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Besides the accretive logic demonstrated in the additions, we also created surgical incisions into the original fabric. Strategic areas were also demolished to enhance natural daylighting, views, ventilation, and circulation between the spaces. Where possible, these newly opened up spaces created outdoor terraces that became social attractors used by the workers. New circulation routes were carved out next to the exterior envelope of the original buildings to form ventilated corridors that required less energy load to condition. The notches also brought light into the deep industrial massings, thereby reducing reliance on artificial lighting systems.

1960s
- Original Separate Buildings (Office and Factory)

1980s
- Mezzanine with dedicated access added

1990s
- Connecting block with dedicated access added

2010
- Bridge Building added to connect original blocks.
- Pathway established between all buildings
Project Details

Author
Wee, H.K. and SKEW

Title
Chinese Academy of Sciences
IOT Centre and Labs

Output
Architectural Design

Function
Laboratory and Industrial
New Build & Adaptive Reuse

Location
Shanghai, China

Date of Completion
2013
The biggest contribution to sustainable building practices for this project was the retention of most of the original fabric, whilst fulfilling the new needs of the client, which included an exhibition hall, laboratories, and offices used by multiple but related departments. The original buildings were reconfigured by borrowing from the accretive logic found onsite – new bridge buildings were inserted to link up the originally disparate blocks, while simultaneously creating new courtyards within the complex.

New laboratories, offices and exhibition spaces are organized around these courtyards and terraces on two to three levels, each having views and access to the natural environment. In this project, sustainability was not only thought of as building performance, but as an alibi for the increased proximity of man with nature, and ultimately, of man with himself.

1 Aerial View of the Bridge Building that formed new courtyards between the original Soviet laboratories.
Summary of the Work and its Significance, Originality, and Rigour

This project is an adaption of two Soviet-designed laboratory buildings in Jiading – a satellite town understood to be the first Science Town in China. The project discusses the historical concept of green utopianism in relation to the Soviet's first interpretation of green buffer zones for urban control and expansion, before Shanghai adopted it in its urban planning. It is imperative for the adapted design and conservation of green to be predicated on the ideological use of green – not only to enhance the built environment for the first generation of scientists and industrial workers, but also as tools of political legitimacy.
and social control. This project was specifically tailored for the Shanghai Institute of Microsystem and Information Technology (SIMIT) under CAS. However, it was the District Government of Jiading who took great care to recommend the conservation of the 1960s Soviet buildings in order to also protect the legacy of the beautiful greenery around the campus.
The Chinese Academy of Sciences IOT Center ultimately tried to humanize a space to what was previously a factory complex meant for heavy duty production. This was ultimately achieved through a careful interweaving of work, social and outdoor spaces. The additions and notches created micro-environments centered around the mature trees, and encouraged a closer relation between the lab and office workers, and nature, while the new façade treatment allowed the end users to experience the landscape in many different ways, while bringing down the overall energy consumption of the complex.
The biggest contribution to sustainable building practices for this project was the retention of most of the original fabric, whilst fulfilling the new needs of the client, which included an exhibition hall, laboratories, and offices used by multiple but related departments. The original buildings were reconfigured by borrowing from the accretive logic found onsite – new bridge buildings were inserted to link up the originally disparate blocks, while simultaneously creating new courtyards within the complex.

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This multiplicity and framing of nature is not merely visual but haptic – the façade, through its highly articulated tectonic, literally increases the contact between building and landscape, interior and exterior. At the same time, ventilated corridors permit natural air circulation and light to enter the long spaces, physically bringing the outdoors in through a transition zone, while reducing the overall energy load of the complex.

Sustainability was not only thought of as building performance, but as an alibi for the increased proximity of man with nature, and ultimately, of man with himself.

