L'ARCHITETTURA DELLE CITTÀ

The Journal of the Scientific Society Ludovico Quaroni

n. 27/ 2025: *Architecture in China. Heritage, Environment and the Practice of Mediation Between Languages*

EDIZIONI
NUOVA
CULTURA

L'ARCHITETTURA DELLE CITTÀ

Società Scientifica Ludovico Quaroni

L'ARCHITETTURA DELLE CITTÀ

Società Scientifica Ludovico Quaroni

L'ADC L'architettura delle città. The Journal of the Scientific Society Ludovico Quaroni
n. 27/2025: *Architecture in China. Heritage, Environment and the Practice of Mediation Between Languages*
Edited by Ilaria Bernardi, Anna Irene Del Monaco, Andrea Giannotti

ISSN: 2281-8731 | ISBN: 9788833658865 | DOI: 10.4458/8865 | Copyright © 2025 Edizioni Nuova Cultura - Roma
Numero di registrazione Tribunale di Roma, Cartacea: 122/2013 del 22 Maggio, Telematica: 123/2013 del 22 Maggio

Indice

Immagine di copertina:
Protective Shelter for the archaeological site of Peking Man Cave, Zhoukoudian, Beijing.

PROTECTIVE SHELTER FOR THE ARCHEOLOGICAL SITE OF PEKING MAN CAVE, ZHOUKOUDIAN, BEIJING.
Text Author: Andrea Giannotti
Photo credits: Wu Ji 五季
Location: Zhoukoudian, Beijing Metropolitan City, China
Client: Beijing City Cultural Heritage and Tourism Bureau
Years: 2013 - Completed 2018
Design Program: Protective shelter, visit pathways to the archeologic site, landscape.
Covered Area: 4320 sqm; overall length 94m, width 54.5m, height 37m
Designer: Cultural Heritage Conservation Center (CHCC) of Tsinghua University Architecture and Design Research Institute Ltd Co. (THAD).
Design team: Cui Guanghai 崔光海 Architect in chief, Design Leaders Li Jing 李京, Wang Jing 汪静, Architecture design Xu Zhilan 徐知兰, Jie Xiao Feng 揭小凤;
Structural Engineer Leader Ma Zhigang 马志刚, Structure auditors Li Zengchao 李增超, Jiang Bingli 蒋炳丽; Water supply and drainage Guo Hanying 郭汉英,
Liu Jiuling 刘玖玲; Electrical engineering Guo Hongyan 郭红艳, Wang Haotian 汪昊天.

PROTECTIVE SHELTER FOR THE THOUSAND BUDDHA CLIFF OF GUANGYUAN, SICHUAN
Text Author: Andrea Giannotti
Photo credits: Wu Ji 五季
Location: Guangyuan City, Sichuan Province, China
Client: Guangyuan County Culture and Tourism Bureau
Years: 2011 – currently ongoing
Design Program: Protective shelter for the ancient statues carved on the cliff, visit pathways and boardwalks, facilities and equipment.
Floor Area: 3215 sqm; overall length 192m, height 45 m
Designer: Cultural Heritage Conservation Center (CHCC) of Tsinghua University Architecture and Design Research Institute Ltd Co. (THAD).
Design team for the Main Section: Cui Guanghai 崔光海 Architect in chief, Architecture Design Andrea Giannotti (2017, 2019, 2021 versions), Li Jing 李京, Wang Jing 汪静, Jie Xiao Feng 揭小凤 (2011 version); Structural Engineer Ma Zhigang 马志刚.
Design team for the Test Section: Cui Guanghai 崔光海 Architect in chief, Architecture Design and Construction Drawings Andrea Giannotti, Construction Drawings review Li Jing 李京; Structural Engineer Ma Zhigang 马志刚.

RIZHAO SCIENCE AND TECHNOLOGY MUSEUM, RIZHAO, SHANDONG
Text Author: Ilaria Bernardi
Photo credits: Xia Zhi 夏至, Zhang Guanyuan张广源 , LiJi 李季, Guan Fei 关飞
Location: Rizhao City, Shandong Province, China
Client: Rizhao City Construction Investment Group Co., Ltd
Years: 2014 - Completed 2020
Design Program: Museum building, landscape design.
Floor area: 16,163 sqm
Designer: China Architecture Design & Research Group (CAG), Land-based Rationalism PRC.
Design team: Cui Kai 崔恺 Architect in chief, Guan Fei 关飞 Design Leader, Architecture Design Ilaria Bernardi, Hu Shuijing 胡水菁, Ye Shuiqing 叶水清, Gao Fan 高凡, Peng Yan 彭彦; Structure Engineer: China Architecture Design & Research Group (CAG), Structure Design Leaders Wang Chunguang 王春光, Liu Jiantao 刘建涛.

NEW SCHOOL OF URBAN DESIGN IN WUHAN UNIVERSITY CAMPUS, WUHAN, HUBEI
Text Author: Ilaria Bernardi
Photo credits: 00, 08, 09, 11, 17: Yu Tao 喻弢； 01, 02, 03, 06, 07, 10, 14, 15, 16: Liji 李季； 20: Hu Shuijing 胡水菁
Location: Wuhan, Hubei, China
Client: University of Wuhan
Years: 2016 - Completed 2021
Design Program: School of Urban Design
Floor Area: 13.300 sqm
Designer: China Architecture Design & Research Group (CAG), Land-based Rationalism PRC.
Design team: Cui Kai 崔恺 Architect in chief, Yu Tao 喻弢 Design Leader, Architecture Design Hu Shuijing 胡水菁, Cao Yang 曹洋, Ilaria Bernardi, Zhang Xiaoyu 张笑彧, Zhou Yilin 周益琳.

DOI: 10.4458/8865-01

The Languages of China

Architecture, Canon and Institution in Contemporary Practice

Lucio Barbera[1]

Beijing as a Contemporary Architectural School

At first glance, the architecture of the Chinese city over the last twenty years appears summary and awkwardly emphatic, a mirror of all the commonplaces of contemporaneity, as compliant as that of yesterday, from the Maoist period, and often heavily academic. Yet, as one gradually deepens one's understanding of today's Chinese cities and of the university as a place for the education of architects – still holding a position of considerable importance even in relation to professional practice – it becomes increasingly clear that an exceptional school of architecture is actively at work in Beijing. It embodies a cultivated and conscious way of considering the city, territory, landscape, society, the relationships among them and their relationship with history: a contemporary tradition rooted in the history of the country's modernisation, founded by an extraordinary master, Liang Sicheng, and revitalised by significant heirs who, although not always closely aligned in professional and academic debate, are nonetheless deeply embedded in the historical reality unfolding before our eyes.[2]

Liang Sicheng himself was a predestined son. His father, Liang Qi Chao, occupies a central place in the history of modern China: a revolutionary, intellectual and exile, a "child prodigy" among the group of late-nineteenth-century reformers who attempted a great reform of the Empire through a synthesis of Western science and Chinese culture. Through both inheritance and education, Liang Sicheng was superbly prepared for the role that destiny assigned to him: leader of the first generation of Chinese scholars of architecture. Wilma Fairbank described him as "a bridge between the West and China".

We see him in a photograph from the early 1930s: extremely slender, dressed in Western clothes, his straight hair perfectly parted, thin specta-

1. Lucio Barbera, Professore Ordinario in Composizione Architettonica e Urbana, Sapienza Università di Roma (lucio.barbera@uniroma1.it).

2. Barbera 2006.

cles, composed posture – the bearing of someone fully aware of his status and his mission. Passionate about drawing and music, he studied Western sciences, English, and both Chinese and Western humanities at Tsinghua University in Beijing. In 1924 he went to Philadelphia, where he attended the Department of Architecture; in 1926 his father sent him from China an ancient book destined to change the course of his life: the Yingzao Fashi, an architectural manual compiled in 1103 during the Song dynasty. This text provided the key to a scientific study of Chinese historical architecture, which had never before been investigated using modern methods and had until then relied solely on artisanal transmission.

His life and studies unfolded during the most dramatic period of modern Chinese history: the Japanese invasion, the Second World War, and the civil war. Together with his wife, Lin Huiyin, a poet and refined intellectual, he travelled across China from north to south and from east to west, systematically surveying and documenting ancient architecture, drawing it with a precise and sensitive hand, analysing it and reconstructing what he himself would define as the grammar of Chinese architecture.

From Craft to Knowledge: The Grammar of Chinese Architecture

In constant flight before advancing armies, like a refugee, he miraculously managed to save drawings, photographs and ancient books, while pursuing the idea of an architectural modernity profoundly rooted in historical knowledge of his own culture. In 1946 he entrusted the very young Wu Liangyong – then only twenty-four years old – with the founding of the Department of Architecture at Tsinghua University. Wu, who would later become an eminent figure, represents the most direct continuation of that school.

Born in 1922, Wu Liangyong is today the living memory of the Beijing School. Yet this is not an inert memory: he designed, wrote and conducted research, bringing together all scales of architecture within a unified line of thought, from construction detail to urban form, from typological research to landscape design. In his watercolours and coloured ink drawings – at once profoundly modern and deeply Chinese – he continues to interpret the vast breath of his country's landscape.

China, like every empire, has been represented and defined throughout history above all by its language: a complex cultural and political canon,

constantly refined in order to reduce to unity the many Chinas and the many non-Chinas present within a space as vast as a continent and open to incursions by external cultures. The Middle Kingdom has experienced different dynasties and ethnic groups, fragmentation and recomposition, invasions and resistance. Yet, through all this, Chinese culture has survived as a unitary language of ever-increasing complexity.

Seen from the outside, it appears that it is not so much the peoples of China as its culture – its languages more than its spoken tongues, its architecture more than its architects – that constitute the true subject of history. Ideographic writing is the clearest symbol of this condition: a complex system capable of transmitting tens of thousands of ideas without phonetic mediation, legible across different dialects and languages.

The official spoken language, modern Mandarin, employs extremely ancient signs. It is thanks to this writing system that imperial edicts, poems, novels and administrative texts could be understood across regions separated by vast linguistic distances. China's political unity was, first and foremost, a unity of language.

China, with its unitary imperial canon – rigid yet extraordinarily inclusive – has, over time, assimilated all the cultures that approached it, transforming even the most aggressive influences into integrated elements. Like an organism capable of metabolising every novelty, Chinese culture has produced many different Chinas, all traceable back to a single ordering principle.

Read together, the four projects presented in this issue suggest a specific interpretation of contemporary institutional architecture in China. Rather than pursuing formal autonomy or symbolic rupture, they operate as mediating structures, designed to protect, organise and transmit cultural content across different temporal scales.

In this sense, architecture is not conceived as an expressive language, but as a regulated practice grounded in continuity, repetition and controlled variation. Whether addressing archaeological heritage, sacred landscapes, scientific knowledge or architectural education, each project functions as an infrastructural device that enables access without exhaustion, visibility without exposure, and use without loss of meaning.

This approach resonates with a longer historical trajectory in which cultural production in China has been structured through shared codes and canonical systems, privileging stability over originality and coher-

ence over individual expression. Far from implying a return to tradition, the projects demonstrate how contemporary architecture can engage critically with institutional frameworks, transforming constraints into operative principles.

Ultimately, the four cases illustrate an architectural position in which design acts as a form of cultural stewardship: not by representing history or knowledge, but by constructing the conditions for their continued existence and transmission.

Translation, Mediation and the Western Canon

This conception of architecture as a regulated cultural language finds a revealing parallel in the way Western artistic and architectural canons were received, translated and reinterpreted in twentieth-century China. As recent scholarship[3] has shown, the encounter with the Italian Renaissance did not take the form of passive imitation or stylistic adoption, but rather unfolded as a complex process of linguistic and conceptual mediation. In the writings of figures such as Fu Lei and Liang Sicheng,[4] Renaissance art and architecture were not approached as closed historical models, but as reservoirs of principles capable of being reactivated within a different cultural horizon.

Fu Lei's lectures on European art, and in particular on Leonardo da Vinci, exemplify an interpretative strategy grounded in translation rather than formal analysis. By mobilising categories drawn from Chinese literary criticism and aesthetics, Fu sought to render the emotional and spiritual qualities of Renaissance painting intelligible to a Chinese audience, privileging resonance over accuracy and affinity over genealogy. Leonardo's work was thus not presented as a foreign artefact, but as a living language whose meaning could be accessed through analogy, musicality and poetic evocation.

Liang Sicheng's engagement with Leonardo followed a different yet equally mediating path. Writing as an architect and historian in the early years of the People's Republic, Liang reframed Leonardo primarily as an engineer and planner, emphasising his empirical methods, technical imagination and infrastructural ambitions. In doing so, he aligned the Renais-

3. Chen 2017, pp. 355-366.

4. Liang 2013 (1952), pp. 131-134.

sance polymath with a vision of modernity compatible with planned development and institutional rationality. Leonardo became, in this reading, less a symbol of artistic genius than a figure through whom architecture, science and social organisation could be thought together.

A similar logic can be observed in the Chinese reception of Renaissance architectural theory, including the figure of Andrea Palladio. Palladio's work – introduced to China especially through the examples of Paul Cret, one of Liang Sicheng's teachers – was not assimilated as a repertory of forms, but as a system of rules, proportions and relationships capable of structuring space beyond stylistic contingencies. What was transmitted was not the image of the villa or the temple front, but the idea of architecture as an ordered practice grounded in measure, repetition and normative clarity. In this sense, Palladio functioned less as a historical reference than as a conceptual mediator, reinforcing an understanding of architecture as a discipline founded on shared principles rather than individual expression.

These episodes of cultural translation illuminate a deeper continuity between historical discourse and contemporary practice. They demonstrate how architectural meaning in China has long been constructed through processes of interpretation, adaptation and institutional framing, rather than through direct lineage or formal continuity. Read against this background, the four projects presented in this issue appear not as isolated responses to specific programs, but as part of a broader tradition in which architecture operates as a language of mediation – capable of absorbing external references, regulating internal transformations and sustaining cultural coherence across time.

References

Barbera 2006
Lucio Barbera, *I linguaggi della Cina*, "L'industria delle Costruzioni", n. 389, pp. 4-11.

Chen 2017
Chen Liu, *Leonardo Unveiled by Chinese Writers: The Reception of Renaissance Art in Twentieth-Century China*, "Journal of Art Historiography", no. 17, 2017, pp. 355–366.

Liang 2013 (1952)
Liang Sicheng, *Leonardo da Vinci: The Visionary Architectural Engineer* (1952), in Id., *Complete Works of Liang Sicheng*, China Architecture & Building Press, 2013, vol. 5, pp. 131–134.

DOI: 10.4458/8865-02

Chinese Architecture as Mediation between Modernities

Anna Irene Del Monaco[1]

Abstract: This reflection approaches contemporary Chinese architecture in terms of mediation, understood not as a secondary or conciliatory gesture, but as a core operative condition of architectural practice. Mediation here refers to architecture's capacity to organise relations between heterogeneous temporalities, forms of knowledge and regimes of authority, translating historical structures into spatial systems capable of functioning within present-day institutional frameworks. Rather than focusing on stylistic categories or formal genealogies, the analysis privileges architecture's role as a structuring apparatus, operating through regulation, continuity and controlled transformation.

Keywords: *Architecture as mediation, Heritage and Memory, Institutional continuity.*

Architecture as Mediation: Scope and Method

Architecture in contemporary China is increasingly confronted with conditions that exceed the traditional boundaries of design as formal invention. Rapid institutional transformation, large-scale heritage management, and the coexistence of long historical continuities with accelerated modernisation have foregrounded architecture's role as a mediating practice, rather than as an expressive or representational discipline. In this context, architectural projects are often required to negotiate between preservation and transformation, global technical standards and local spatial conventions, long-term cultural legitimacy and immediate institutional demands.

Unlike the Western modern project, often grounded in rupture, autonomy and expressive individuation, the Chinese condition examined here operates through institutional continuity and regulated transformation.

The four projects of institutional architecture discussed here may be read as contemporary episodes within a long historical trajectory in which architecture in China is not primarily conceived as an expressive language, but as a regulative form, capable of mediating between cultural continuity, historical transformation and institutional responsibility. Rather than proposing a stylistic position or a recognisable formal repertoire, these projects articulate an architectural attitude grounded in mediation: be-

1. Anna Irene Del Monaco, Professore Associato in Composizione Architettonica e Urbana, Sapienza Università di Roma (anna.delmonaco@uniroma1.it).

tween past and present, protection and use, permanence and change. This perspective resonates with the interpretation advanced by Peter Rowe and Seng Kuan, for whom modern Chinese architecture cannot be understood through a simple opposition between tradition and modernity, but rather through a continuous process of negotiation between *essence* and *form*. In this sense, the contemporary project does not operate by reproducing inherited forms, nor by rejecting them outright, but by translating deep-seated cultural structures into operative spatial systems capable of responding to new institutional, technological and social conditions. This position challenges dominant narratives of architectural modernity that equate innovation with rupture and authorship with autonomy.

Lucio Barbera's reflections on *The Languages of China*[2] provide a crucial theoretical framework for understanding this process. By conceiving culture as a system of languages – where writing, architecture, spatial order and political authority are inseparable – Barbera shifts attention away from architecture as object and towards architecture as structuring practice. Within this framework, continuity is not ensured by the persistence of forms, but by the transmissibility of rules, codes and procedures. Architecture thus participates in a broader cultural economy in which stability is achieved not through immobility, but through regulated transformation.

The four projects make this condition tangible in different yet convergent ways. In the protective shelters for the archaeological sites of Zhoukoudian and Guangyuan, architecture deliberately renounces any claim to autonomy or formal protagonism. Instead, it assumes the role of *protective and environmental infrastructure*, designed to stabilise fragile contexts while minimising physical and symbolic interference. Here, the architectural project is defined less by its visible form than by its capacity to regulate climate, movement, perception and access over time.

In these contexts, modernity manifests itself not as a gesture of rupture, but as the ability to render conservation operative. The architectural intervention becomes a technical and cultural device that allows the site to endure, transforming protection into an active design principle. Reversibility, minimal impact and environmental mediation are not constraints imposed from outside, but integral components of the architectural concept itself. A parallel yet distinct logic operates in the Rizhao Science and Technology Museum and in the School of Urban Design at Wuhan University. In these cases, the focus shifts from the protection of material

2. Barbera 2006.

heritage to *the institutional transmission of knowledge*. Yet architecture once again refrains from acting as a representational container. Instead, it constructs spatial frameworks within which scientific understanding and architectural education can be practiced, experienced and renewed.

At Rizhao, scientific knowledge is not monumentalised but spatialised through sequences of movement, controlled light and sectional continuity. The building operates as a cognitive device, where circulation, structure and perception are inseparable. At Wuhan, architectural education is embedded within an environment that actively shapes modes of interaction, collaboration and learning. Here, space itself becomes pedagogical, operating through use rather than through symbolic statement.

This understanding of architecture as an open, time-based process finds a clear echo in Vieri Quilici's reflections on the *life of works*. Architecture is not conceived as a closed artefact, complete at the moment of construction, but as a structure destined to be transformed by use, interpretation and institutional practices. The four projects do not seek to fix meaning; rather, they establish *conditions of possibility* within which meaning can continue to evolve. Within this framework, the relationship with history is neither linear nor reconciliatory. The tension between continuity and transformation recalls the image of the *angel of history* evoked by Walter Benjamin and later elaborated by Hannah Arendt[3]: an awareness of accumulated layers of the past, confronted with the irreversible movement of time. The architectural projects examined here appear to accept this condition, positioning themselves not as instruments of symbolic redemption, but as practices of responsibility operating between memory and necessity.

