativity-oriented type and adaptive growth-oriented type, can be applied in different regional environments, so that the visual characteristics of the city can be clearly recognised in the region, providing practical methodological support for the study of urban visual image. The third level of the design model relies on the conceptual narrative of the previous level, with an abstract design strategy that transforms public art and architecture landscapes into holistic visual images that can be perceived as interconnecting and collaborating

with each other on a regional scale across the cities of the metropolitan area.

Structural Order-Oriented Type is represented by the provincial capital metropolitan area of Shandong Province, which includes the cities of Jinan, Zibo, Liaocheng, Dongying, Tai'an, Binzhou and Dezhou, with Jinan as the centre city. In the provincial capital metropolitan area centred on Jinan, the strategy depends on the designer's consideration of the way the spatial structure is arranged. This logical starting point is intended to reinforce the coherence and identity of the city's image and to create a close link between the city within the regional framework. To establish a visual link between cities by integrating the form, scale, location and cultural connotations of public artworks. This also suggests that public art needs to be present at city entrances and key spatial nodes; the architecture landscape, on the other hand, with its stable and regular spatial interfaces, creates a comparable visual characteristic of the cities within the framework of the whole. In this way, the Jinan metropolitan area, which has a clear structure and a strong sense of order in its regional characteristics, has formed a holistic visual image through the linkage of public art and architecture landscape.

Landscape Narrativity-Oriented Type is represented by the Jiaodong Metropolitan Area in Shandong Province, which includes the cities of Qingdao, Weihai, Yantai, Rizhao and Weifang, with Qingdao as the central city. The strategy focuses on creating a holistic and perceptible regional image by fostering good visual experiences and place environments. The Jiaodong Metropolitan Area, with Qingdao as its core, contains five coastal cities, and the innovative design of its regional visual image is largely inspired by the geographical experience of the marine landscape. The needs of tourists for coastal leisure experience are satisfied. Public art plays a role in conveying meaning, enhancing the expressive layers of a regional image through the atmosphere of the site; architecture landscape serves as stable visual carriers of regional image, presenting themselves through the integrated effect of spatial form and landscape relationships. The synergistic effect of the two contributes to the visual image of the metropolitan area with a distinctive sense of place and narrative characteristics of the region.

Adaptive Growth-Oriented Type is represented by the Lunan metropolitan area in Shandong province, which includes the cities of Linyi, Jining, Zaozhuang and Heze, with Linyi as the centre city. The Lunan metropolitan area, centred on Linyi, is representative of this type. Different from the above two types, this type attaches importance to the expression of comfortable rhythms in urban space, aiming to incorporate

the subtle, interesting, healing and sense of belonging in daily life into the construction of the city's visual image by means of a symbolic approach, illuminating the design orientation of spatial adaptation and organic renewal. Public art has been integrated into everyday usage and living environments, thereby revitalising urban spaces and establishing the character of areas upon a foundation of experiential spaces; the architecture landscape employs relatively open spatial forms to accommodate visual expressions across different phases, providing an inclusive backdrop for the evolution of the regional visual image. The visual image of the metropolitan area is also characterised by the sustainability and adaptability of the region due to the combination of the two, and the ability to maintain overall coherence even in multiple environments.

In short, within a unified framework, different design strategy models can all possess the capacity to adapt within diverse spatial. Within the metropolitan area, public art and the architecture landscape can also form a flexible and effective synergy that enhances the visual expression of each city. The model also has the potential to be extended to relevant design contexts and can be applied to other urban areas as appropriate.

Conclusion. Taking the city of Shandong Province as a research background, this paper discusses the overall presentation of the city's visual image at the regional level, focusing on the synergistic relationship between public art and architecture landscapes at the regional scale. Shifting the focus of the study from the

individual city to the region as a whole will contribute to a more comprehensive understanding of how the city's visual image is formed and expressed. This not only enhances the connection between cities, but also enriches the visual expression.

This study proposes a regional synergistic design model that integrates public art and architecture landscape as an effective means of enhancing competitiveness in the context of rapid urban construction and development. The essence is the ability to use a holistic and integrated regional medium to meet design needs. The model covers the foundation layer (regional structure), the application practice layer (design strategy), and the concrete expression layer (external presentation of visual images). The way in which the model is applied to three types of design strategies, including structural order-oriented type, landscape narrativity-oriented type and adaptive growth-oriented type, is also explained. These three types of strategies are not simple categorisations of types of cities, but rather reflect the main ways of expression in different regional contexts within the same design framework. The application of the model also needs to be carried out by virtue of the real conditions of the regional space, which verifies the importance of the synergistic relationship existing between public art and architecture landscape as well as the possibility of multiple synergies, enhances the credibility and application value of the model, and provides a new way of thinking for the research on the design of regional visual image.

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