1. Interior Courtyards
Originality

This is an adaptive reuse of a part of a research academy built for the Chinese Academy of Sciences in the 1960s – a period when there was a Utopian belief that science and green were politically legitimate ways to advance the state’s modernisation project. In particular, this project was a result of the Sino-Soviet Friendship Treaty era, built from 1960s Soviet blueprints. The Chinese communist ideals gradually moved away from Stalinist styles, in favor of utilitarian and low cost architecture. By the end of the First Five-Year Plan, the Chinese had outrightly rejected Soviet ideas. This new design is a careful reworking of the original socialist ethos of utilitarianism and green. Partial demolition and additions around the existing trees were employed.
Research Questions

• How can non-descript and utilitarian buildings with an important Sino-Soviet and modern architectural legacy be adapted for new functions?
  • How should a national government view the conservation of controversial history, given that they have historically rejected Soviet influences (when Sino-Soviet soured after the First 5-Year Plan)?
  • What are the benefits of intensified greening towards the experience of scientific and lab work? (This was the same research question between the 1930s and 1950s, when Soviet and Chinese planners put forth plans for Science Towns. Jiading was one of the first Science Towns in China.)
  • Can low-density architecture be redensified to meet new needs?
The design sought to minimize the carbon footprint of new construction by retaining as much of the existing fabric, with selective demolition and reconstruction. The newly configured complex possesses a series of intimate courtyards that were created by weaving new architecture through forty-five mature trees and existing building structures.

1. Interior View
2. Design Sections
3. Interior View
Rigour

The project was an opportunity to rethink utilitarian architecture and laboratories as a building type. In particular, the scalar and material relationship to surrounding contexts, and the interaction between interior and exterior spaces were also reexamined.

Key design methods included:

• How to minimize the carbon footprint of the new construction.
• Utilise existing courtyards and establish new courtyards with intelligent placements of the new architecture.
• Preserving the forty-five mature trees and existing building structures in the design.
• How to enhance natural daylight,
view, ventilation and circulation between spaces. In particular, there were opportunities to create more naturally ventilated corridors and common spaces.

• Reflect changes in new programs by humanising the previous laboratory and production spaces into spaces for work, social and outdoor activities.

• Experiment with new methods of multiplying and framing nature to increase contact between building and landscape, interior and exterior.

• Take advantage of the prefabricated construction of the original roof systems, which allowed a systematic removal at places that required improved daylighting.
Significance

This was an important commission by the local government in an effort to adapt and conserve Soviet-designed laboratories built during the Sino-Soviet Friendship Treaty era. Built from 1960s Soviet blueprints that were part of the transfer of technology, these laboratories were built with the scarcest of resources. It is imperative for the adapted design and conservation of green to reconsider the ideological use of green – not only to enhance the built environment for the first generation of scientists and industrial workers, but also as tools of political legitimacy and social control.

Its complexity was compounded by new requirements to upgrade these buildings to new thermal and other functional standards of contemporary
laboratories and offices. New additions of around 30% of the built fabric were required, in order to enhance connectivity within the two buildings, and provide new laboratories, exhibition halls and public spaces. These additions were all dictated by the existing green, as in a case of “form follows green.”

The narrative of the project as a carcass, played out in the accumulative massing of the original site, was evoked through the tectonic moves employed – volumetric projections and subtractions that seem to recall prostheses and incisions – while the complex was linked together through a unified façade treatment.
Dissemination and Evidence of Peer Review

The project won four design awards and accolades. The standout award was the LEAF Award for Best Sustainable Development from the United Kingdom. The award organization described the award as a recognition of “innovative architectural design that sets the benchmark for the international architectural community of the next generation.” Comments from the jury on this winning entry are as follows:

“Sustainability can be achieved by various means, and is optimally an integrative process. This project is very creative in its reuse, with great attention to the natural landscape. The site for this new exhibition center and laboratories was the former 1962 Soviet-designed low-density office cluster sitting amongst a heavily wooded
compound. The design successfully minimizes the carbon footprint of new construction by retaining as much of the existing fabric, with selective demolition and reconstruction. The newly configured complex’s series of intimate courtyards weaves new architecture throughout mature trees and existing building structures, while new laboratories, offices and exhibition spaces are organized around courtyards and terraces on two to three levels, each with views and access to the natural environment. The strategic insertions of new forms and voids within the structural framework of the original complex, and the dialogue between the new and the old is highly effective: it enhances daylight access and natural ventilation, and deploys the landscape of mature camphor and pine trees most imaginatively.”