This dynamic may be further clarified through Enzo Melandri[4]'s conceptual figure of *the line and the circle*. The line of progress – technological innovation, institutional reform, modernisation – runs inevitably through contemporary Chinese architecture. Yet this linear movement is continuously folded back into a circular system of norms, codes and legitimising structures. Architecture operates precisely within this tension, not by resolving it, but by holding it in a productive state of equilibrium.

In conclusion, the four projects do not propose an exportable model nor a unified architectural language. Instead, they delineate a cultural position in which architecture renounces exception in order to assume responsibility for duration, replaces expression with mediation, and recognises de-

3. Arendt, Benjamin 2017 (2006).
4. Melandri 2004.

sign not as the site of individual authorship, but as a practice embedded within institutional and historical frameworks. It is within this calibrated, non-heroic position that a specific and meaningful form of contemporary architectural practice in China may be identified today.

This approach to heritage and preservation may be further clarified through the perspective articulated by *The Past Is a Foreign Country*.[5] Lowenthal's argument – that the past is irreducibly distant and cannot be recovered without transformation – offers a critical lens through which the architectural strategies adopted at Zhoukoudian and Guangyuan can be more precisely understood. Preservation, in this view, is not an act of restoration aimed at recovering an original state, but a form of mediation that inevitably reshapes the past in order to render it intelligible and inhabitable in the present. Rather than denying this distance, the architectural interventions examined here explicitly acknowledge it. By avoiding reconstruction, scenographic completion or symbolic immersion, the projects refuse the illusion of proximity to the past. Instead, they construct controlled environments that stabilise fragile sites while maintaining their temporal otherness. The archaeological cave and the sacred cliff are neither frozen nor re-enacted; they are framed, protected and made accessible through architectural systems that regulate climate, movement and perception without collapsing historical distance. In this sense, preservation becomes an active cultural practice rather than a conservative one. Architecture does not claim to restore the past, but to *host it*, accepting its foreignness and organising the conditions under which it can be encountered without being consumed. This position aligns preservation with responsibility rather than nostalgia, and situates architectural design as a critical intermediary between irreversible loss and contemporary use.

Two Configurations of Modernity

Whereas the Western tradition, as reconstructed by Frances Yates[6], conceived memory as a spatial theatre of images, the Chinese tradition embedded memory within institutional continuity and ritual order. Contemporary Chinese architecture does not build theatres of recollection; it constructs conditions of regulated duration.

Within international debates on modern Chinese architecture, attempts to define a coherent theoretical framework have often oscillated between

5. Lowenthal 1999.
6. Yates 1966.

narratives of rupture and accounts of stylistic adaptation. Yet a number of scholars have argued that the specificity of Chinese modernity lies less in formal innovation than in the capacity of architecture to operate as a mediating apparatus between historical continuity and institutional transformation. In this perspective, modern architecture in China does not emerge as a negation of inherited spatial orders, but as their reconfiguration within new political, technical and administrative regimes. Early twentieth-century figures working in China already framed architectural practice as a form of cultural mediation rather than a simple transfer of Western models, acknowledging the necessity of negotiating between imported systems of knowledge and deeply rooted spatial conventions. While such positions remain historically situated and often marked by asymmetrical power relations, they nonetheless anticipate a recurring condition in which architecture functions as an intermediary between global modernity and local legitimacy.[7]

More recent scholarship has further articulated this condition by shifting attention from architecture as a formal language to architecture as an institutional and infrastructural practice. In particular, writings by architects and historians working across Chinese and international contexts have emphasised how contemporary projects are embedded within long-standing systems of governance, territorial organisation and cultural administration. From this standpoint, architecture operates not primarily through symbolic expression, but through its capacity to stabilise, coordinate and render legible complex social and spatial processes. The projects discussed here align closely with this interpretation: whether addressing heritage preservation, scientific dissemination or architectural education, they foreground architecture's role as a structuring framework rather than as an autonomous object. Mediation, in this sense, becomes not a secondary attribute but a defining condition of practice, positioning contemporary Chinese architecture within a broader discourse on institutional continuity and infrastructural logic.

The notion of architecture as mediation acquires further depth when examined through both early and contemporary international interpretations of Chinese architectural modernity. In the early twentieth century, Henry Killam Murphy explicitly framed architectural practice in China as a cultural and institutional negotiation rather than a stylistic import. Writing from within the context of missionary and educational commis-

7. Murphy 1930.

sions, Murphy argued for a modern architecture capable of incorporating Chinese spatial principles, constructional logic and symbolic order without resorting to historical imitation. Although embedded in asymmetrical cultural and political conditions, his position is significant in that it recognised mediation – rather than formal translation – as the core task of architectural practice in China.[8]

From a contemporary perspective, Xing Ruan has developed a more structurally grounded interpretation of this condition. Ruan situates modern and contemporary Chinese architecture within a long continuum of state formation, infrastructural development and institutional continuity, emphasising how architecture operates as a stabilising apparatus rather than an expressive medium. In his account, architectural meaning is produced less through formal innovation than through the capacity to organise territory, regulate collective life and sustain cultural legitimacy over time. Read together, Murphy's early intuition and Ruan's critical framework delineate a field in which mediation is not an episodic strategy but a persistent structural condition – one that resonates directly with the four projects examined here, and with their refusal of both stylistic rupture and nostalgic reconstruction.

If Ruan's interpretation has shown how Chinese modernity was shaped through unexpected methodological affinities between the Beaux-Arts tradition and Chinese artisanal culture, the projects discussed here suggest a further displacement. What emerges is not primarily the continuity of a formal syntax, but the gradual transformation of architecture into an institutional device capable of regulating time, use and memory.[9] In this sense, mediation does not operate at the level of stylistic adaptation, but at the level of structural responsibility, where architecture assumes the task of organising historical continuity within changing administrative and social frameworks.

Courtyard, Knowledge and the Question of Modernity

Rather than framing contemporary Chinese architecture as a confrontation between tradition and global modernity, it is more productive to approach it as an epistemological negotiation between distinct modes of spatial knowledge. As articulated by Xing Ruan, the courtyard operates not simply as a typological residue but as a cultural and cogni-

8. Xing 2021, pp. 60–90, pp. 120-145.
9. Xing 2002.

tive device through which space, time and ethical equilibrium are held together. In this sense, architecture becomes a medium for structuring life rather than an autonomous object, with the void acting as an active generator of meaning, experience and relational order. This epistemic framework finds constructive continuity in the work of Wang Shu[10], whose notion of sustainability departs from techno-scientific optimisation to recover architecture as a historically embedded system of climatic intelligence, material reuse and social coexistence. His emphasis on recycled materials, rammed earth and artisanal processes does not aim at symbolic regionalism, but at reactivating a long-standing architectural logic in which material, climate and human practice form an integrated whole. Sustainability, in this reading, is not a stylistic agenda but a form of inherited knowledge that precedes modern environmental discourse and challenges its universalising assumptions.

Within this continuum, Chang Yung Ho positions contemporary Chinese architecture explicitly between two modernities: an imported Western modernity grounded in object-based spatial production and linear perspective, and an indigenous modernity rooted in enclosure, introversion and the primacy of the void. Chang's work reframes this condition not as a conflict but as a productive overlap, where time is designed alongside space and architecture unfolds as a sequence of lived experiences rather than as a fixed visual composition. A comparable concern with continuity, spatial enclosure and cultural reinvention also emerges in the heritage regeneration projects of Zhang Jie[11] at Tsinghua University, notably in the Jingdezhen Pengjia Alley Compound, awarded the 2024 RIBA International Awards for Excellence. Situated within the historic context of courtyard-based ceramic workshops, the project exemplifies how preservation and contemporary practice can converge through the careful reactivation of spatial frameworks rather than through formal imitation. Taken together, the positions of Ruan, Wang Shu, Chang Yung Ho and Zhang Jie delineate a shared epistemological ground in which the relevance of the courtyard in contemporary Chinese architecture lies less in its formal persistence than in its capacity to operate as a resilient spatial framework.

In conclusion, the four projects do not propose an exportable model nor a unified architectural language. Instead, they delineate a cultural

10. Chen 2024.
11. Li 2025.

position in which architecture renounces exception in order to assume responsibility for duration, replaces expression with mediation, and recognises design not as the site of individual authorship, but as a practice embedded within institutional and historical frameworks. Unlike dominant narratives of architectural modernity that equate innovation with rupture and autonomy with expressive individuation, the condition examined here suggests a different paradigm: one in which transformation is achieved through regulated continuity rather than disruption. It is within this calibrated, non-heroic position that a specific and meaningful form of contemporary architectural practice in China may be identified today.

Two Modernities

"If the modern is that which sets history in motion," as Lucio Barbera has argued, then modernity cannot be reduced to a chronological period or a stylistic rupture, but must be understood as a dynamic principle that reactivates the temporal structure of history itself.[12] In this sense, the question is not whether contemporary Chinese architecture is modern, but how it mobilises history. Reinhart Koselleck has shown that modernity emerges when the tension between the "space of experience" and the "horizon of expectation" becomes structurally unstable, producing acceleration and the projection of radically new futures.[13] Western modernity has frequently unfolded within this widening gap, privileging anticipation, rupture and the forward thrust of historical time. At the same time, as Jürgen Habermas has maintained, modernity also presents itself as an "unfinished project," grounded in critique and in the continuous redefinition of normative frameworks.[14] Yet Walter Benjamin reminds us that this movement is inseparable from shock, fragmentation and the interruption of historical continuity.[15]

Against this background, the projects examined here suggest a different configuration of the modern. History is indeed set in motion, but not primarily through negation or acceleration. Instead, transformation operates through recalibration, through the regulated reorganisation of institutional and spatial continuities. If one modernity intensifies the distance between past and future, the other works within that distance,

12. Barbera 2019.
13. Koselleck 1985.
14. Habermas 1983.
15. Benjamin 1940.

structuring it. Mediation thus becomes the operative space in which distinct temporal logics are held in tension, and modernity appears not as rupture, but as the sustained responsibility for duration.

Recent scholarship on China has increasingly framed modernity not as the delayed reception of a Western programme, but as a plural and internally differentiated field shaped by ideology, institutional reform and competing temporal regimes. Jiawen Han, for instance, explicitly adopts the framework of "multiple modernities" to read contemporary Chinese architectural culture between state agendas and professional positioning.[16] In a different register, Edward Denison has reconstructed Chinese architectural modernity as a heterogeneous formation, mediated by multiple sources and not reducible to a single modernist genealogy.[17] Complementary perspectives emerge from studies that link modernity to the production of urban form and governance structures—where the built environment becomes an instrument through which society and institutions are remade over time.[18] Read against this backdrop, the four projects discussed here can be understood as contemporary instances of a specifically institutional modernity: one that sets history in motion not by rupture alone, but by reorganising the conditions of duration, legitimacy and use within evolving administrative frameworks.

References

Arendt, Benjamin 2017 (2006)
Hannah Arendt, Walter Benjamin, *L'angelo della storia, Testi, lettere, documenti*; Italian edition Giuntina, 2017 (2006).

Barbera 2006
Lucio Barbera, *I linguaggi della Cina*, "L'industria delle Costruzioni", n. 389, pp. 4-11.

Barbera 2019
Lucio Barbera, *La città radicale di Ludovico Quaroni*, Gangemi, , 2019, pp 9-20.

Benjamin 1940
Walter Benjamin, *On the Concept of History* (1940), in *Selected Writings*, Vol. 4, Harvard University Press, Cambridge (MA), 2003, pp. 389-400 or *The Arcades Project*, Harvard University Press, 1999.

16. Han 2017
17. Denison 2018
18. Lu 2006

Bokyoung 2025
Kim Bokyoung, *Between Two Modernities in Chinese Architecture: Chang Yung Ho*, SPACE, 2025

Chen 2024
Chen Xiaorong, *Wang Shu: 'The Sustainable Architecture System Has Developed into a Movement.'* UNESCO Courier, 22 January 2024 (last updated 30 January 2024).

Denison 2018
Edward Denison, Architecture and the Landscape of Modernity in China before 1949, Routledge, 2018.

Habermas 1983
Jürgen Habermas, *Modernity. An Incomplete Project*, in *The Anti-Aesthetic: Essays on Postmodern Culture*, ed. Hal Foster, Bay Press, Seattle, 1983, pp. 3–15.

Han 2017
Jiawen Han, *China's Architecture in a Globalizing World: Between Socialism and the Market*, Routledge, 2017.

Koselleck 1985
Reinhart Koselleck, *Futures Past: On the Semantics of Historical Time*, MIT Press, 1985 (orig. ed. 1979), in part. pp. 255–275.

Li 2025
Li Han, *Tsinghua professor Zhang Jie wins 2024 RIBA International Awards for Excellence*, https://www.tsinghua.edu.cn/en/info/1245/13660.htm (november 2025).

Lowenthal 1999
David Lowenthal, *The Past is a Foreign Country,* Cambridge University Press 1999.

Lu 2006
Duanfang Lu, Remaking Chinese Urban Form: Modernity, Scarcity and Space, 1949–2005, Routledge, 2006

Melandri 2004
Enzo Melandri, *La linea e il circolo. Studio logico-filosofico sull'analogia*, Quodlibet, 2004.

Murphy 1930
Henry Killam Murphy, *Adaptive Architecture: The Chinese Example*, McGraw-Hill, 1930, pp. 3-12, pp. 45-52.

Yates 1966
Frances A. Yates, The Art of Memory, Routledge & Kegan Paul, 1966.

Xing 2021
Xing Ruan, *Confucius' Courtyard: Architecture, Philosophy and the Good Life in China*, Bloomsbury, 2021, pp. 60–90, pp. 120-145.

Xing 2002
Xing Ruan, *Accidental Affinities: American Beaux-Arts in Twentieth-Century Chinese Architectural Education and Practice*, "Journal of the Society of Architectural Historians", vol. 61, no. 1, March 2002, pp. 30–47.

DOI: 10.4458/8865-03

Four Projects of Institutional Architecture in China (2012–2022)

Andrea Giannotti[1]

Abstract: This essay examines four public and institutional projects completed in China between 2012 and 2022, focusing on heritage protection, cultural dissemination, and architectural education. It situates these works within the framework of a highly centralised state system and large state-affiliated design institutes. The analysis highlights the advisory and strategic role of architects throughout complex institutional processes. Protection and promotion emerge as shared objectives, linking cultural preservation with economic and social development. Together, the projects illustrate the operational dynamics of contemporary public architecture in China.

Keywords: *Chinese institutional architecture, heritage, museum, school.*

The aim of this essay is to provide a temporary snapshot of architectural practice in contemporary China, focusing exclusively on public and institutional architecture. Four recently completed projects are presented and examined, each addressing issues related to the protection and valorisation of cultural heritage, cultural tourism, and university education. The projects span a time frame from approximately 2012 to 2022.

This period is particularly significant: for public investments of this scale, ten years represents a realistic duration within which complex institutional processes – from initiation to completion – can unfold. During this time, projects are often exposed to the risk of suspension, delay, or even partial restart, due to shifts in political priorities at both local (municipal and provincial) and national levels. Although architectural design might initially appear to play a secondary role within such a complex institutional framework, the analysis of these projects' development reveals a different picture. In all four cases, architects were involved from the earliest stages, participating in pre-design meetings and strategic discussions. Public commissioning bodies – whether municipal, provincial or national – often lack the technical tools to visualise outcomes in terms of time, cost and performance.

1. Andrea Giannotti, Architect (arch.giannotti@hotmail.com).

Within this context, the architect's professional expertise becomes essential throughout the entire process, extending well beyond the production of drawings and assuming an advisory role during decision-making phases. Culture constitutes the common ground shared by all four projects. The nature of the cultural content addressed – whether tangible heritage, symbolic landscapes or educational institutions – has profoundly influenced both the design approach and the final outcome in each case. When interventions concern the protection and enhancement of historical and artistic heritage sites recognised at national and international levels, the visibility of the project extends beyond local boundaries, aiming for international recognition. A defining characteristic of these projects is the uniqueness of their sites. There is no other location comparable to the archaeological remains of the Peking Man Cave or the Thousand Buddha Cliff of Guangyuan. Although the type "protective shelter" might theoretically be adapted to similar contexts, the specific historical, geographical and morphological conditions render each architectural response necessarily singular. By contrast, project types such as a science museum or a university building – while no less significant – address forms of intangible cultural heritage related to knowledge production and transmission. In these cases, architectural responses can be compared with similar institutions worldwide.

Nevertheless, the specificity of the context in which each intervention is conceived, together with the conceptual framework established well before the first design sketch, plays a decisive role in shaping each project. The Rizhao Science and Technology Museum, for instance, derives its distinctive character from its foundational premise: the exhibition and public dissemination of the work of the internationally renowned physicist Samuel Chao Chung Ting. As the only museum dedicated to his scientific legacy, its uniqueness is intrinsic. Similarly, the School of Urban Design at Wuhan University was required to achieve a particularly high level of quality, not only among newly built schools of architecture in China but also in an international context. As the environment in which future architects and urban designers are educated, the building was expected to embody exemplary standards of modernity, liveability, accessibility and sustainability.

These projects must be analysed within the broader context of con-

temporary China, where the People's Republic operates as a highly centralised state. Commissioning bodies are directly linked to central government institutions or to local governments at municipal and provincial levels. Public funding is subject to strict financial control and closely tied to broader economic conditions.

Although the involvement of multiple governmental levels can complicate development, three of the four projects examined here were completed within four to six years to the satisfaction of all parties. The fourth project is currently undergoing final approval procedures. Taken together, these cases suggest that the model of public investment in projects of national interest can be considered largely successful.

A significant contribution to this outcome lies in the role of the selected design institutes. In all four cases, the projects were entrusted to state-owned or university-affiliated architecture and design institutes. The protective shelters for the Peking Man Cave and the Thousand Buddha Cliff were designed by the Cultural Heritage Conservation Center (CHCC), part of the Tsinghua University Architecture Design and Research Institute (THAD). The Rizhao Science and Technology Museum and the Wuhan University School of Urban Design were designed by Land-Based Rationalism D.R.C., part of the China Architecture Design and Research Group (CAG). These large multidisciplinary institutes, based in Beijing, have played a distinctive historical role since the founding of the People's Republic of China in 1949, when they were the principal institutions responsible for architectural design and urban planning. Despite subsequent reforms and the gradual opening of the market, they have remained technically advanced and institutionally influential, maintaining close connections with central government bodies.

Given that all four projects belong to the public sphere, economic considerations play a crucial role not only in defining initial budgets but also in evaluating outcomes. The design task extends beyond compliance with building codes and technical requirements, encompassing broader economic and social objectives. Protection and promotion emerge as the key themes shared by these projects, and their integration constitutes a central measure of design quality. In each case, the architectural response seeks to balance these objectives, preserving cultural value while making it accessible and meaningful for present and future generations.

