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Reuse of Old Buildings as Private Architects' Workspaces in Beijing

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Abstract: In 2012, Beijing was designated as UNESCO City of Design, which promotes further development of city's design industries. Architecture always makes an important part in the design industries in Beijing. With decrease urban land able to develop and build, how to reuse old building has been a focused issue. In recent years, increasing well-known private architecture firms/studios, founded by well-known Chinese architects with domestic and foreign education background and working experience in international firms, renovate old buildings into their new workspaces. According to the different features of structures, spaces and forms, architects create comfortable working environments for their employees to interact and communicate, and identify their personal architectural styles and values. Furthermore, a number of abandoned factories and warehouse, outdated multistory offices and hotels, and dilapidated siheyuan buildings were successfully activated by various reuse strategies and renovation approaches. The old buildings reuse as architects' workspaces not only redevelop Beijing's urban land use and urban landscapes, but also successfully converted some of the disorder and bad area into creative cluster with rich art and culture atmosphere, which attracts more creative talents and even become a well-known tourism site.

Keywords: Reuse of Old building; Renovation; Architects' workspaces; Beijing.

1. Introduction

In 2012, Beijing was designated as UNESCO City of Design. Along with its reputation as an economic and industrial power, Beijing is recognized as an established international platform for design undertaking various practices for international exchange related to design. The city's focus, investment

and policies on creative industry enhance the future design capacity of the city. The design industry has become major pillar for modern service industry in Beijing, which achieves the leading level in the country. It has formed a design system composed of architecture design, planning design, visual communication design, industrial design, fashion design, arts and crafts design.

Architecture design is one of the traditionally competitive cores of creative industries in Beijing. With the economic growth and upgrading of city functions, Beijing owes its development to the architecture design greatly. By 2014, there are more than 2000 architecture institutions ranged in different scales registered in Beijing, and basically could be classified into state-owned architectural design institutes, design groups, and privately-owned architecture firms, studios. Among them, nearly 350 institutions have certified architecture design qualifications. Certified architecture institutions are able to provide full architectural design services, from concept design stage to construction design. Uncertified institutions more likely provide architectural consultation services, and collaborates with certified firms during construction design stage.

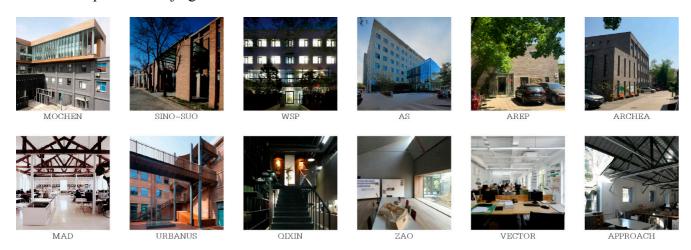
Generally speaking, state-owned architectural design institutes/design groups are always large-scale and certified. BIAD, for examples, has more than 4000 staffs and provides a wide scope of design service including civil architecture design, urban planning, landscape design, interior design, etc.. On the hand, privately-owned architecture firms/studios, certified or not, have relatively smaller scales, ranged differently from hundreds to couples of people. Though smaller in scales, quite a few private firms/studios, founded by well-known Chinese architects with domestic and foreign education background and working experience in international firms, also play a very important role in Beijing's architectural design industry. Unlike state-owned institutes and design groups locate in their former office buildings or new office towers, more and more private architecture firms and studios reuse of old buildings as their workspaces in these years

2. Typology and Distribution

2.1. Well-known private architecture firms and studios

Through online and onsite research, the author has confirmed that more than eighty private architecture firms/studios reuse of old buildings as their workspaces through renovations, including national leading commercial architecture firms like MOCHEN, SINO-SUO, WSP etc., world-famous foreign architecture firms' local office like AS, AREP, ARCHEA etc. and most of the creation oriented design studios lead by famous architects in China like MAD, URBANUS, FCJZ, QIXIN, PEI-ZHU, ZAO, VECTOR, APPROACH etc.. On one hand, under the circumstance of incessant urban expansion, old buildings being renovated more likely to situate closer to downtown area with better location and environment; On the other hand, comparing to ordinary office buildings, old buildings give architects more creation space during the renovation so as to create an ideal and comfortable environment which shows particular design style and individuality.