In the same year, the LEAF award organization also honoured UCL Bartlett Professor and town planner Sir Peter
Hall with a Lifetime Achievement Award (prior to his untimely death in 2014). Other winners in the same year included an international group of top architects, such as Columbia University Professor and Architect Steven Holl Architects, Atelier Tekuto, Oppenheim Architecture + Design, Arup Associates, and Make Architects.

This project is part of a broader decade-long investigation in industrial typologies, with the award of a competitive C-Foundation Design Research Grant. It will also be included as one of six case studies in an upcoming monograph by the author entitled “The Other Factory: Architecture of the Urban-Industrial Complex.” This monograph is in 2019 by Actar and Tongji University Press. This project was also included as a case study in exhibitions at the inaugural Seoul Biennale in 2017, and the Shenzhen UABB Biennale in 2018.
Despite having lush foliage on the exterior, the original fenestration scheme of the factory spaces monotonously framed views to the exterior, as was befitting of the buildings' industrial nature. In the redesign of the complex, we wanted to rectify this and to intensify the experience of nature as one traverses the building. A new window organization was designed to echo the organic rhythm of the trees, while providing the user with multiple ways of viewing nature – through grouped windows, long vertical strip windows, large framed openings, and floor-to-ceiling glazing.

Original Facade Patterning Rhythm

New Facade Patterning Rhythm

Original Facade Patterning Rhythm

New Facade Patterning Rhythm

Nature Multiplied through Framing
Appendix

Awards and Recognition:


Winner, 2013. Best Sustainable Development (in Keeping with its Environment & Use of Technology Incorporated into a Building), 10th Emirates Glass Leading European Architects Forum (LEAF) Award, UK

Winner, 2013. Best Green or Sustainable Build, *Perspective Awards*, Hong Kong


External Competitive Grants:

Principal Investigator, 2019. Design Research Grant, *C-Foundation*, China (Grant Value: HKD533,000)

Books, journals, and references to the project written by others:


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Theory of Adaptation
The Chinese Academy of Sciences (CAS) IOT Centre and Labs

Text by Ying Zhou
Photography as credited / Courtesy of SKEW Collaborative

Converted from a 1962 Soviet-designed office cluster, this new exhibition centre and laboratories in Shanghai retains much of the original fabric with innovation reconstruction. Ying Zhou provides a historical overview of the project and an insight into how SKEW Collaborative’s retrofitting spearheads the adaptive reuse of Shanghai’s industrial heritage.

PROJECT CREDITS
Design Architect: SKEW Collaborative
Local Architect: Jiangnan Architectural Design Institute
Client: Chinese Academy of Sciences Shanghai Institute of Microsystem & Information Technology (SIMTech)
Contractor: Junyu Construction Company Ltd.
Interior Design Consultant: Vermillion Zhou Design Group
Civil & Structural Engineer: Pan-China Engineering Design Institute
Mechanical & Electrical Engineer: Pan-China Engineering Design Institute
Quantity Surveyor: Jading Urban Construction Investment Company
Landscape Consultant: SKEW Collaborative
Land Area: 9,000 m²
GFA: 15,500 m²
Completion Date: June 2012
1 View of West Courtyard.

2 Facade of H-Block
Laboratory Building.

U-BLOCK
1. Offices
2. South courtyard
3. Meeting hall
4. Exhibition hall
5. Southwest courtyard
6. Proposed Bridge Building

COURTYARDS
6. East Bridge-Building
7. Central courtyard
8. West Bridge Building
9. West courtyard

H-BLOCK
10. Laboratories
11. Purification labs
12. Northwest courtyard
Shanghai's urban transformation since its accelerated economic liberalisation has been astounding. This is visible in the physical profile of the city, with its network of highways, rising towers, and glitzy malls. But it is not only in the most conspicuous spatial manifestations where the generation of growth is taking place. A fundamental spatial restructuring accompanying the rapid economic transition from a centrally planned economy to a state-led market economy has created a landscape of potentials. The Shanghai-based architecture think tank SKEW Collaborative's retrofitting of the Chinese Academy of Sciences (CAS) IOT Centre and Labs exemplifies the harnessing of vestigial spatial potentials, in the subtle adaptive reuse of the past era's industrial heritage. Accommodating the growing knowledge-based service industries that would facilitate the current rapid economic transition, the award-winning project's reconfiguration of existing large industry spaces represents the next crop of understated yet crucial urban interventions in urban China.