Beyond their technical capacity, these institutes operate as mediating structures between political decision-making and spatial implementation. Their scale and multidisciplinary organisation enable them to coordinate architectural design, engineering, heritage conservation, cost control and administrative procedures within a single framework. This organisational model reduces fragmentation and allows continuity throughout long and complex development processes. In this sense, the architectural project becomes not only a design exercise but also a managerial and institutional operation, in which spatial decisions are inseparable from governance structures and public accountability.

Protective Shelter for the archaeological site of Peking Man Cave, Zhoukoudian, Beijing. 2013-2018. Overview from North

DOI: 10.4458/8865-04

Protective Shelter for the Archaeological Site of Peking Man Cave, Zhoukoudian, Beijing. 2013-2018

Andrea Giannotti[1]

Abstract: The protective shelter designed for the Peking Man Cave at Zhoukoudian addresses one of the most radical conditions faced by contemporary architecture: intervention within an active archaeological site of outstanding scientific value, where the architectural design cannot assert autonomy and must instead operate at the threshold between protection and accessibility. Recognised as a UNESCO World Heritage Site, the cave preserves stratified evidence of human evolution spanning hundreds of thousands of years, requiring both strict conservation measures and the possibility of continued research and public interpretation. The project responds to this challenge through a semi-enclosed, reversible architectural system conceived according to principles of minimal intervention and passive environmental control. By suspending a large-span protective structure above the cave without touching the archaeological ground, the design stabilises climatic conditions while preserving the site's physical and perceptual integrity. At the same time, the shelter functions as a spatial device that organises access, circulation and interpretation, enabling visitors to experience the site without compromising its authenticity. Rather than dissolving the tension between permanence and use, the project deliberately operates within it. Architecture here is neither an object nor a representation, but an infrastructural framework that simultaneously guarantees the long-term preservation of a fragile heritage and its transmission as scientific knowledge. The Zhoukoudian intervention thus exemplifies a theoretical position in which architecture is understood as a mediating practice, negotiating between temporal depth, environmental responsibility and cognitive accessibility.

Keywords: *Archaeological heritage, Architectural conservation, Minimal intervention, Reversibility, Passive environmental design*

The archaeological site of the Peking Man Cave is one of the most important of its kind in Asia and has been acknowledged by the World Heritage List of UNESCO since 1987. It consists of a deep natural cave located on the North side of a limestone mountain foothill, discovered and studied by archaeologists during the 1920s and 1930s. Within the cave were found remains of hominids and humans, animal fossils and

1. Andrea Giannotti, Architect (arch.giannotti@hotmail.com).

tools dating from the Middle Pleistocene to the more recent Palaeolithic period. As indicated by the World Heritage Centre of UNESCO, "it has led to the discovery of the remains of Sinanthropus Pekinensis, who lived in the Middle Pleistocene, along with various objects, and remains of Homo sapiens sapiens dating as far back as 18,000-11,000 B.C. The site is not only an exceptional reminder of the prehistorical human societies of the Asian continent, but also illustrates the process of evolution." In the several stratigraphic layers of the cave were found remains of Homo erectus (700,000-200,000 years ago), of archaic Homo sapiens (200,000-100,000 years ago) and of Homo sapiens sapiens (30,000-10,000 years ago), together with thousands of tools, ash deposits and burnt bones that testify to the use of fire by Homo pekinensis.

Since the 1990s, a comprehensive conservation plan for the Zhoukoudian site has been elaborated by the National Administration of Cultural Heritage, which listed it as a Key Protected Cultural Heritage Site of National Significance. The Beijing Municipal Government promulgated the Regulations for the Conservation of the Peking Man Site at Zhoukoudian in 1989, later revised in 2009, effectively preventing planned urban expansion as well as mining and industrial activities in its surroundings.

In July 2012, a heavy rainstorm caused the collapse of debris from the cave walls – already uncovered of their natural roofing – onto the bottom ground. While this event led to the accumulation of soil and debris, it also resulted in the discovery of further layers of archaeological interest, making evident the extreme urgency of a protective and conservation-oriented intervention.

The conservation plan had to be drawn and implemented within a relatively short timeframe. During 2013, the client, the Zhoukoudian Museum (a state-owned institution), after receiving approval from the National Administration of Cultural Heritage and technical recommendations from the World Heritage Centre and ICCROM, commissioned the Cultural Heritage Conservation Centre (CHCC) of Tsinghua University Architecture and Design Institute to define the project targets and design goals. The project was undertaken and managed by state-owned bodies and entrusted to an institutional design office with long-standing expertise in heritage conservation and established connections with UNESCO advisory bodies. This framework proved decisive for the project's outcome, particularly in ensuring a continuous and effective dialogue between national

institutions, international organisations and the design team. The final construction drawings were completed in November 2014; construction began in May 2015 and was completed in August 2018. The Peking Man Cave site reopened to the public in September 2018.

The design brief was elaborated and formalised in 2013. Although the architect was involved as an advisor in its definition, the project was required to strictly comply with the brief's requirements. This condition did not exclude architectural discussion; rather, it significantly constrained the range of admissible solutions. In the specific context of an active archaeological site of outstanding scientific value, this reduction of options ultimately became a strength, directing the project toward clarity of intent and coherence of outcome – an assessment that could only be fully verified after completion.

The project targets, as outlined in the design report, can be grouped into two main thematic areas. The first concerns an ecological and environmental conservation strategy, addressing the protection of the archaeological site from climatic agents and the insertion of a contemporary architectural structure within an entirely natural landscape, while respecting and enhancing the mountain's morphology and vegetation. The second area focuses on the conservation, valorisation and transmission of the site's exceptional cultural and scientific heritage, including the provision of appropriate spaces for ongoing archaeological research, public access and interpretation.

With regard to the first group of targets, the brief required the construction of a protective shelter capable of shielding the cave from rainwater, wind, snow and ice – agents that had progressively compromised the site's stability over centuries and posed an immediate risk of further collapse. In addition, the adoption of environmentally passive design strategies was explicitly recommended to mitigate the extreme seasonal temperature variations typical of the Beijing region. The brief therefore indicated a semi-closed architectural solution capable of moderating internal climatic conditions while maintaining visual and environmental continuity with the surrounding landscape.[2]

The proposed design responded to these requirements. The protective structure takes the form of a large roofing curtain drawn over the mountain flank, effectively capping the open-air cave while merging with

2. Icomos 1990.

the site's morphology. To avoid any interference with the archaeological ground, the structure is anchored beyond the cave's northern edge – on the relatively flat foothill terrain – and on the mountain ridge to the South, beyond the cave's upper limit. Spanning approximately 80 metres with a height difference of 37 metres, the roof functions as a large arched vault, stretched over the cavity and subtly bent to adapt to the mountain profile without touching it.

The overall covered area measures approximately 3,847 square metres. From the outset, the designer deliberately reduced the shelter to the minimum necessary extent, in accordance with the conservation principles of minimal intervention and reversibility.[3] The structure consists of an irregular squared grid of tubular steel elements with variable sections, whose longitudinal beams form the main load-bearing arches. The non-linear large-span system was carefully engineered to allow for potential dismantling in the future, thus preserving the integrity and authenticity of the site.

Once the structural framework was defined, the roofing system was developed as a double-skin, semi-enclosed envelope. The external aluminium panels – referred to as "leaves"– are individually inclined to ensure complete rainwater discharge toward peripheral gutters, while maintaining controlled gaps between adjacent elements. These gaps allow filtered daylight and natural ventilation, reducing humidity and temperature fluctuations through entirely passive means and achieving low energy consumption.[3]

On the inner side of the envelope, the aluminium leaves are replicated beneath the steel structure using glass-reinforced panels with a limestone texture. The surface pattern was derived from 3D scans of the cave walls, producing an immersive spatial continuity between the natural cavity and the artificial covering. On the exterior, the decision to allow self-growing and climbing vegetation to colonise the roof enables the structure to gradually blend into the green mountain landscape. Seen from a distance, the vegetated shell evokes the image of a Chinese dragon – an allusion reinforced by the site's traditional name, Longgushan (Dragon Bone Mountain).

Beside environmental protection, the second group of project targets addressed the public experience of the site and the communication of its

3. Hill 2012.

scientific value. The design therefore provides dedicated spaces for archaeological research, interpretation and controlled public access. The main entrance is located on the northern side, marked by a lightweight aluminium canopy distinct from the primary structural supports. Visitors descend via a sequence of steps to the covered area and circulate along elevated wooden boardwalks, ensuring unobstructed views of the cave while avoiding any contact with the archaeological ground. Observation platforms positioned at strategic points offer multiple perspectives of the site, while non-invasive display techniques – such as projected images and multimedia installations – support interpretation without altering the physical fabric of the cave.[4]

In addressing the imperative of heritage conservation, the project adopts a series of architectural strategies that deliberately avoid stylistic emphasis. Rather than asserting a contemporary formal language, the intervention seeks to fade into its surroundings, responding to the genius loci of the site – identified in the cave's primitive character and its exceptional scientific significance as evidence of early human life. By applying conservation principles from the earliest stages of design, the project achieves a condition in which the artificial shelter appears not as an added object, but as an almost inevitable solution.

In 2019, the project received the Golden Prize of the ARCASIA Awards for Architecture in the category of Conservation Projects. As noted by the jury, "Architecture, art, archaeology and sophisticated technology come together in this unusual design which nurtures and becomes one with the terrain and the green around it, while strictly keeping its promise to function. This semi-enclosed, single-spanned and double-skinned structure carefully protects the precious and fragile world heritage site in its natural condition, by protecting it from rain while allowing air and indirect light. Keeping the concept of minimum interference and reversibility, the structure is designed to merge seamlessly with the surroundings over time".

4. Icomos 2005.

References

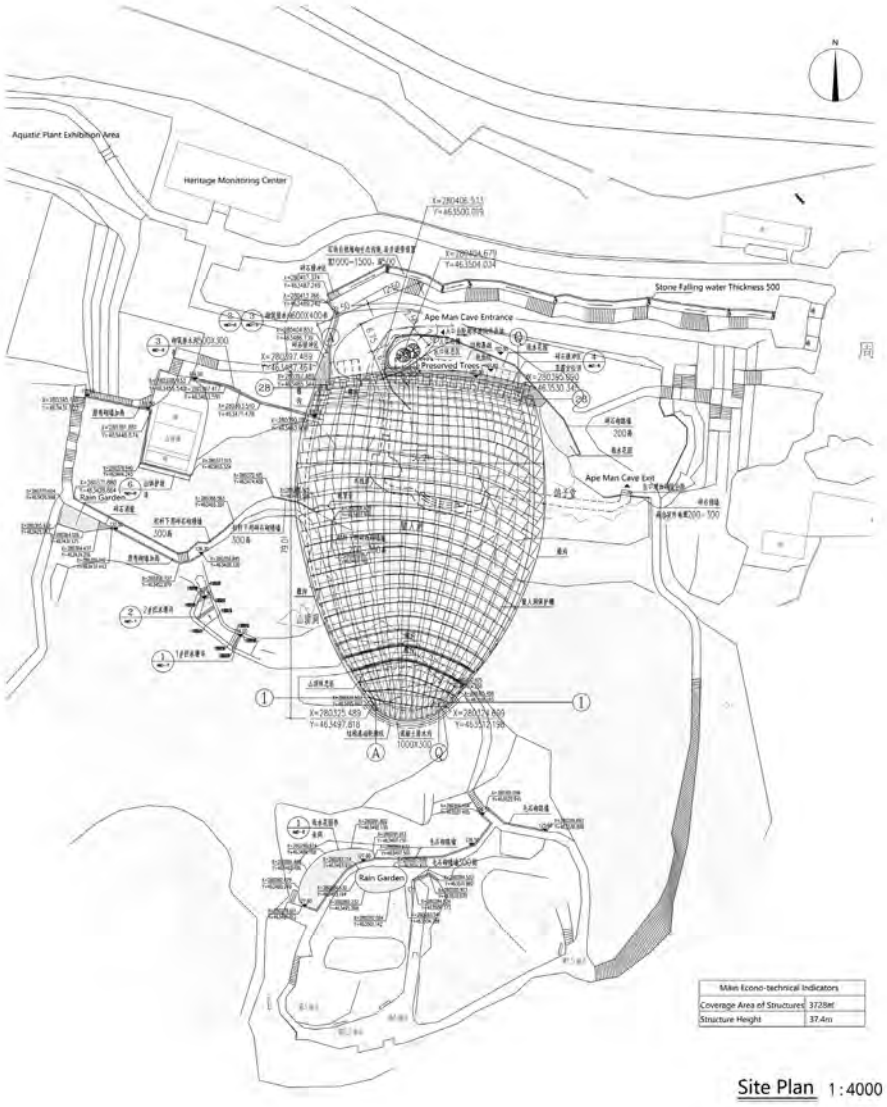
Icomos 1964
ICOMOS, *International Charter for the Conservation and Restoration of Monuments and Sites (Venice Charter)*, 1964.

Icomos 1990
ICOMOS, *Charter for the Protection and Management of the Archaeological Heritage*, 1990.

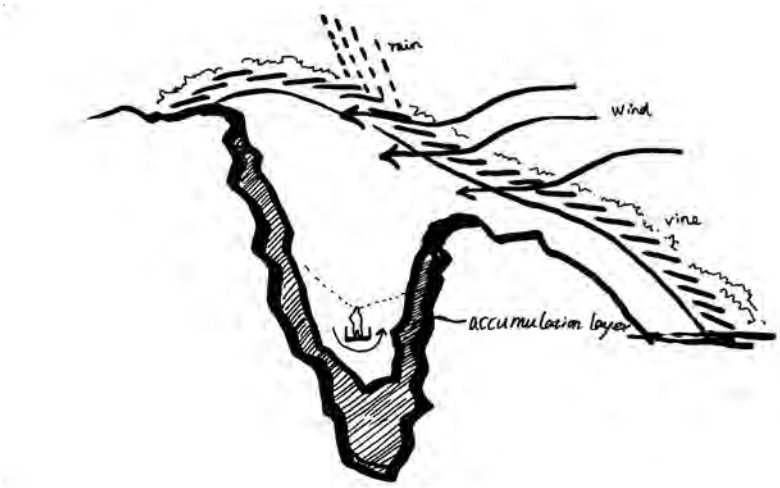
Hill 2012
Jonathan Hill, *Weathering Architecture*, Routledge, London, 2012.

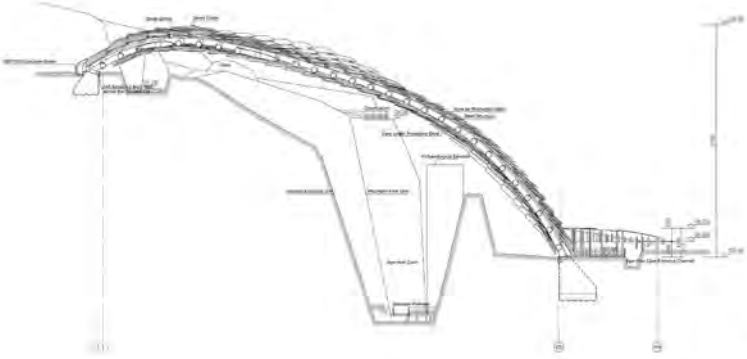
Icomos 2005
ICOMOS, Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas, 2005.

Protective Shelter for the archaeological site of Peking Man Cave, Zhoukoudian, Beijing. 2013-2018 .
Fig. 1. Overview from East, Fig. 2. Exterior view from East, Fig. 3. Overview from West.

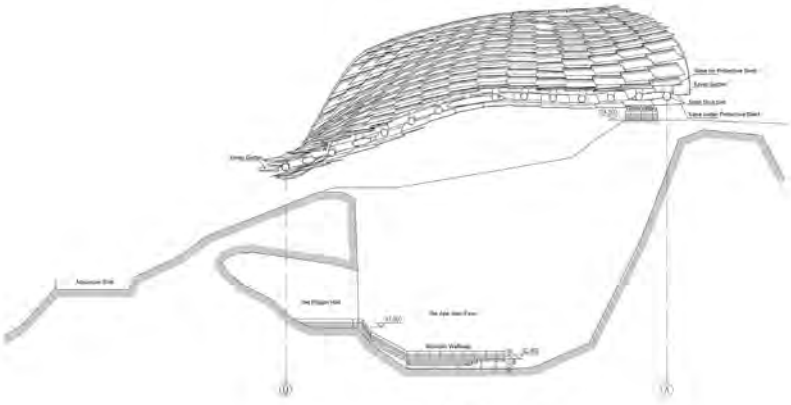


Protective Shelter for the archaeological site of Peking Man Cave, Zhoukoudian, Beijing. 2013-2018.
Fig. 4-7. Site Plan, Concept sketch, Section South-North, Section East-West.

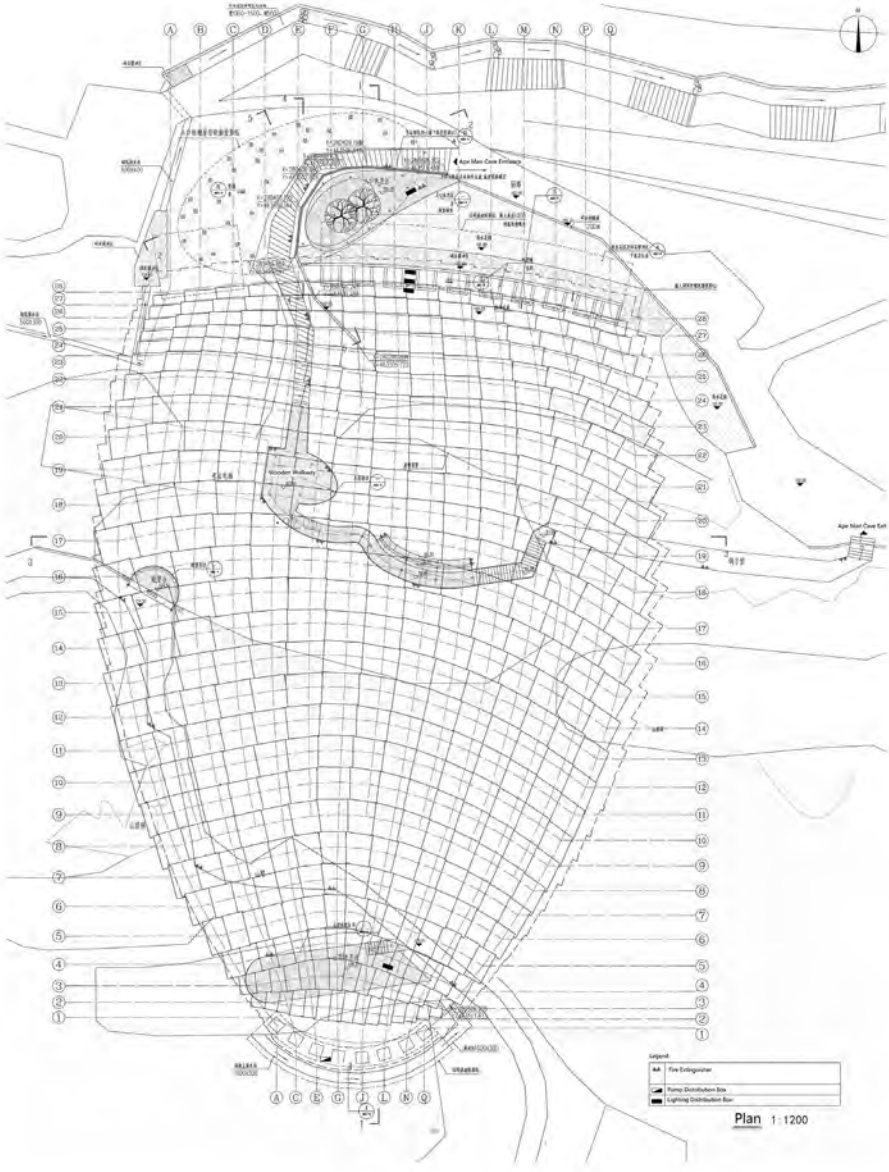




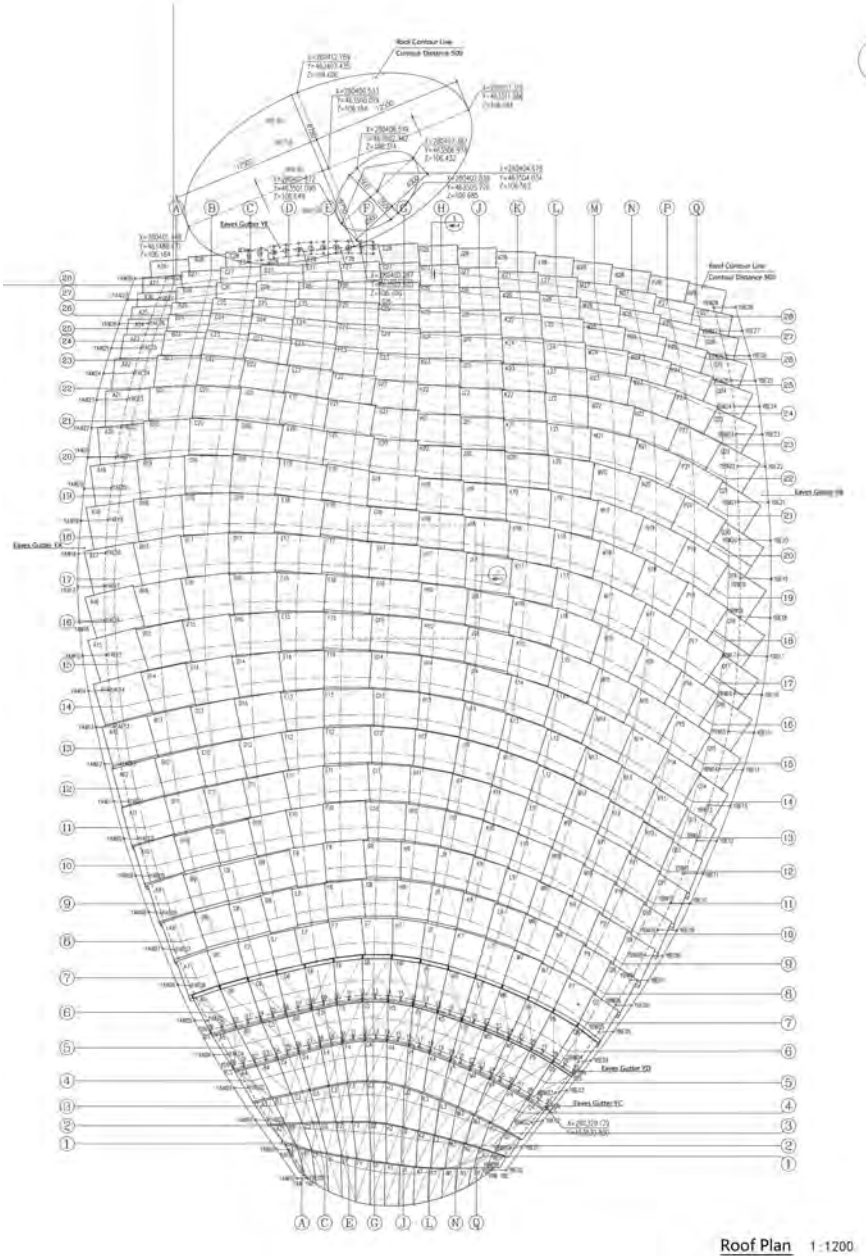
1-1 Section

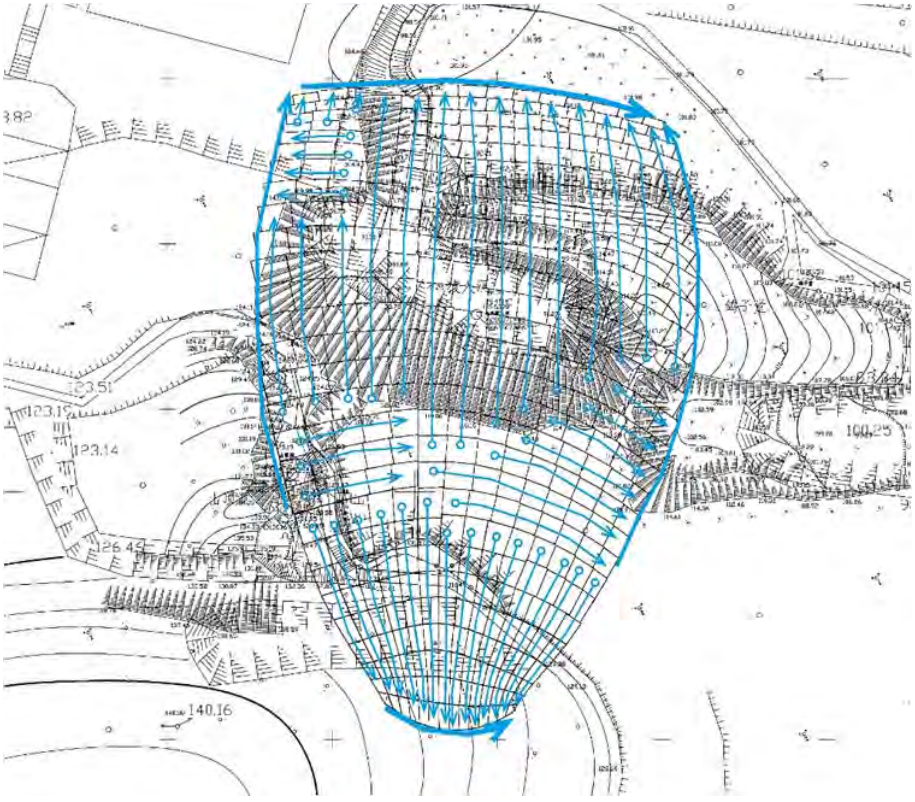


3-3 Section 1: 1600

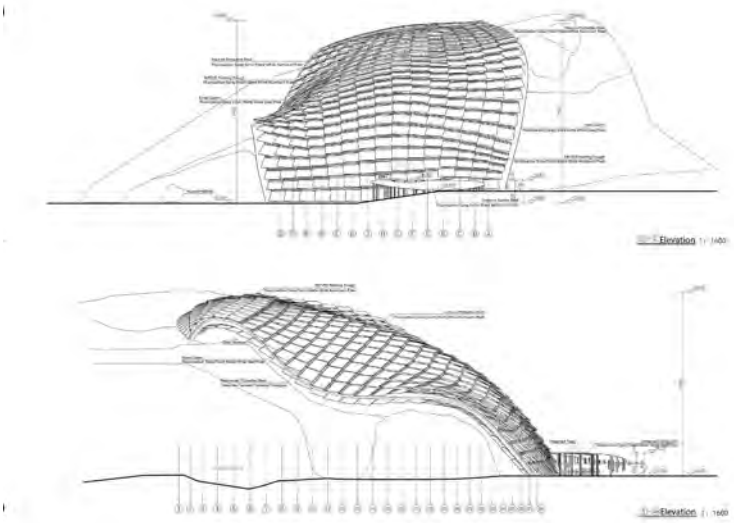


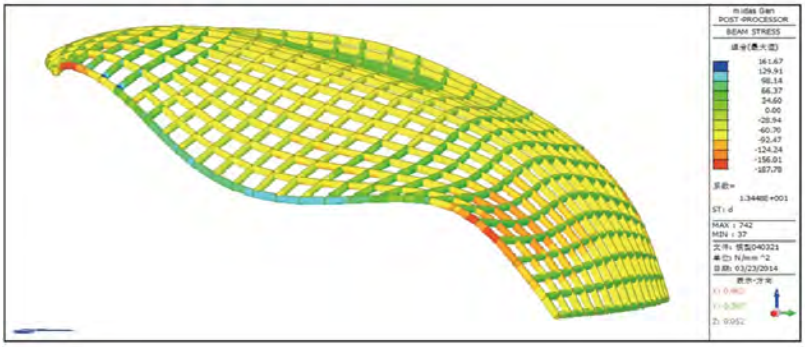
Protective Shelter for the archaeological site of Peking Man Cave, Zhoukoudian, Beijing. 2013-2018.
Fig. 8-9. General Plan, Roof plan.


Roof Plan 1:1200



Protective Shelter for the archaeological site of Peking Man Cave, Zhoukoudian, Beijing. 2013-2018.
Fig. 10-12. Elevations, Structure Study, Steel Structure in Construction.



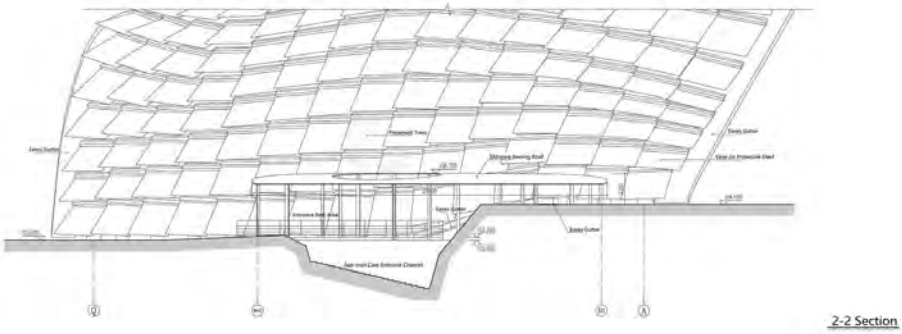

midas Gen
POST-PROCESSOR
BEAM STRESS

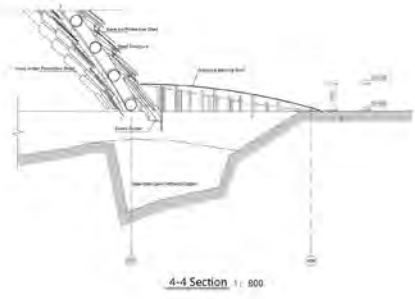
Protective Shelter for the archaeological site of Peking Man Cave, Zhoukoudian, Beijing. 2013-2018. Fig. 13-17. Winter Overview from North, Inner leaves from top entrance, Inner leaves at top level entrance, Site overview with landscape.

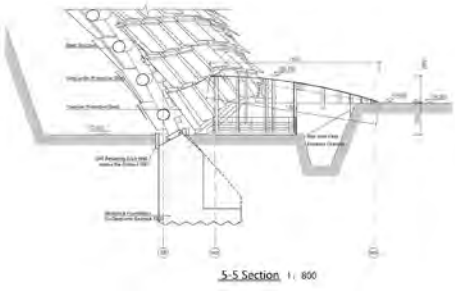
Protective Shelter for the archaeological site of Peking Man Cave, Zhoukoudian, Beijing. 2013-2018.
Fig. 18-20. Exterior leaves. Exterior leaves side view and detail views.

Protective Shelter for the archaeological site of Peking Man Cave, Zhoukoudian, Beijing. 2013-2018. Fig. 21-25. Exterior leaves at foothold, Exterior leaves in construction, Exterior leaves detail, Intermediate level plan, Sections.


115m Elevation Plan 1:1250


2-2 Section


4-4 Section 1 : 800


5-5 Section 1 : 800

Protective Shelther for the archaeological site of Peking Man Cave, Zhoukoudian, Beijing. 2013-2018. Fig. 26-29. Cave ceiling-at top, Entire ceiling-from bottom, Cave ground-towards East, Cave ground-coloured lights effect

Thousand Buddha Cliff of Guangyuan, Sichuan. 2011-2022.
Overview from North, with completed Test Section in the foreground.

DOI: 10.4458/8865-05

Protective Shelter for the Thousand Buddha Cliff of Guangyuan, Sichuan Province. 2011-2022

Andrea Giannotti[1]

Abstract: The protective shelter designed for the Thousand Buddha Cliff in Guangyuan addresses a critical condition in heritage conservation: intervention on an open-air sacred site where sculptural, symbolic and landscape values are inseparable. Carved over several centuries into a limestone cliff, the Buddhist statues have long been exposed to climatic agents, resulting in progressive material decay while remaining a visible and meaningful landmark within the cultural landscape. Rather than enclosing the site within a sealed structure, the project adopts a strategy based on passive environmental control and minimal physical interference. A large-span, semi-enclosed architectural skin filters rain, light and airflow while maintaining visual continuity with the cliff and its surroundings. Developed through successive design phases and tested by a full-scale pilot section, the shelter demonstrates how environmental protection can be achieved without suppressing the perceptual and symbolic presence of the site. The architecture operates as a mediating layer between conservation requirements and cultural visibility. By reinterpreting traditional construction principles and spatial references without literal imitation, the project reframes the experience of the Buddha Cliff as both protected heritage and living place of contemplation. The Guangyuan intervention thus exemplifies an architectural approach in which preservation, landscape and transmission of meaning are held in deliberate tension, transforming conservation constraints into a generative design condition.

Keywords: *Stone sculpted heritage, Sacred landscape, Heritage protection and visibility*

The Thousand Buddha Cliff of Guangyuan, in Sichuan Province, represents one of the most significant ensembles of stone sculpted Buddhist sculpture in China. Extending approximately 200 metres along a natural sandstone cliff on the banks of the Jialing River – along an ancient cultural route connecting Chengdu and Xi'an – the site comprises over 400 niches and grottoes containing nearly 7,000 sculpted figures. Carved continuously from the Northern Wei dynasty (5th century AD) to the late Ming dynasty, with a particular concentration during the Tang period (7th-10th centuries), the statues constitute an exceptional corpus in the history of Chinese Buddhist art.

1. Andrea Giannotti, Architect (arch.giannotti@hotmail.com).

Beyond their artistic value, the sculptures are inseparable from the landscape that hosts them. For centuries, they have been directly exposed to climatic agents – wind, rain, thermal excursion – that have progressively eroded both the sandstone substrate and the surviving traces of polychromy. Precisely because of this vulnerability, the Guangyuan Buddha Cliff was among the first cultural heritage sites to be officially protected at national level in 1961, and a specific Conservation Plan was legislated in 2008. From the outset, the client – the Art Museum of the Thousand Buddha Cliff, together with the Guangyuan Municipality – identified the need for a protective architectural intervention capable of mitigating environmental decay without compromising the visibility and symbolic presence of the site.

The urgency of intervention became increasingly evident as ongoing weathering continued to cause irreversible loss of sculptural material. Rather than proposing a fully enclosed structure, the design team – coordinated by the Cultural Heritage Conservation Centre of Tsinghua University Design Institute – developed a strategy based on environmental passivity and minimal interference. From the earliest concept design in 2011, the project rejected solutions relying on full glazing and mechanical climate control, which would have entailed high construction and maintenance costs as well as a substantial environmental burden. Instead, a semi-closed, permeable protective shell was proposed, capable of filtering sunlight and wind while remaining fully impermeable to rainwater.

This approach was tested through the construction of a full-scale Test Section, completed in 2014 on the northernmost portion of the cliff. Continuous monitoring of climatic conditions before and after the installation demonstrated the effectiveness of the strategy: temperature fluctuations were reduced, rainwater erosion was eliminated, and ventilation proved sufficient to prevent humidity-related decay. The Test Section thus provided empirical validation for a conservation model based on passive environmental control rather than technological enclosure, aligning the project with internationally recognised principles of heritage conservation.[2]

Structurally, the shelter was conceived as a large-span steel system spanning the cliff without touching the sculpted surface. Early design versions relied on tubular steel trusses anchored in the riverbanks and over the ridge above the cliff, ensuring complete physical separation from the

2. Icomos 2005.

heritage fabric. As the project evolved, the structural system was progressively refined to reduce its visual impact and to better integrate with the three-dimensional geometry of the shell. In the 2019 revision, the truss system was replaced by a lighter network of inclined steel tubular beams forming a triangular mesh, significantly reducing the perceived "industrial" character of the structure and allowing it to merge more closely with the envelope geometry.

The most distinctive architectural choice concerns the envelope of the shelter. Drawing inspiration from traditional clay-tile roofing systems, the external skin is composed of overlapping tiles laid without cement mortar, allowing air and light to penetrate while ensuring complete protection from rain. Different laying patterns were developed according to surface inclination: vertical and steeply inclined planes maintain controlled gaps for ventilation, while flatter roof surfaces adopt overlapping arrangements to prevent wind-driven rainfall infiltration. The tile pattern recalls historical filtering screens used in Chinese gardens and pavilions, as well as the scale-like textures associated with natural and symbolic imagery.[3]

On the interior, the spatial experience is deliberately shaped to evoke the atmosphere of traditional Chinese temples. Steel structural elements are partially concealed by layers of bamboo and timber bars. The steel columns and beams are painted red in reference to temple architecture, restoring a sense of warmth and material continuity. Suspended wooden boardwalks and observation platforms replace earlier stairways carved into the cliff, which had posed risks both to visitors and to the sculptures themselves. In this way, the project reorganises access and perception without altering the physical substance of the heritage.[4]

A crucial design challenge concerned the degree of visual exposure of the cliff from the river and the opposite bank. Historically, the Buddha statues had always been visible from afar, functioning as landmarks within the landscape. Responding to this cultural expectation, the final design version – approved in 2021 – adopts a hybrid façade system. The shelter is articulated as a composition of smaller, pagoda-like roof elements, partially lifted to allow framed views of the largest grottoes while maintaining environmental protection. This solution reinterprets earlier, now-removed "pagoda-style" protective roofs that had been added during

3. Liang 2005 (1984).
4. Rowe, Kuan 2005 (2002), pp. 7-26.

the twentieth century, acknowledging their role in the collective memory of the site while translating them into a contemporary architectural language.

The resulting image is that of a continuous architectural skin lying along the cliff, its layered surfaces recalling both the natural stratification of the rock and the symbolic figure of the dragon – a recurrent motif in Chinese cultural imagery. Yet beyond its formal appearance, the shelter operates as a mediating device: it simultaneously preserves the fragile sculptural heritage and reactivates the contemplative and ritual dimension of the site. Architecture here does not compete with the carved figures but frames their perception, negotiating between environmental necessity and cultural visibility.

Through its reliance on passive systems, reversible construction techniques and references to local building traditions, the Guangyuan shelter exemplifies an architectural approach in which conservation, landscape and cultural transmission are inseparable. The project does not resolve the tension between protection and exposure; rather, it makes this tension productive, transforming it into the very condition of its architectural relevance.

References

Icomos 2005
ICOMOS, *Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas*, 2005.

Liang 2005 (1984)
Liang Sicheng, *The Chinese Architecture: A Pictorial History,* Dover Publications 2005 (1984).