From Planned Economy to Knowledge Innovation
Situated in the northwestern district of Jiading, about a 40-kilometre car ride from the city centre, the project site previously housed a low-density laboratory cluster that belonged to the CAS. Known in Chinese as the 中科院, short for 中国科学院, the CAS is the highest ranked institute for science and technology in the nation. The original structures, built in the early 1960s, belonged to the Institute of Metalurgy and Ceramics 冶金陶瓷研究所, founded in 1954. The institute descended from the 1928 Research Institute for Materials, which was part of the Republican China's Engineering Research Institute of the Central Research Institute 中央研究院工程研究所. Following the founding of the People's Republic of China in 1949, the research institute maintained its crucial role in the defence and industrial development of the nation.

The original laboratory cluster had been composed of a U-shaped block to the south and a U-shaped block to the north, with heights ranging from one to two storeys. With the discipline of Soviet-era planning ideals that had pervaded the nation-building constructions of the Cold War era, the clusters had a simple and straightforward circulation system, which evoked the modern industrial efficiency suitable for the materials research laboratory. The lab itself had large, column-free spaces traversed by perforated steel beams and prefabricated lightweight concrete to accommodate material testing and experimentation.

Over the decades, additions and extensions have been added to the main body of the clusters, eroding the clarity of its functionally designed circulation and programming. The Cultural Revolution (1965-1975) was a time of great
chaos, and such an institute, even if high on the central government hierarchy, would not have escaped unscathed. Conversion of research spaces into forums for public critique and detention formed the first set of alterations that would be followed by the demands on space following economic liberalisation in the 1980s. In the early 1990s, when China's accelerated economic liberalisation brought a fundamental restructuring to governance structures, the CAS as a national scientific body also underwent reform. Scientific research's contribution to national redevelopment was redefined in the 1998 initiative of the "Knowledge Innovation Programme" (KIP) for the CAS, when a streamlining of personnel and talent attraction were prioritised. Among the pillars for development IT, material science and nanotechnology came to the forefront. In 2001, the CAS Nanotechnology and IT Research Institute was established as a strategic R&D research facility. The CAS Institute of Ceramics, from which it splintered, has facilities that neighbour the site to the east. Today, the institute and its labs are one of the hundred-odd laboratories that belonged to the CAS, and one of the dozen nationally ranked laboratories.

Knowledge Economy for an Urban China
At China's 2006 National Science and Technology Conference, the then-President Hu Jintao pledged to make twenty-first-century China "an innovation-oriented society." And since the early 2000s, the nation's ambitions for its cities to shift from manufacturing-based production economy to knowledge-based service economy have been especially targeted to its coastal cities with their mature infrastructure and financial base. Along with the development of new materials such as photovoltaics and silicon chips as part of Nanotech and IT Research Institute on the site, the establishment of the Centre for Internet of Things (IOT)物联网中心, the first of its kind in the nation, in March of 2010, would spearhead the pilot of Smart Cities Initiative in the Jiading District of metropolitan Shanghai. Epitomising the value-added research of knowledge-based new economy, the Centre is also part of the larger development of the surrounding neighbourhood.

At the end of 2009, the light rail station Jiading North opened. A five-minute walk to the north of the cluster, the station enabled, as did most transit-oriented developments in Chinese cities, the demolition of large swaths of original built fabric around the area. A road that accompanied the light rail development also bisected an original industrial cluster, which had been built around a village. Redevelopment atop the vacated block also became a commercial hub and a luxury high-rise residential compound, triggering functional and demographic changes to the entire area.

The programmatic development of the project coincided with the ascendance of one of the most prominent and accomplished district mayors in Shanghai, who came to the helm of Jiading district in 2006. He not only has a doctorate from Tongji University's prestigious architecture school.
Emphasising the visual, as well as spatial qualities of this original landscape design, SKEW’s proposal interweaves its circulation through the old and new volumes to stitch together the five institutes in the campus.

but his prior development initiatives in Qingpu—another of the suburban districts of Shanghai—had polished his credentials as a patron of innovative design. The convergence of national interest, in the promotion of technological innovation, and local urban ambitions, in the redevelopment of the neighbourhood, found the perfect spatial distillation in the redevelopment of the existing sites owned by the CAS. When demolition plans for the 1960s buildings were tabled to the new district mayor, he rejected the plan. Instead he proceeded to enlarge the land given to the CAS in order to incentivise the redevelopment of the larger block and in the same stroke save the industrial heritage. With financing from the district-operated development company, the end-user of the CAS were requested to upgrade their existing site according to programmatic transformations that would be beneficial to the larger direction of Jiading district’s development. National level tax incentives for innovative industries have been called on that not only help the tax base of local government but also accelerate the urban development of the area. At the same time the district mayor invited SKEW Collaborative, already quite well-known for their conceptually strong design practice, to intervene on the site.

New Programming and Technology
With a tight timeframe that is often synced to the five-year leadership changes in China’s local governments, a site inspection as well as a newly proposed programme for the IoT Centre brought new demands to the outdated existing lab spaces. In addition to the insertion of a set of public spaces, including a centralised lobby and new exhibition space for the institutes, SKEW proposed a series of connections that included open-air corridors and courtyard linkages to inject the cluster with the demands of the new economy. At the campus scale the proposal maintains a porosity for the entire site that allowed the interpenetration of inside and outside, work and synergy spaces, while at the architectural scale, the location of the new lobby space and exhibition hall re-pivoted the cluster’s orientation to the outside.

One of the most beautiful leftovers from the planned era campus was the cluster of mature camphor trees in the courtyards. Emphasising the visual, as well as spatial qualities of this original landscape design, SKEW’s proposal interweaves its circulation through the old and new volumes to stitch together the five institutes in the campus. The design not only eliminated the redundant interventions over the years, but also unearthed the linkages that facilitate the interaction between the new work spaces and the public spheres.

The replacement of the fenestration on the entire facade not only improves the much needed thermal insulation but also enhances the experience of connection to the courtyard and public spaces. The spatial reconfiguration is complemented by architectural moves like insets and extrusions, which maximise the daylight penetration into the reorganised laboratory and office spaces. The smaller office units and the addition of a purification lab offer a new narrative for the circulation network. In addition, the considerations for the demands of the new economy workers bring about the opportunity to reconsider environmental and social sustainability.

With the Central Government’s encouragement of knowledge industry development, the kinds of spatial reuse that incorporates what is perceived as out-dated industrial heritage in the periphery of the city serves the rejuvenation of newly constructed transit-initiated hubs. SKEW Collaborative’s sensitive re-configuration of existing industrial spaces represents the trajectory for sustainable reuse projects of the future.

For more information, visit www.skewcollaborative.com.
중국 과학원 IOT 센터

CHINA ACADEMY OF SCIENCES
INTERNET OF THINGS

SKEW Collaborative

Reviewers' comments

Reviewer A

此项目是对于文化、历史以及城市建筑的一种批评。项目所涉及的建筑形态、空间以及结构都具有非常高的文化价值，对城市空间的塑造也产生了重要影响。整体的现代形式与传统元素的融合，展现了对历史的尊重以及对现代性的探索。

Reviewer B

该项目对于中国的互联网行业发展来说，是一个非常重要的案例。它不仅展示了建筑在互联网时代的新功能和新形态，而且通过新颖的设计理念，激发了人们对互联网和科技的无限遐想。

재생 그리고 혁신

여학 현

오늘날 중국의 급속한 변화는 공정적인 혁신이 있을 때 있는 후기산업시대의 자격을 가진 공정에 더욱 신뢰감이 증대하거나 점차 가까워진다는 주장에 대한 새로운 도구이다. 연구개발, 디자인, 비즈니스 등 다양한 산업 분야가 협력하는 체제는 전통 기술 변화의 주요한 요인들로 판정되고 있다. 이러한 혁신은 기술의 발전을 이끌고, 새로운 시대를 열어내고 있다. 상업과 공공 사이의 새로운 관계를 통해 혁신을 가져온 경우에, 이를 통해 경제적 발전을 이끌고, 향후의 변화를 이끌어내는 복합적인 시대를 열을 수 있다.