Rowe, Kuan 2005 (2002)
Peter Rowe, Seng Kuan, *Essenza e Forma. L'architettura in Cina dal 1940 a oggi*, Postmedia book, 2005.

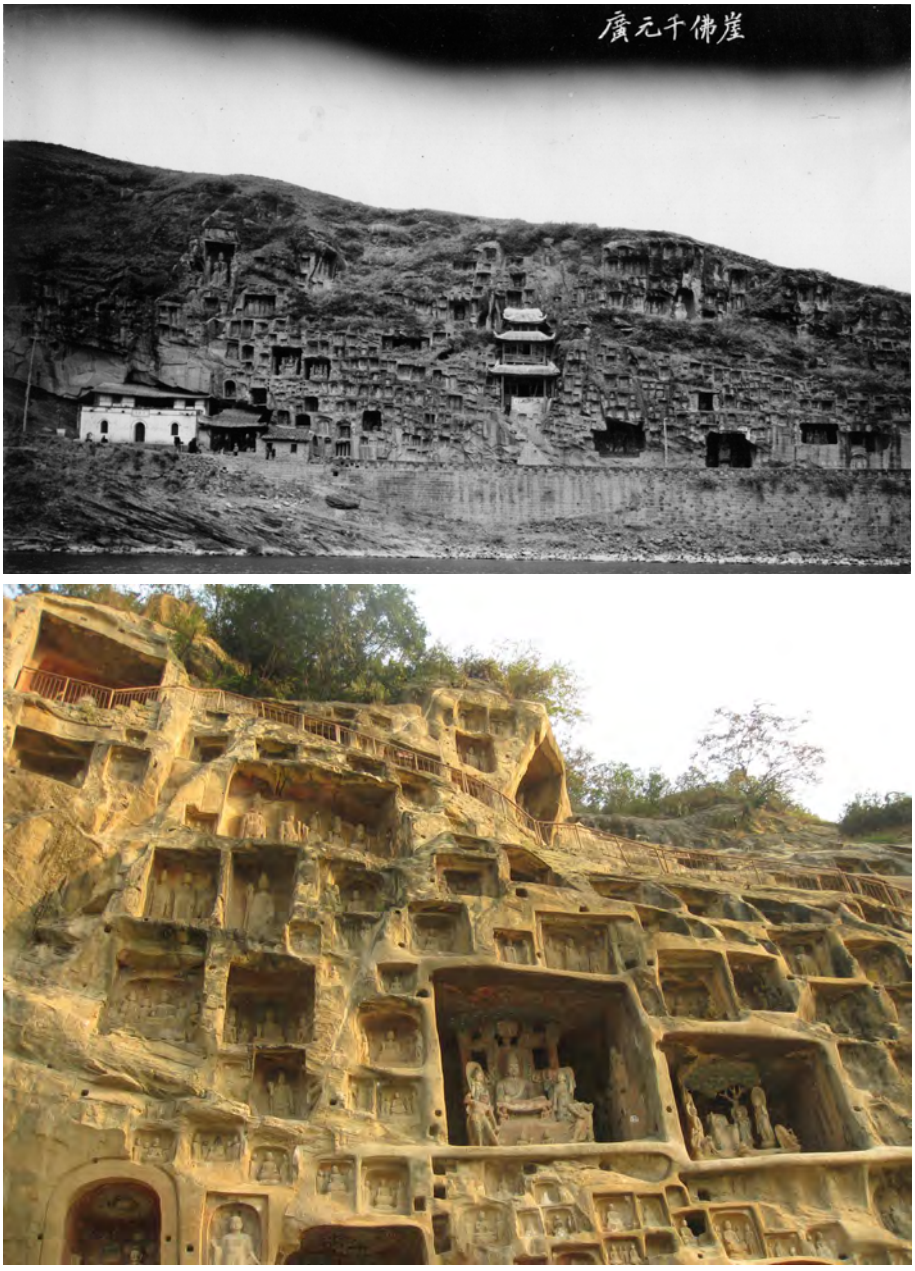
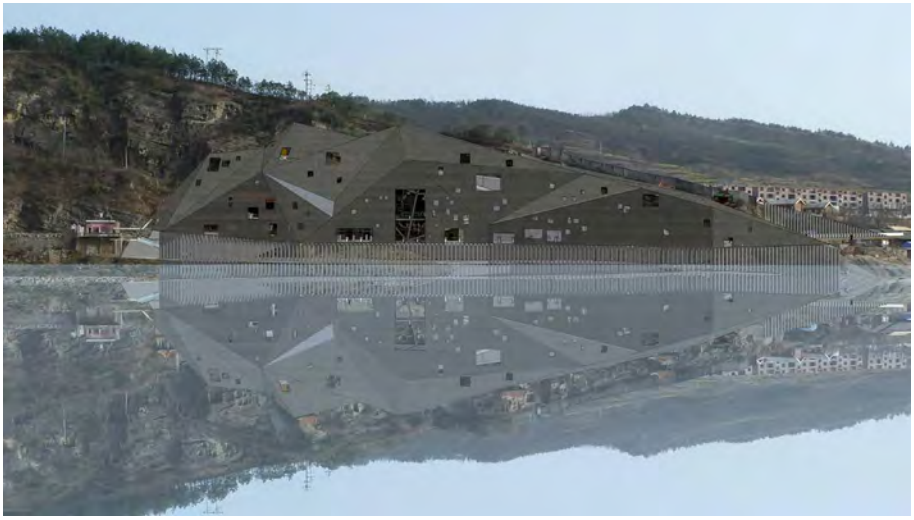
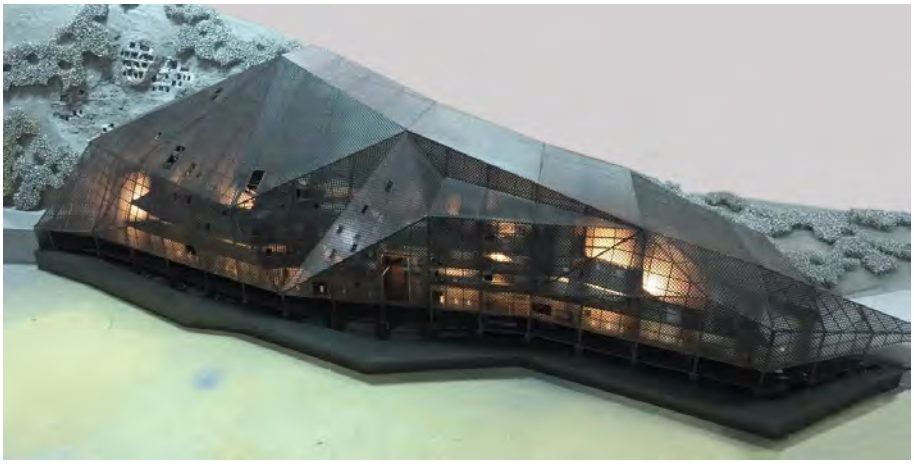
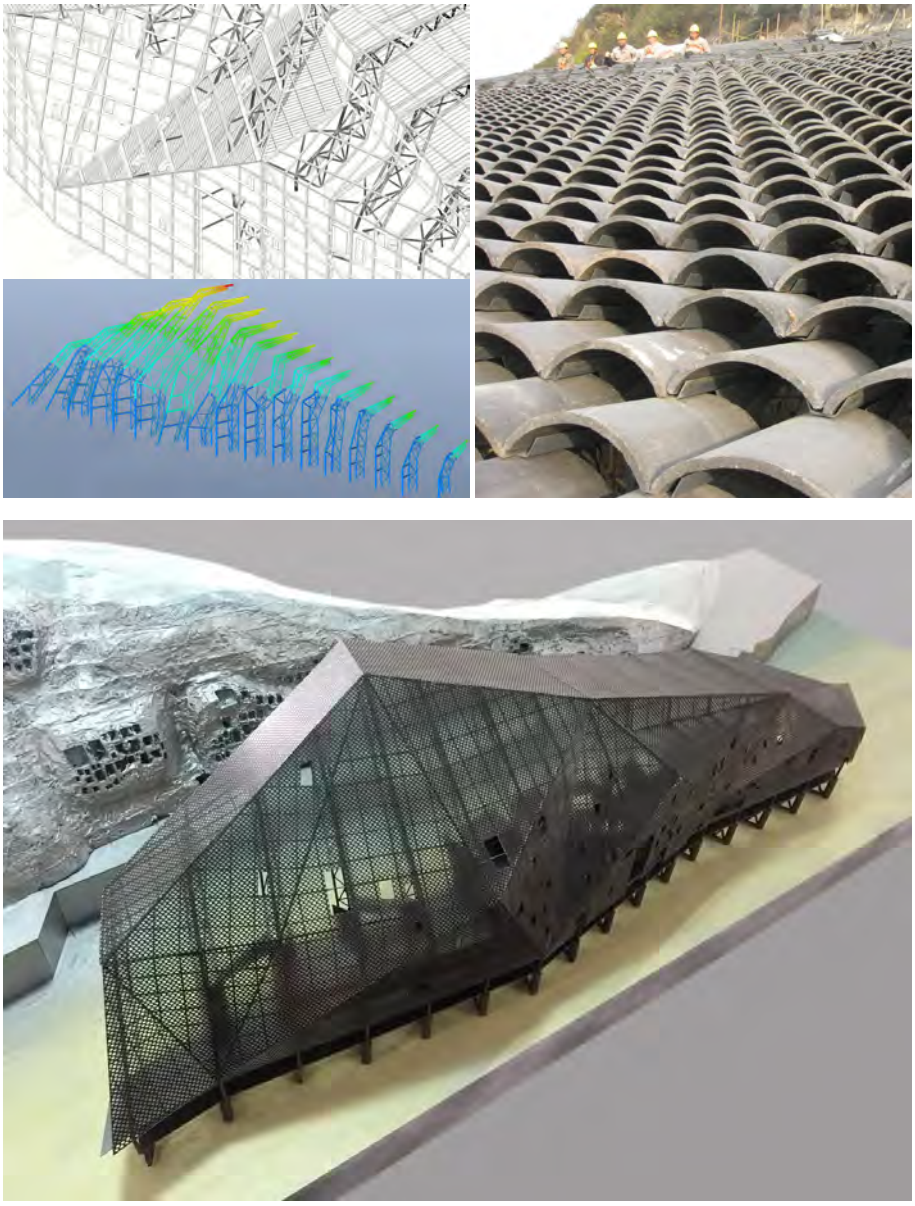


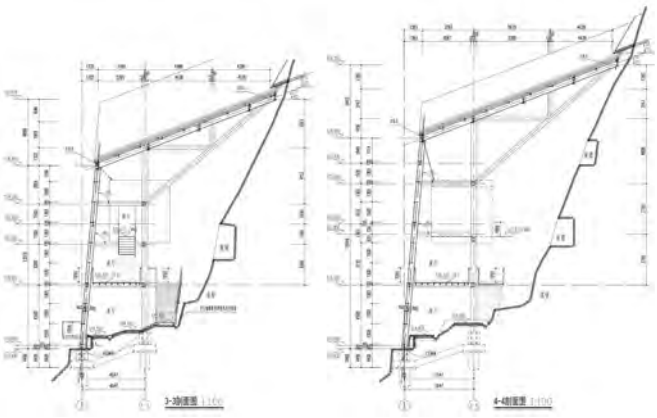
Fig. 1-2. Thousand Buddha Cliff in the 1960s, Buddha grottoes as of today.



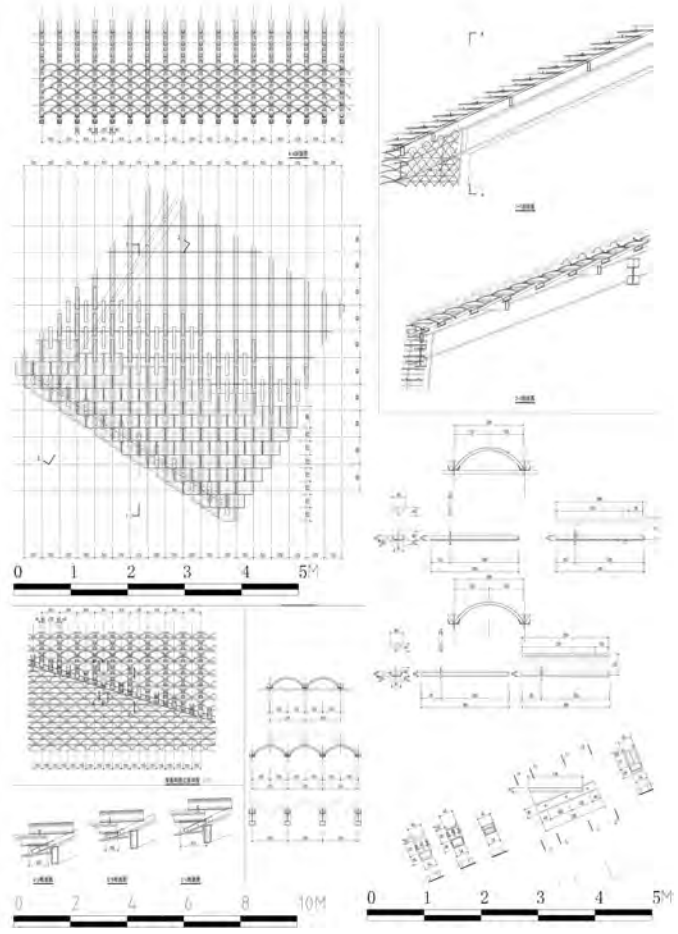


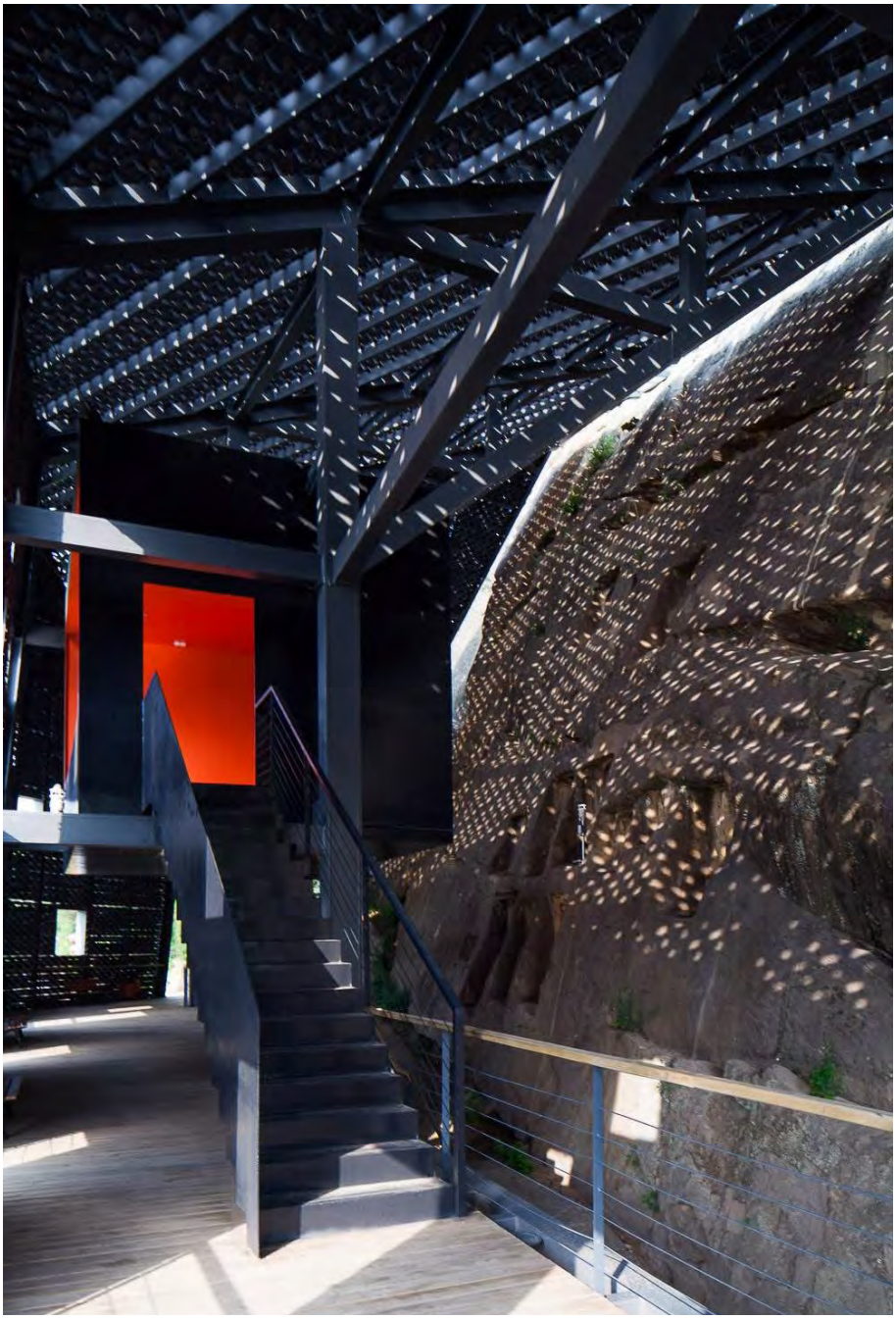


Thousand Buddha Cliff of Guangyuan, Sichuan. 2011-2022.
Fig. 3-8. Overview from West, Initial version (2011) Photo collage, Model from West, Studies of the steel structure, Test Section completed roof tiling, Model from North.

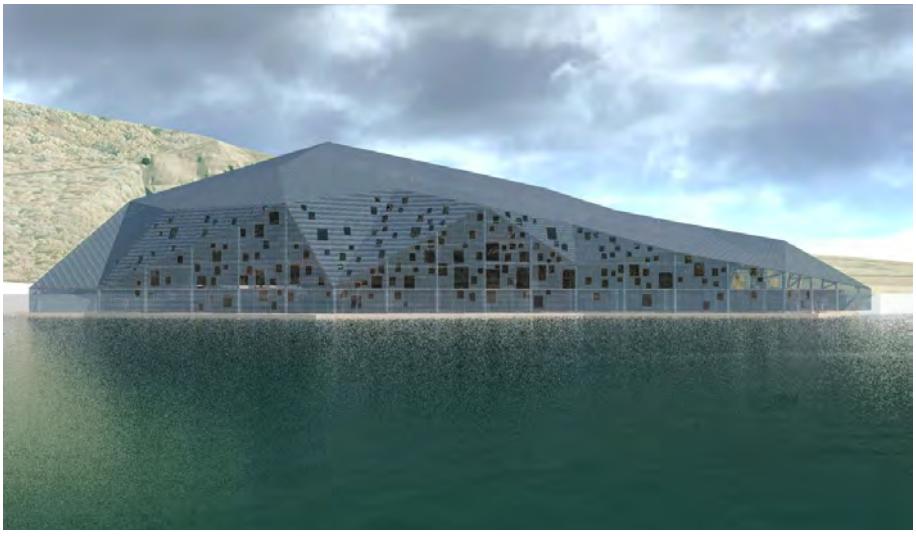


5. Details - Grey Tile Curtain Wall

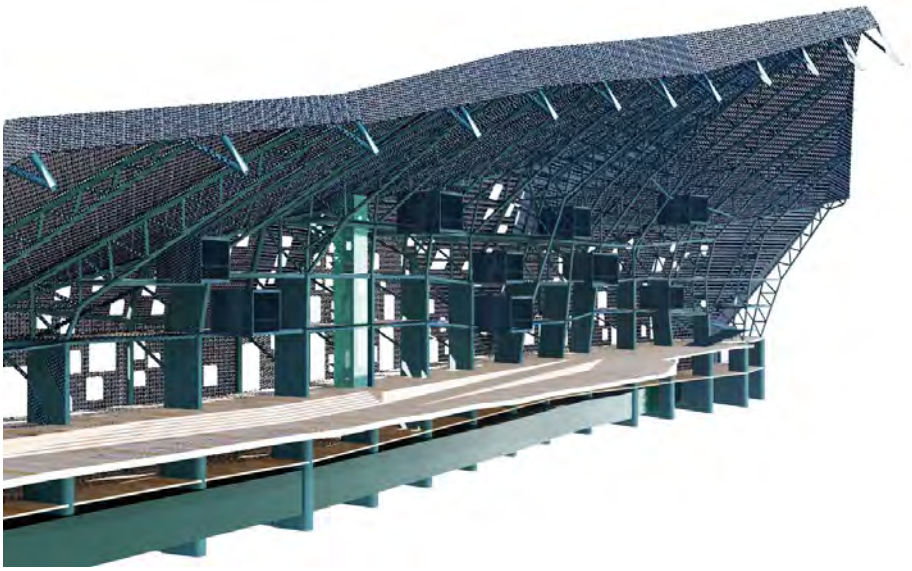


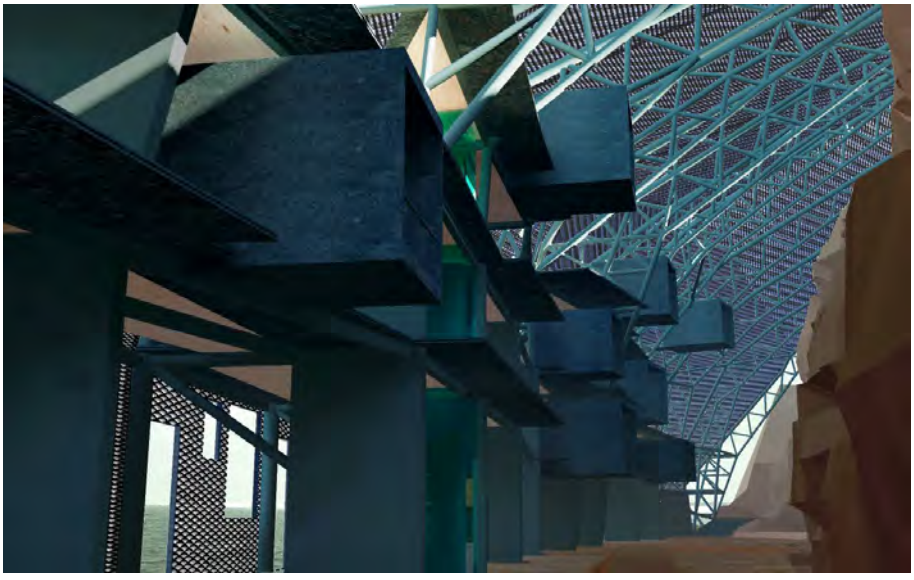


Thousand Buddha Cliff of Guangyuan, Sichuan. 2011-2022.
Fig. 9-11. Test Section (2016). Cross sections, Roof and curtain wall details, Inner space and observation box.

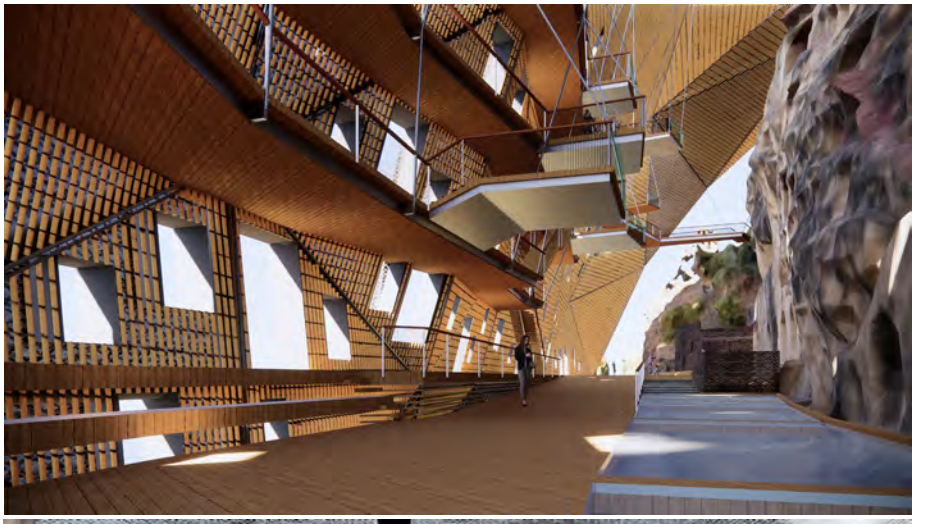


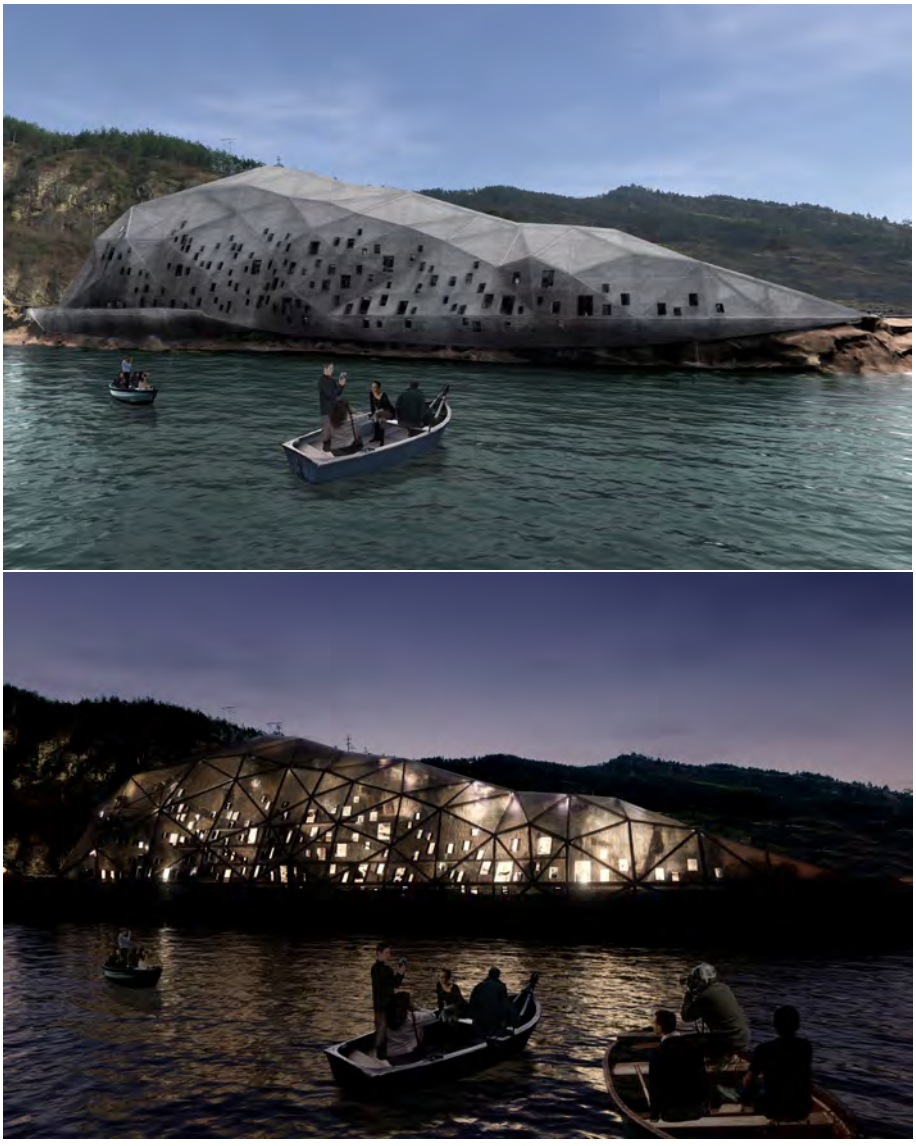
Thousand Buddha Cliff of Guangyuan, Sichuan. 2011-2022.
Fig. 12-16. Test Section (2016). Inner space boardwalk, Frontal view from opposite bank, South entrance, North curtain wall and exit path; Second Version (2017) Frontal rendering.



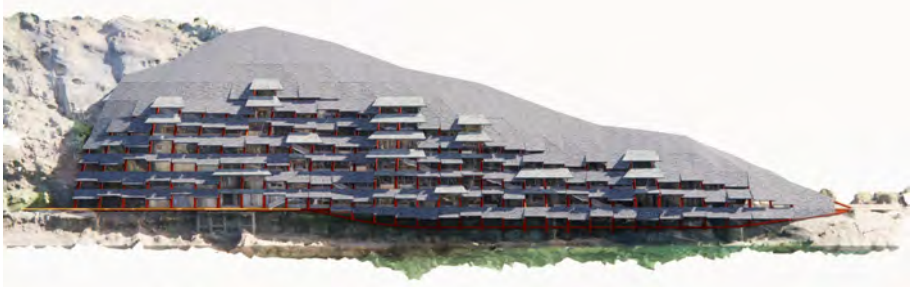


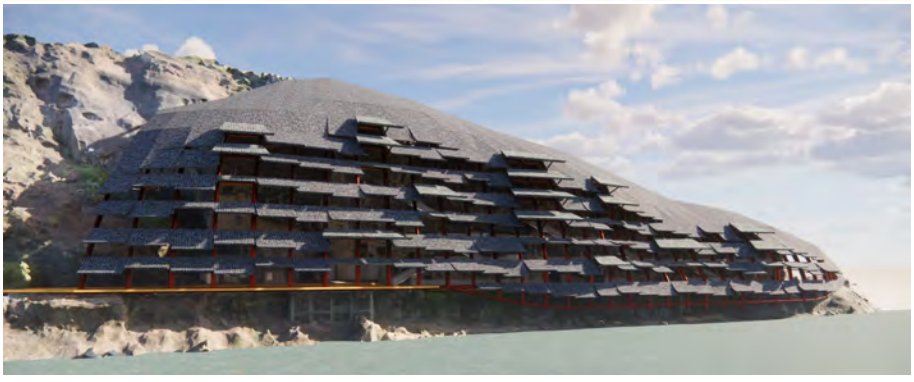
Thousand Buddha Cliff of Guangyuan, Sichuan. 2011-2022.
Fig. 17-20. Second Version (2017) Inner space, Interior rendering, Cross section, Photo collage.



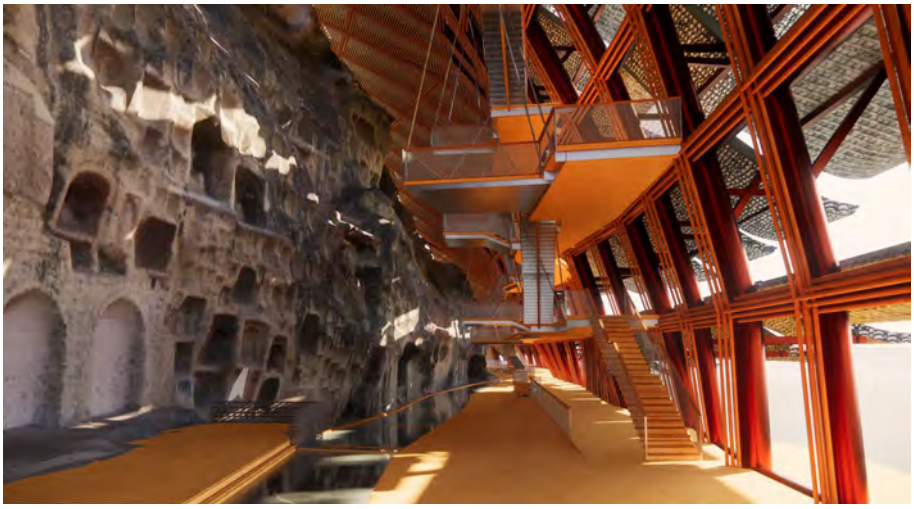


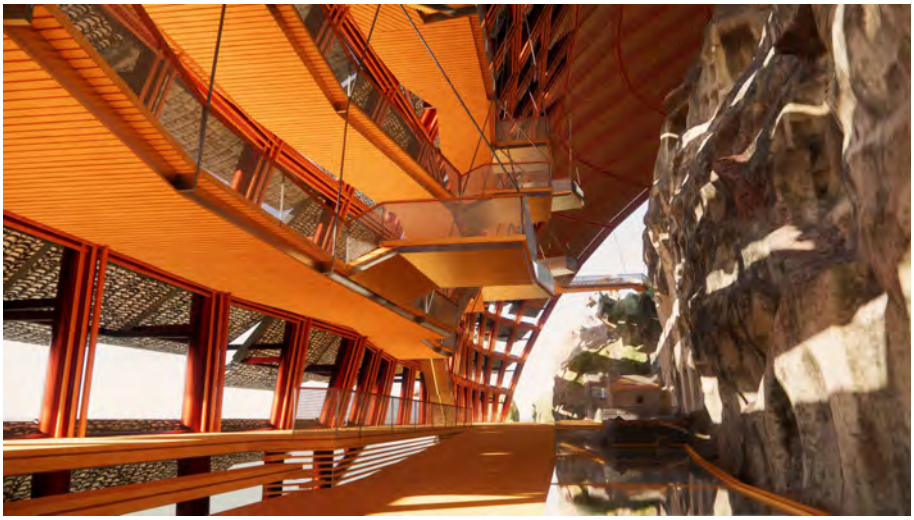
Thousand Buddha Cliff of Guangyuan, Sichuan. 2011-2022.
Fig. 21-25. Third Version (2019) Curtain wall and Structure, Interior rendering, Curtain wall rendering, Photo collage from West - daylight, Photo collage from West - nightlight.





Thousand Buddha Cliff of Guangyuan, Sichuan. 2011-2022.
Fig. 26-30. Frontal overview in the 1990s, Fourth Version (2021) Frontal renderings, Curtain wall renderings.





Thousand Buddha Cliff of Guangyuan, Sichuan. 2011-2022.
Fig. 31. Interior space renderings.

Rizhao Science and Technology Museum, Rizhao, Shandong Province. 2014-2020
Fig. 1. Overview towards South.

DOI: 10.4458/8865-06

Rizhao Science and Technology Museum Rizhao, Shandong Province. 2014-2020

Ilaria Bernardi[1]

Abstract: The Rizhao Science and Technology Museum is conceived as a civic institution dedicated to the public transmission of scientific knowledge, operating at the intersection of research, education and urban life. Originating from an initiative linked to the scientific legacy of Nobel laureate Samuel Chao Chung Ting, the project moves beyond a commemorative model to define a cultural infrastructure aimed at engaging a non-specialised audience with contemporary science. Embedded within a coastal park between the city and the Yellow Sea, the museum is largely developed underground to preserve landscape continuity while organising a complex spatial sequence beneath it. A continuous spiral path guides visitors through a progression of exhibition spaces that translate abstract scientific concepts into an embodied experience. Circulation, structure and geometry operate as a single cognitive device, framing architecture not as a neutral container but as an active mediator between scientific content and public understanding. The project exemplifies an architectural approach in which institutional permanence and experiential engagement coexist, positioning architecture as an infrastructure of knowledge within the contemporary city.

Keywords: *Science museum, Civic infrastructure, Museum and landscape.*

The Rizhao Science and Technology Museum is conceived as a public institution dedicated to the transmission of scientific knowledge, bridging academic research and a broad, non-specialised audience. The project originates from the figure of Professor Samuel Chao Chung Ting (Ding Zhaozhong), Nobel Laureate in Physics (1976) for the discovery of the J/ψ particle, whose long-standing scientific career has unfolded primarily in international research centres, notably at CERN in Geneva. When the Municipality of Rizhao proposed the construction of a museum initially dedicated to his work, Professor Ting actively supported the initiative, contributing to the definition of the exhibition content, the selection of scientific equipment and the overall educational strategy.

During the early conceptual phase, the project's scope was deliberately

1. Ilaria Bernardi, Architect (ilariabernardi@hotmail.com).

expanded and the institution renamed Rizhao Science and Technology Museum. This decision marked a shift from a celebratory monographic approach to a broader cultural ambition: the museum was intended as a platform for popular science, capable of addressing students, families and non-specialist visitors while maintaining a rigorous connection with contemporary scientific research. In this sense, the museum was conceived not merely as a container for exhibits, but as a civic infrastructure aimed at strengthening the relationship between scientific knowledge and society. The selected site lies on the western edge of the Olympic Water Park, a large coastal park mediating between the urban fabric of Rizhao and the seascape of the Yellow Sea. The decision to locate the museum closer to the waterfront rather than within the dense urban context reinforces its role as an interface between the built city and the natural environment. From the site, elevated viewpoints offer panoramic views encompassing water, greenery, urban towers and the open sea. This condition informed a key design objective: the museum is conceived to guide visitors through a spatial sequence connecting natural and artificial realms, framing scientific exploration as a human endeavour embedded within the larger environmental context.

In response to the sensitivity of the park landscape and the proximity of the Botanical Garden, the architectural mass was largely embedded underground. Of the approximately 19,600 square metres of total floor area, most exhibition spaces are located below ground, covered by a green roof that restores continuity with the park surface. Only a limited portion of the building emerges above ground, signalling the museum's presence while minimising its visual impact on the surrounding landscape.

The masterplan is organised around a circular core, generating a dynamic spiral layout that distributes the main functional elements: entrance and exit lobbies, five large exhibition halls with their satellite rooms, a congress hall and service areas. All spaces are subjected to a rotational geometry centred on the core, evoking the frozen motion of a particle accelerator. This spatial strategy recalls the conceptual lineage of the "endless museum" proposed by Le Corbusier, while reinterpreting it through a contemporary and explicitly scientific metaphor.[2]

The visitor's journey is conceived as an experiential narrative. From the entrance at ground level, access is immediately directed downward

2. Allen 2000, pp. 1-15; 47-62.

into a dimly lit underground space, likened to a cave exploration. The circulation path unfolds as a continuous loop around a central void – symbolically associated with an astral black hole – connecting the exhibition halls are located at – 6m from entrance level. Possible re-wording: "connecting the exhibition halls at basement level, dedicated to the investigation of matter, and ascending through a circular ramp toward daylight and open sky, representing nature and the universe. The sequence culminates at an elevated outdoor platform, from which visitors enjoy a 360-degree view of the landscape before descending along an external ramp back to the main atrium.

The above-ground architectural element consists of a helicoidal ramp winding around a concrete core, rising approximately 15 metres above the green roof. This structure functions both as a circulation device and as a public belvedere, reinforcing the museum's role as an urban and landscape landmark rather than a closed institutional object.