새로운 규모를 가질 수 있는 시대는 현재의 시기와 이전에 있는 사회적 수요를 대응하기 위해 변화하는 시대이며, 이를 통해 새로운 기술과 동력이 창출되고 있다. 이를 통해 새로운 시대가 주도할 수 있는 기술과, 인류의 향후의 사회를 만드는 데에 영향을 미칠 수 있다. 전자기의 발전에 따라, 교육과 사회, 경제, 절차의 변화가 일어나고 있다. 이러한 변화는 지금까지의 시대와 달리 전통적인 시대와는 달리, 전통적 시대로부터의 진보를 통해 새로운 시대가 열리는 데에 영향을 미칠 수 있다.

재생의 과정적 차원은 탈영자들이 재생의 과정적 차원을 이해하는 데에 영향을 미칠 수 있다. 전통적 시대로부터의 진보를 통해 새로운 시대가 열리는 데에 영향을 미칠 수 있다. 전통적 시대로부터의 진보를 통해 새로운 시대가 열리는 데에 영향을 미칠 수 있다.

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Renovation, Innovation

Aric Chan

The speed of change in China has long been such that the country's ongoing programme of industrialization is now overlapping — sometimes exhilaratingly, sometimes awkwardly — with the government's push towards a post-industrial, knowledge-based economy. In architecture, perhaps this is nowhere more evident than in the proliferation of new high-tech and creative zones assigned as incubators for R&D, design, media and other firms. Hundreds of these clusters, targeting various industries, have sprung up across Shanghai and Beijing alone.

In many instances, however, these new zones are spurred on not so much by market demand, organic development or even programmatic needs, but rather by bureaucratic fiat, driven by government targets and other agendas that measure success almost purely based on hard numbers. It's a race in which districts and cities compete vigorously, pitting against one another, each vying up the ante. This has led, in many cases, to a build-it-first-and-figure-it-out-later mentality, with architectural experimentation amounting to the occasional rhetorical flourish. The results can be confusing, and confusing, as government imperatives often outpace both the realities on the ground and the capabilities of the bureaucratic operation itself.

Although, located in the Jinling district in the northwest outskirts of Shanghai, SKEW Collaborative's design for the China Academy of Sciences' IBI Center adds a new twist to this state of affairs. At 54,000 m², it's a vast renovation and adaptive reuse of an existing China Academy of Sciences complex built in the early 1960s, a period during which the country was still following a technocratic, Soviet-inspired model of scientific and industrial development. In fact, founded only a month after the establishment of the People's Republic, the China Academy of Sciences explicitly took after its Soviet counterpart as the nation's highest-ranking research institute. Fifty years later, however, its new office, lab, exhibition and other spaces in Jinling form the germ of a much larger project, in a very different time, that will soon see a massive new high-tech zone dominated by two forthcoming towers next door. As such, SKEW's project is in some ways a hybrid, not just of architectural spaces, but of industrial and post-industrial histories as well as of organic and bureaucratic development.

To begin, SKEW partner Koen Wee, Enniece Song and Darren Zhou sought to minimize the project's environmental impact by preserving as much as possible of the site's existing, concrete buildings. To this end, they had been prompted by Sun Jiwu, the then-Jinling district mayor who, upon an earlier visit to the site, had admired the mature canopy and pine trees that dot the landscape, and, determined that every one of them should be saved, felt the same obligation to the structures situated among them.