The five main underground exhibition halls house large-scale scientific equipment and models reproducing the most significant experimental setups developed by Professor Ting, including particle accelerators. Each hall is dimensioned according to the size of the equipment on exhibit and enclosed by a sequence of cast-in-place concrete vaults with progressively decreasing arches. The vaults, realised without surface finishing, integrate voids for electromechanical systems and contribute to an immersive spatial atmosphere. The fair-faced concrete surfaces deliberately recall the materiality of excavation tunnels, reinforcing the association between scientific research and spatial exploration.

The construction of the complex curved vaults represented one of the main technical challenges of the project. Through the use of advanced BIM modelling, the geometry of each formwork element was precisely defined, fabricated and assembled on site. Curved structural concrete elements recur throughout the underground levels, shaping not only the exhibition halls but also satellite rooms, circular corridors and the entrance lobby, which is covered by concentric vaults supported by wide arches. Carefully designed lighting systems enhance the spatial continuity and guide the visitor's perception.[3]

At the centre of the building, a large truncated concrete cone defines the main spatial and symbolic focus. The upper level houses a circular

3. Picon 2010, pp. 22-35.

projection theatre with a hemispherical dome, while the lower level accommodates a central hall representing astrophysical phenomena related to Professor Ting's research. The exterior surface of the cone, clad in highly reflective corrugated aluminium panels, supports the roof structure and the suspended helicoidal ramp. The structural system separates the load-bearing concrete core from the lighter steel elements, allowing a reduction in material thickness and visual weight.

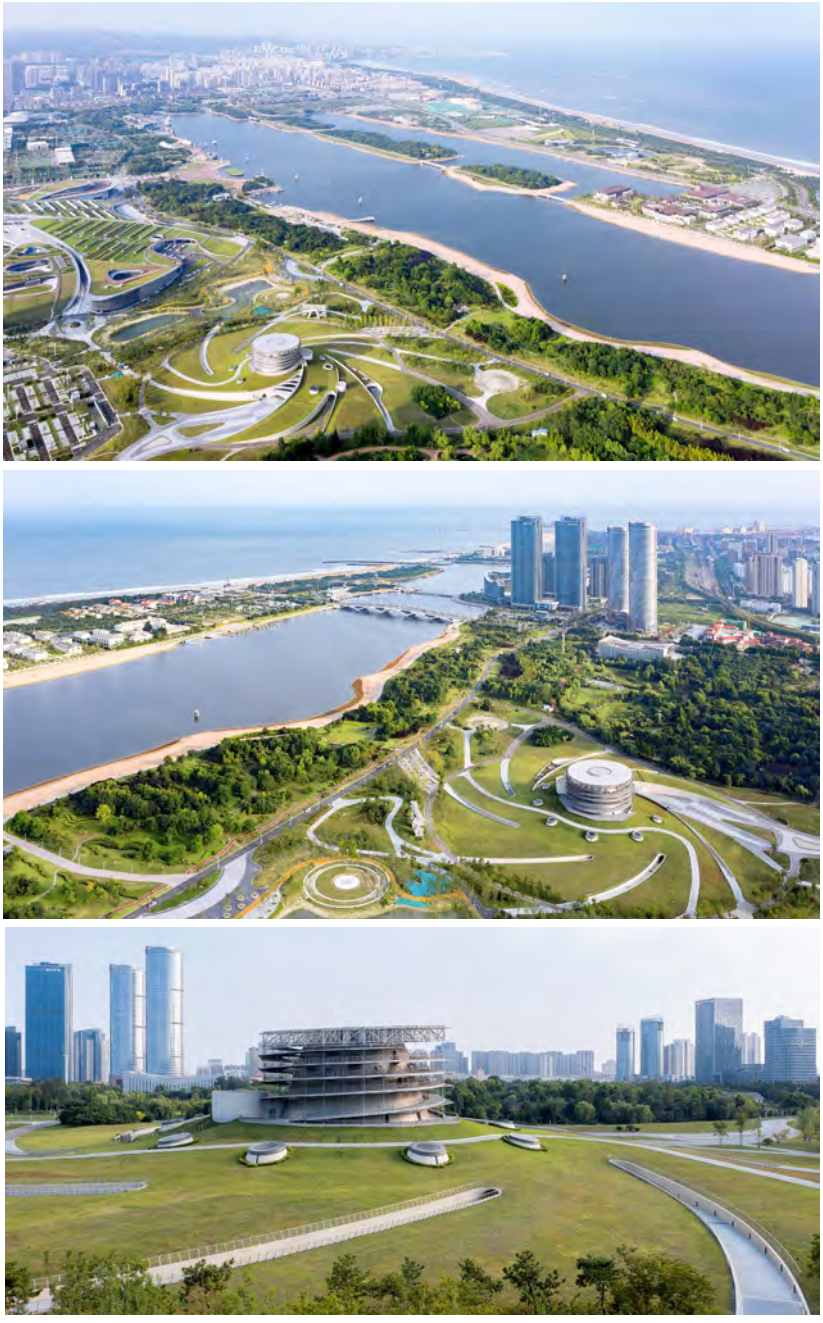
The geometry of the above-ground elements evolves into an octagonal form aligned with the roof outline. This transformation carries a symbolic reference to the Large Hadron Collider at CERN, one of the most significant scientific instruments associated with Professor Ting's work. From a distance, the museum appears as a light, permeable object composed of reflective metal surfaces, cables and inclined planes – an image deliberately contrasting with the surrounding urban fabric. At night, a dynamic lighting system enhances the building's presence, reinforcing its identity as a public attractor.

Beyond its architectural and technical achievements – recognised by international awards for lighting design and computational modelling – the Rizhao Science and Technology Museum operates as a catalyst for public life. Conceived as an open civic centre, it hosts exhibitions, workshops, educational programmes and public events, fostering engagement with science across different age groups and social backgrounds. In this sense, the museum exemplifies an architectural approach in which institutional stability and public accessibility are held in productive tension, positioning architecture as an active mediator between knowledge and society.

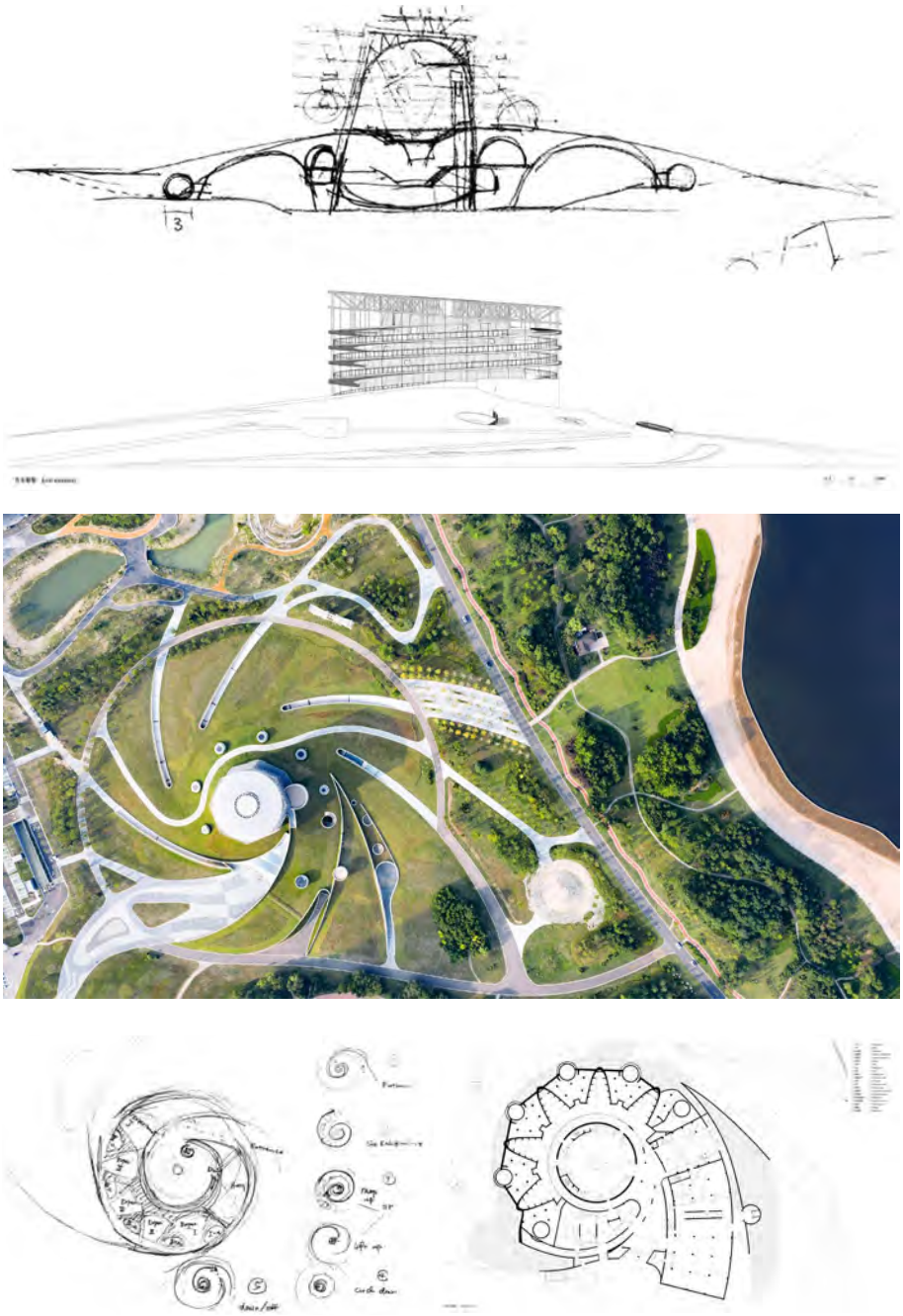
References

Allen 2000
Stan Allen, *Practice: Architecture, Technique and Representation*, Routledge, 2000, pp. 1-15; 47-62.

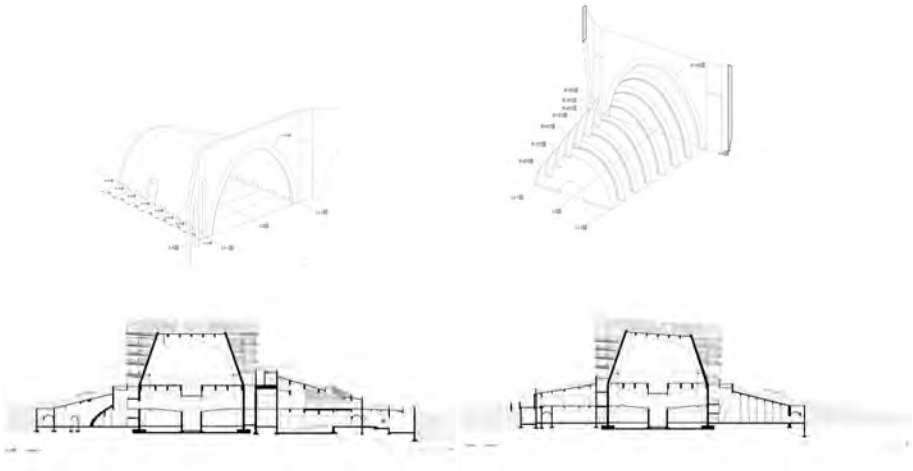
Picon 2010
Antoine Picon, *Digital Culture in Architecture*, Birkhäuser, 2010, pp. 22-35.

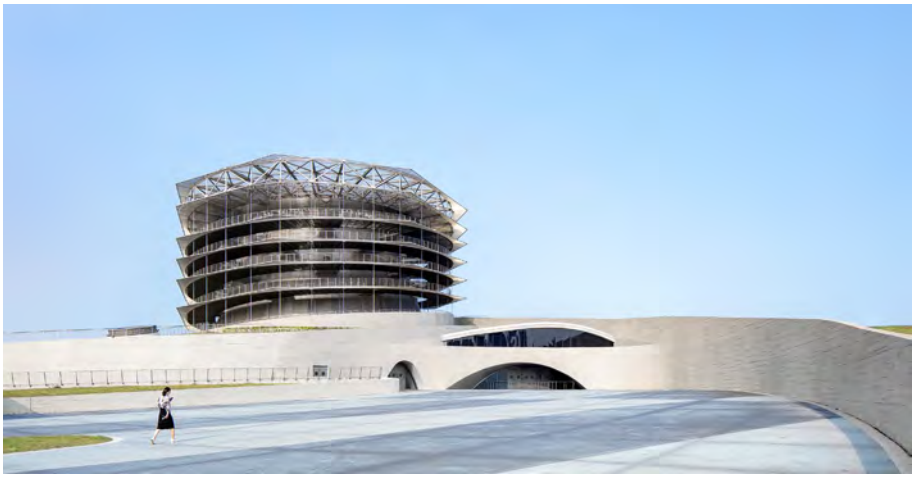


Rizhao Science and Technology Museum, Rizhao, Shandong Province. 2014-2020.
Fig. 2-4. Overview towards North, towards South, Museum within the City landscape and skyline.



Rizhao Science and Technology Museum, Rizhao, Shandong Province. 2014-2020.
Fig. 5-15. Sketches, elevation, plans, sections, diagrams, renderings, model views, views.





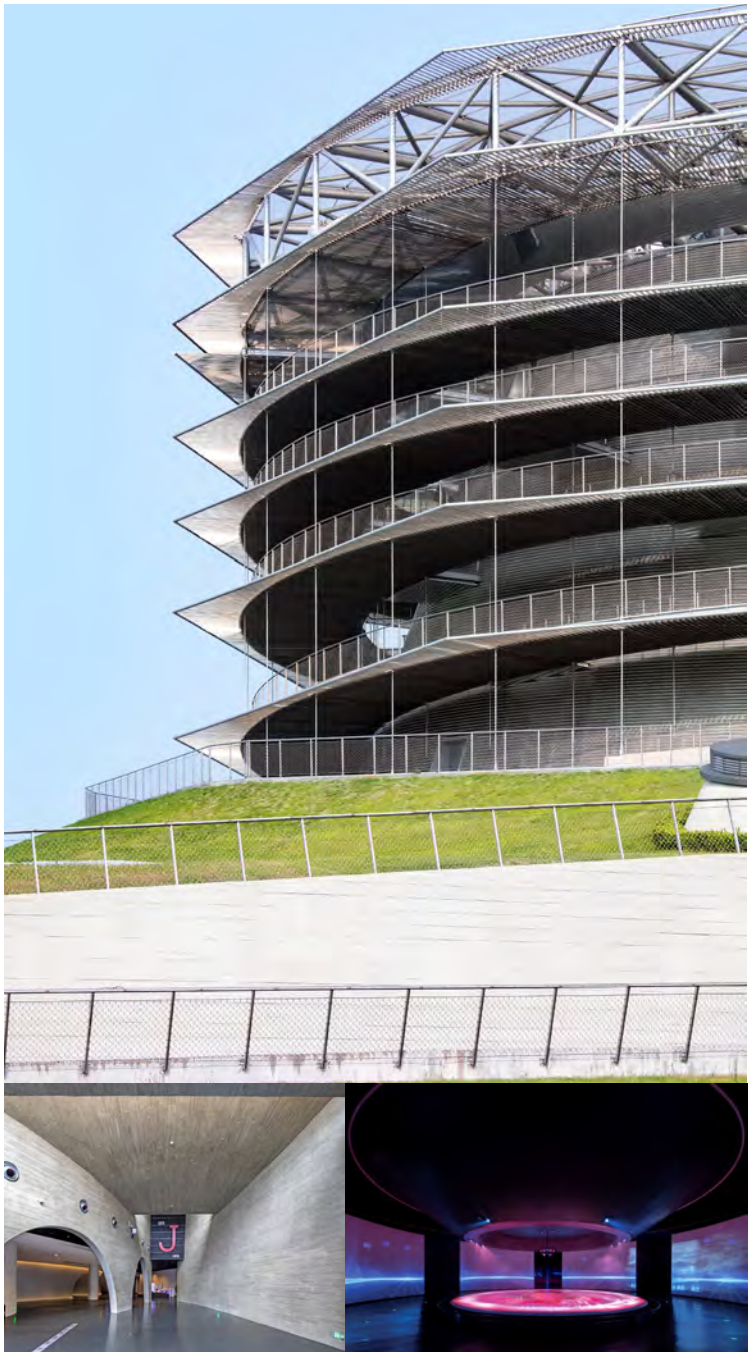
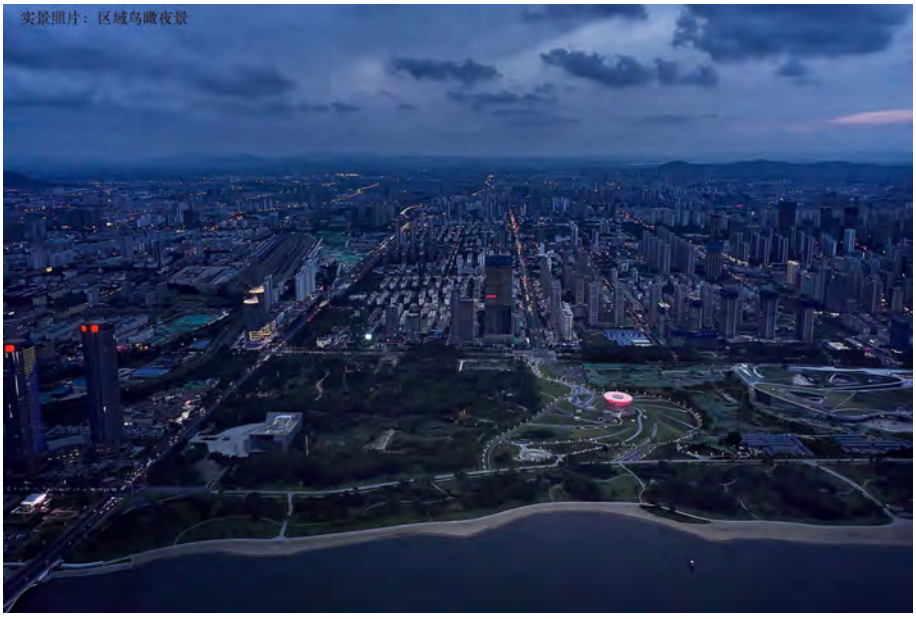
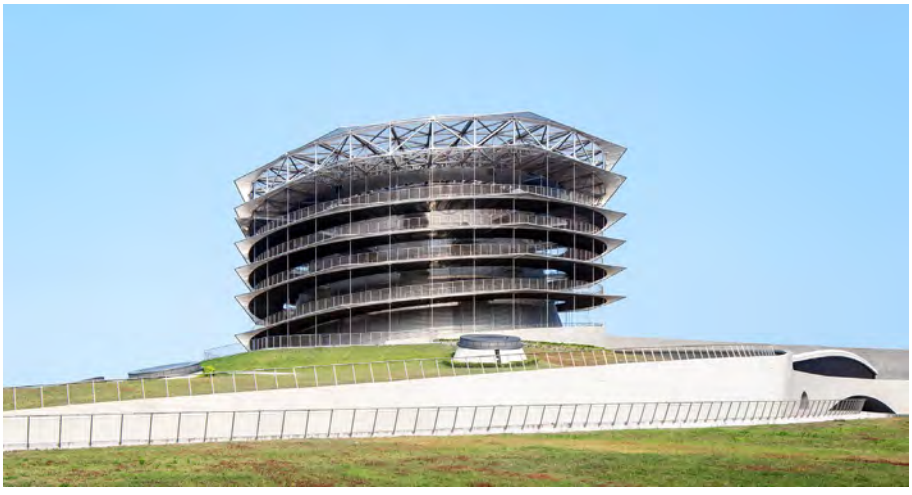


Fig. 16-23. Exterior and Interior views.





Rizhao Science and Technology Museum, Rizhao, Shandong Province. 2014-2020.
Fig. 24-27. Exterior views and contextual impact.

New School of Urban Design, Wuhan University Campus Wuhan, Hubei Province, 2016–2020.
Fig. 1. South Classrom volumes

DOI: 10.4458/8865-07

New School of Urban Design, Wuhan University Campus Wuhan, Hubei Province, 2016–2020

Ilaria Bernardi[1]

Abstract: The New School of Urban Design at Wuhan University addresses the architectural challenge of designing an educational building within a historically and environmentally stratified campus while asserting its role as a contemporary institution dedicated to architectural and urban education. Rather than pursuing iconic visibility, the project establishes a calibrated dialogue with its surroundings through controlled massing, material continuity and careful integration with topography. Conceived as a reflexive architectural condition, the building operates simultaneously as a place for teaching architecture and as a spatial instrument through which architectural culture is transmitted. Through a compact linear configuration, staggered floor levels and interconnected classrooms, the project reinterprets the conventional academic typology, transforming circulation and sectional variation into active pedagogical devices. Architecture here is not a neutral container but an operative framework that shapes daily practices, collective interaction and learning processes, positioning educational space as a critical component of disciplinary formation.

Keywords: *Educational architecture, University campus, Learning environments.*

The New School of Urban Design at Wuhan University is defined by its relationship with an exceptionally stratified context: a historic campus characterised by dense vegetation, complex topography and a constellation of significant buildings dating from different phases of Chinese modernity. Unlike the other projects discussed in this series, the school is required to negotiate its presence within an already formed academic and cultural environment, establishing continuity without erasure and distinction without rupture.

Located at the geographical centre of the campus, between Luojia Mountain and East Lake, the project confronts a dual condition. On the one hand, it must integrate into a landscape shaped by trees, slopes and historic buildings; on the other, it must assert its role as a contemporary institution dedicated to the future of architectural and urban education. The architectural problem is therefore not one of iconic visibility, but of

1. Ilaria Bernardi, Architect (ilariabernardi@hotmail.com).

calibrated dialogue: how a new building can belong to its surroundings while declaring its own temporal and disciplinary specificity.

This responsibility is heightened by the building's programme. As a school dedicated to architecture, urban planning and design, the project embodies a reflexive condition: architecture is here both the subject taught and the medium through which teaching takes place. The building is not merely a container for educational activities, but an active participant in the formation of spatial sensibility, disciplinary awareness and collective practices. In this sense, the school operates as a vehicle for cultural transmission in the most direct and material way.

The site assigned for the project lies at the southern foot of Yingyuan Garden hill, in a compressed and irregular plot bordered by student dormitories and vehicular roads. Rather than dispersing volumes across the site, the design responds with a compact, linear block whose complexity becomes legible primarily through section and roof plan. Four rectangular volumes are articulated through slight shifts, overlaps and offsets, producing a layered configuration that is only partially readable from elevations and plans.

The main entrance is marked by a recessed courtyard carved into the building mass, organised around an existing camphor tree. This gesture simultaneously preserves a natural element and establishes a public threshold, introducing a small plaza that connects the campus circulation system through the building at ground level. The rotated volume framing this space represents the only deviation from the otherwise orthogonal grid, signalling entry without resorting to monumentality.

The building closely follows the site's topography, using slopes and level changes to mediate height differences and generate a continuous pedestrian experience. Although the total floor area is distributed over no more than five levels in compliance with campus regulations, the internal organisation avoids conventional stacking. Instead, floor slabs are staggered and interlocked at varying heights, producing a spatial configuration that recalls Adolf Loos's Raumplan: spaces are arranged according to function, use and relational importance rather than by repetitive horizontal strata.[2]

This strategy becomes particularly evident in the façades. While neigh-

2. For the formulation of the concept of Raumplan in Loos, see Heinrich Kulka, *Adolf Loos: Das Werk des Architekten* [The Architect's Work], Anton Schroll & Co., 1931, pp. 85–93.

bouring campus buildings typically present regular grids of stacked windows, the new school displays a sequence of protruding and recessed volumes at different levels. The southern elevation, dedicated to teaching spaces, unfolds as a stepped composition of terraces, each corresponding to a shifted floor slab; the northern elevation, housing offices, features framed window modules and a series of vertical voids accommodating staircases within open-air loggias. Through these differences, the building asserts its identity by deviation rather than contrast.

Materially, the project establishes continuity with the campus through the exposed concrete structural grid, infilled with red brick walls and metal window frames. This language resonates with numerous institutional and residential buildings constructed in China from the 1960s onward and with several structures already present on the Wuhan University campus. Inclined columns supporting overhanging volumes further reinforce this dialogue, recalling both the projecting eaves of modern Chinese buildings and, more subtly, the branching of nearby trees. The gently sloping green roof and the turquoise sun-shading screen along the northern façade echo the colours and geometries of traditional glazed roof tiles found throughout the campus.

If the building's external form negotiates integration and distinction, its interior spaces articulate a more radical position. At first glance, typical floor plans suggest a conventional organisation: a central corridor serving classrooms to the south and offices to the north. Yet closer inspection reveals subtle connections between adjacent teaching spaces, where steps replace partitions and floor levels shift by approximately 1.5 metres. As a result, classrooms interlock vertically and horizontally, occasionally merging into shared volumes that exceed the scale of a single room.

These interconnected, multi-level spaces redefine the typology of the classroom. Rather than enclosed units organised around a fixed pedagogical hierarchy, they function as flexible platforms for workshops, exhibitions, critiques and collective work. Integrated furnishings, movable desks and display surfaces support multiple configurations, while variations in ceiling height and glazing improve natural lighting and spatial continuity. The result is an environment that encourages interaction not only within individual classes, but across different years and disciplines.

These interconnected, multi-level spaces redefine the typology of the classroom. Rather than enclosed units organised around a fixed pedagogi-

cal hierarchy, they function as shared spatial platforms for workshops, exhibitions, critiques and collective work. Variations in floor level and spatial continuity encourage informal interaction and appropriation, allowing learning to extend beyond the boundaries of individual classrooms. In this sense, educational space is conceived not as a neutral container, but as an active pedagogical environment.[3]

This spatial flexibility responds to a specific constraint—the need to maximise usable teaching space within a limited footprint—but transforms it into an opportunity to rethink educational space itself. In doing so, the building assumes an active role in shaping teaching methods and learning practices, particularly in disciplines where collaboration, experimentation and spatial awareness are central.

More explicitly than in the other projects discussed, the cultural value of the New School of Urban Design does not reside in a protected artefact or curated content. It lies in the architectural space itself, conceived as an operative framework that influences daily practices, modes of interaction and forms of knowledge production. Architecture here becomes a pedagogical instrument, not by representation, but by use.

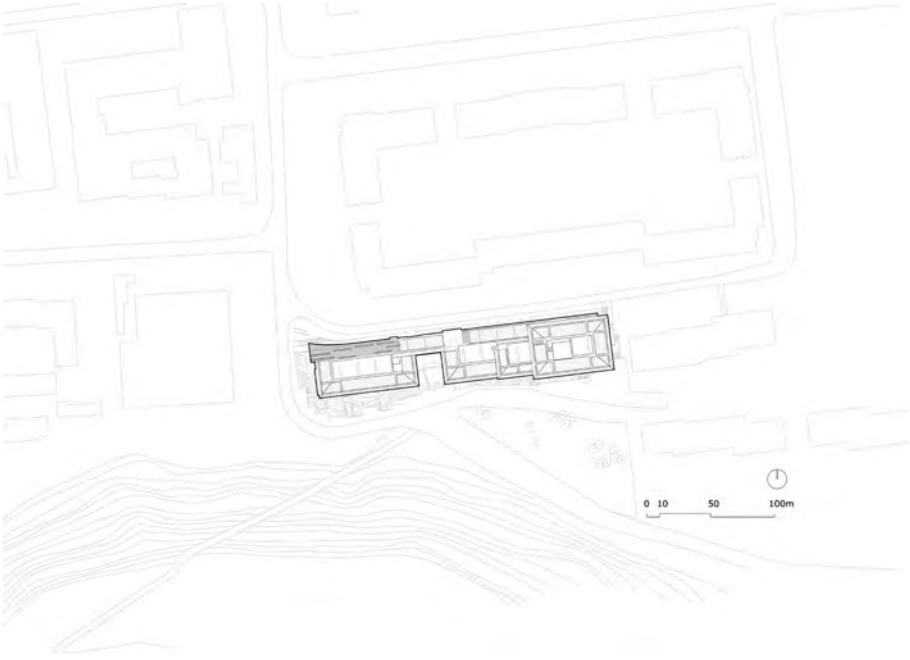
References

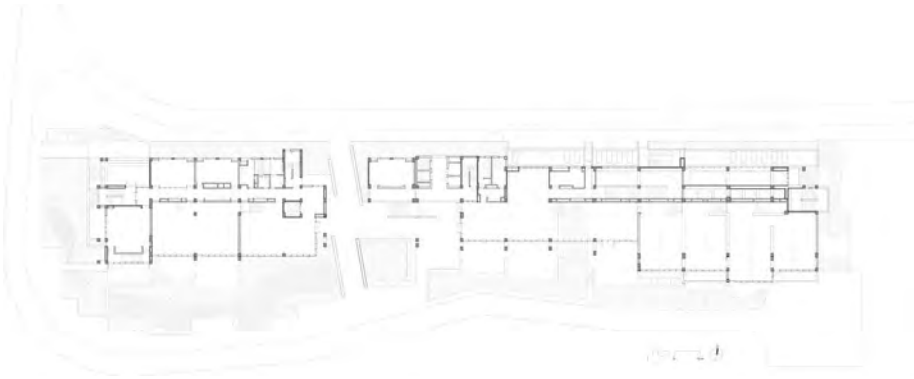
Kulka 1931
Heinrich Kulka, *Adolf Loos: Das Werk des Architekten* [The Architect's Work], Anton Schroll & Co., 1931.

Hertzberger 2008
Herman Hertzberger, *Architecture and Education*, 010 Publishers, 2008, pp. 13–23.

3. Hertzberger 2008, pp. 13–23.

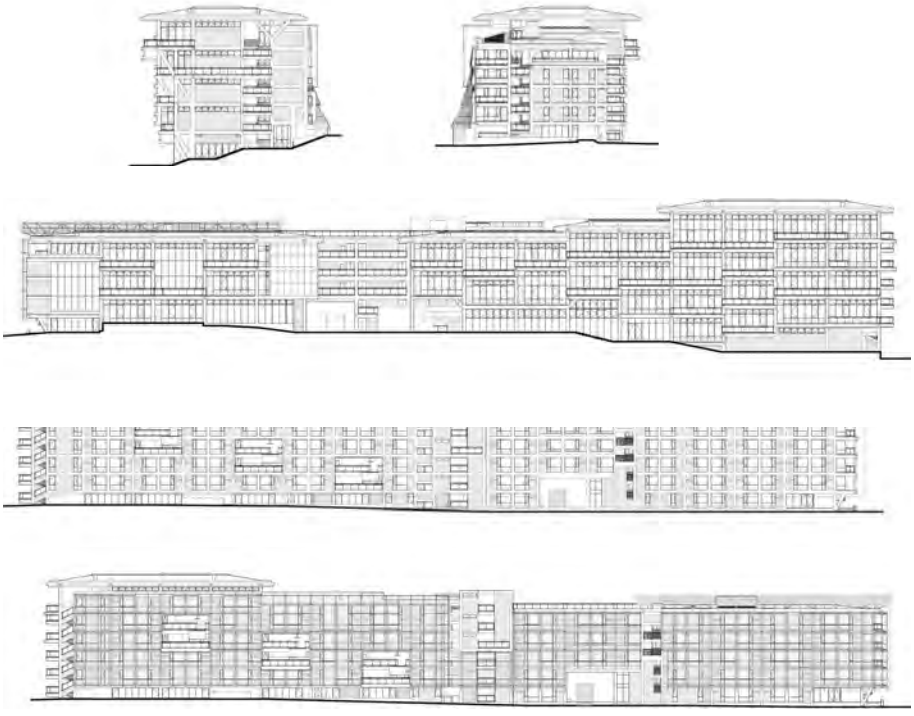
New School of Urban Design, Wuhan University Campus Wuhan, Hubei Province, 2016–2020.
Fig. 2. New Building rooftop.


0 10 50 100m



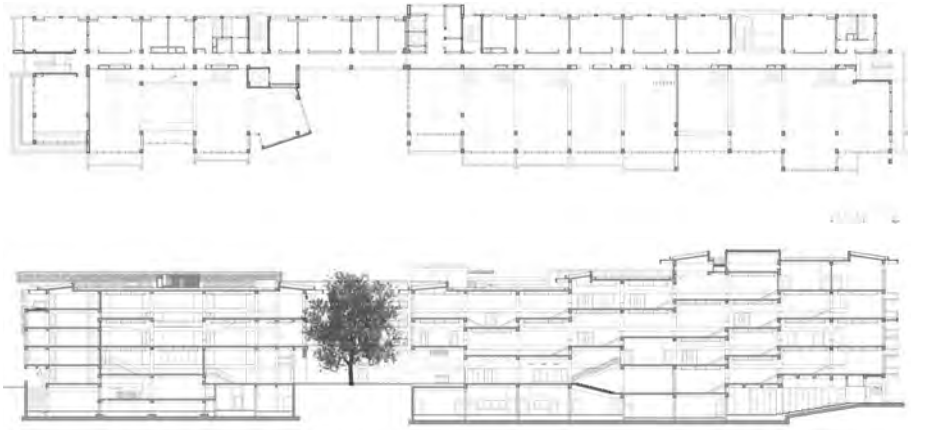
New School of Urban Design, Wuhan University Campus Wuhan, Hubei Province, 2016–2020.
Fig. 3-6. Center of the Campus, Campus Overview, Master and Roofplan, Ground floor plan.

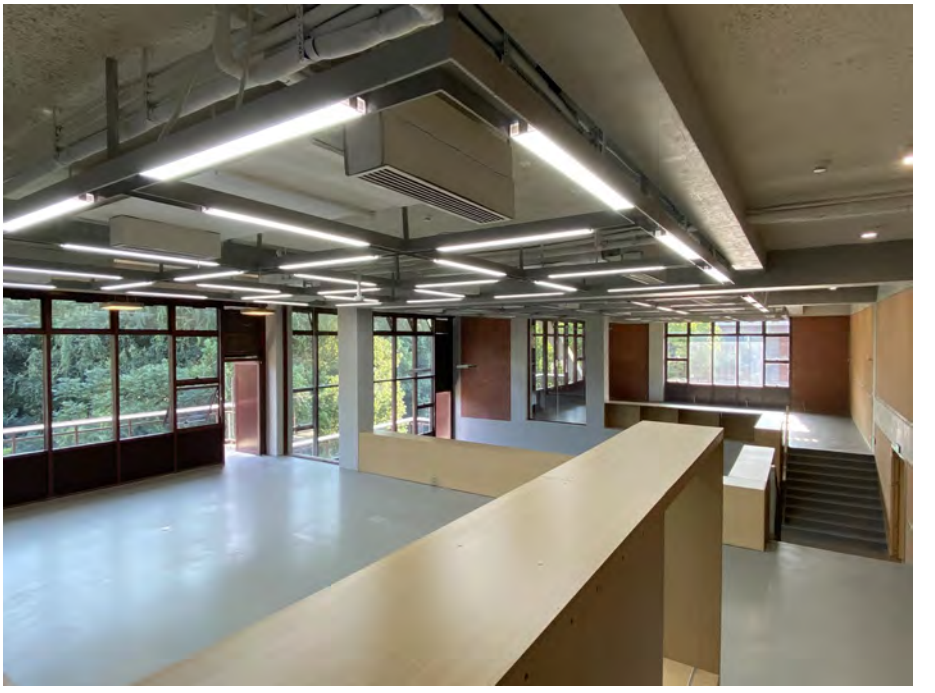
New School of Urban Design, Wuhan University Campus Wuhan, Hubei Province, 2016–2020. Fig. 7-10. Main entrance, plaza, by South Road.

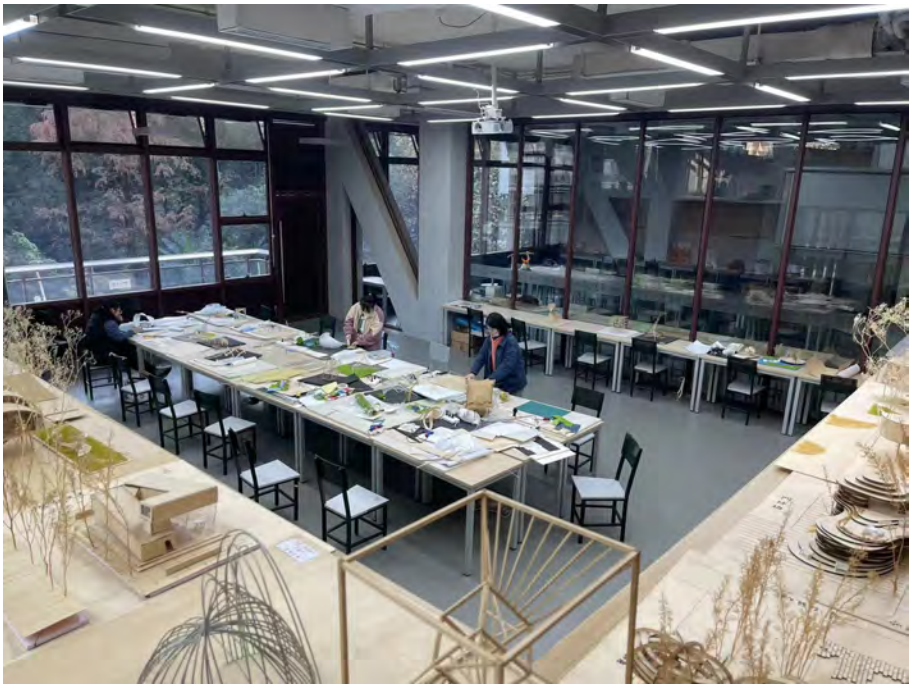


New School of Urban Design, Wuhan University Campus Wuhan, Hubei Province, 2016–2020. Fig.11-14. South East corner, Sections, Elevations, North facade.

New School of Urban Design, Wuhan University Campus Wuhan, Hubei Province, 2016–2020.
Fig. 15-18. South facade, North East facade, North West rooftop and corner.







New School of Urban Design, Wuhan University Campus Wuhan, Hubei Province, 2016–2020.
Fig. 19-23. Typical Plan, Section, Classroom spaces, Sectioned model.

Finito di stampare nel mese di dicembre 2025
con tecnologia print on demand
presso il Centro Stampa “Nuova Cultura”
p.le Aldo Moro n. 5, 00185 Roma
www.nuovacultura.it
per ordini: ordini@nuovacultura.it

[9788833658865_17x24Misto_47_MP04]