Under this directive, SKEW began by cleaning up the two existing building blocks — which over the decades had evolved from their original U and H-shaped plans into rather more haphazard aggregations — and therefore adopted a sensitive strategy of addition, subtraction, insertion and linkage. Closely studying the original 1960s blueprints, some of which still bare markings in Russian, the architects determined the essential state of the buildings, conceptually stripping them to their bare ‘cores’. Obsolete and awkward sections were demolished, while bridge buildings were constructed to make new connections. Multiple access points were consolidated with a single, main entrance. Roof terraces were planted. And now, new vertical fenestration patterns and grey facades help to unify the whole, the latter serving to neutralize the visual impact of the buildings in deference to the trees.

The result is a continuous complex that sits and turns around a series of courtyards, its staggered elevations, protrusions and notches lending the impression that it had developed both over time, and all at once. Moreover, the new massing helps break down their overall scale while blurring the distinction between inside and outside via the courtyards, glazed bridge buildings, new ventilation corridors and terraces.

What’s more, the complexity of forms in some ways mirrors the complexity of the client, or rather, the clients. On the one hand, SKEW had to respond to the main end-users, the China Academy of Sciences, which was in fact a great many multiple end-users under several departments occupying the building (which have since doubled in number). Some had very particular needs: for example, a group researching alternative energies required a large new space that could also accommodate massive nitrogen tanks outside. In many cases, there were strict thermal restrictions, and some tenants could only vacate the premises at certain times in order to make way for the necessary construction work; others, not at all.

All the while, Sun Jiwu also had an even more formidable client: the district government of Jinling and its mayor, Sun Jiwu. Trained as an architect, Sun is known as a progressive proponent of contemporary architecture and urbanism, as the district mayor of the nearby Ongou district, he had earlier made his mark by commissioning numerous public buildings through emerging experimental practices including Atelier Deshaus, Scenario Architecture, MDA and Liu Jikun. As part of his effort to transform Jinling from its roots in automotive manufacturing into a high-tech hub, for expanding Shanghai, Sun bolstered his credentials by, amongst other things, awarding the IBI Center to SKEW. The project is in many ways his brainchild. (Sun is now party secretary of another Shanghai district, where he’s overseeing the development of an enormous DreamWorks animation studio and entertainment centre).

Juggling Sun’s priorities, beginning with the trees and ending with those of the end-users, required numerous iterations in the project’s essential design. Indeed, while SKEW refers to their additive-reductive spatial strategy as a kind of Frankenstein approach, the description could equally apply to the multiple agendas that had to be consulted and answered. In this way, SKEW was perhaps an ideal choice of architect, well-known for its willingness to research complex networks and systems, even if traditionally on a global scale.

Such a sensibility is further evidenced at the IBI Center with SKEW’s implementation of a strategic controlled randomness. Intentional level changes and a few seemingly arbitrary, but in fact purposeful, columns placements contribute to the effect, as do the vertical window patterns. Throughout the courtyards and the landscaping, alternating light and dark granite pavers and wood decking scatter and interlace. In the end, in trying to make sense of the existing mortar buildings and site conditions, all the while navigating a range of client demands, SKEW did what it does best. It embraced complexity.
The site for this new exhibition center and laboratories was the former 1962 Soviet-designed low-density office cluster sitting amongst a heavily wooded compound. The architecture of this adaptive-reuse project is predicated on strategic insertions of new forms within the structural framework of the original complex. The dialogue between the new and the old was not just an aesthetic exercise, but also one that is concerned with an enhancement of daylighting, natural ventilation, and the embodiment of new and existing landscape of mature camphor and pine trees. A new fenestration system was developed in order to rationalize and produce new envelopes.

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Introduction: Design Strategy & Innovation

CHINESE ACADEMY OF SCIENCES IOT CENTER & LABS
The Department of Architecture educates students in an active culture of service, scholarship and invention. Uniquely situated at the crossroads of China and global influence, the Department takes the approach that design is best explored from a sophisticated understanding of both. With a multidisciplinary curriculum emphasizing technology, history and culture, students gain broad knowledge and skills in the management of the environmental, social, and aesthetic challenges of contemporary architectural practice. With opportunities for design workshops, international exchanges, and study travel, graduates of the Department of Architecture are well prepared for contribution to both international and local communities of architects and designers.