Figure 1. Well-known private architecture firms/studios' reuse of old buildings as workspaces in Beijing.



2.2. Various types of old buildings to reuse

Through the transformation of old buildings into self-use studios, architecture, as an important part of creativity industry, focuses on the ingenious reuse of old buildings including vacant and abandoned urban factories, commercial and office facilities in scarce use and Siheyuan buildings in the old town which have terrible living condition and high density. In this way, urban land can be optimized, with urban features being promoted and urban renewal being elevated.

There are multiple ways for architecture firms/studios to reuse old buildings. In terms of former functions of those buildings, they can be classified into two categories: reuse of industrial buildings (factories, warehouses etc.) and reuse of civil buildings (offices, classrooms, hotels etc.); in terms of renovation and development modes, they can be classified into separated renovation and integrated renovation; in terms of renovated space types and modes, they can be classified into reuse of factory buildings, reuse of multistory buildings and reuse of traditional Siheyuan buildings.

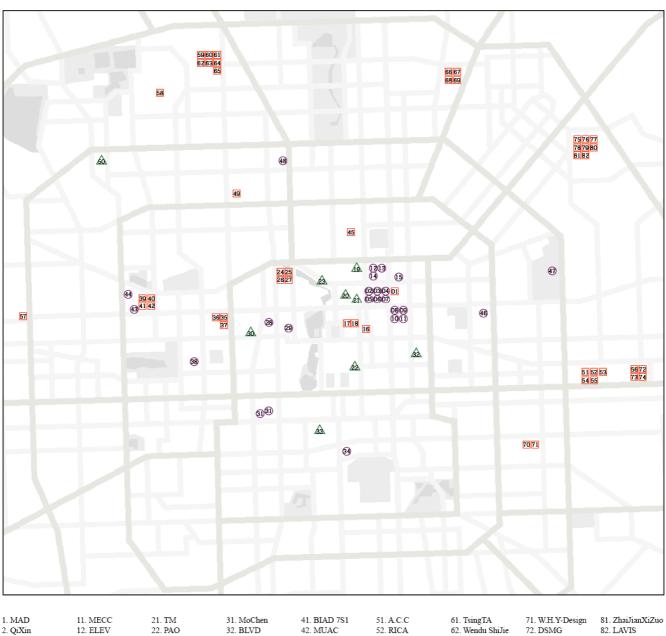
2.3. Both independent and aggregated distribution

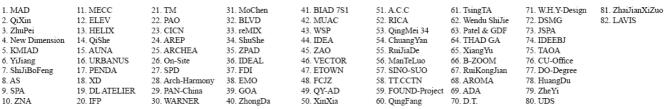
In all, architects' workspaces renovated from old buildings mainly locates in the central area of Beijing in either individual or clustered ways. Individually distributed architects' workspace usually acts as self-use office building for individuality when architecture firms/studios are able to find appropriate old buildings and do the renovation. Clustered distributed architects' workspaces are usually being used after the integrated renovation by government or developer, which are then being renovated in more personalized style based on the reality.

Architects' workspaces renovated from factory building mostly rely on the former industrial resource arrangement which mainly locate between the 2nd Ring Road and the 5th Ring Road in Beijing. They gather around large creativity industrial parks renovated from old integrated industrial parks including 768 DCP (768 Dahua Electronics Factory), Legend Town (The 2nd Beijing Cotton Mill), Xinhua 1949 (Beijing Xinhua Printing House), Foreign CCPark (Beijing Waiwen Pringting House), 798 Art Zone (718 Joint Factory) etc.; those studios renovated from multistory buildings mostly locate inside the 2nd Ring Road (Beijing Old City). Among them, those office buildings sometimes renovated from former

industrial enterprise research buildings including BDK (Beijing Television Equipment Factory). LD Design Center (The 2nd Beijing Computer Factory), Fangjia Hutong 46(China machine tool factory) etc. have gathered many architecture firms/studios. Meanwhile, architectural studios renovated from Siheyuan buildings also mostly locate inside the Second Ring (Beijing Old City), most of which locate inside the "Beijing Historical Cultural Conservation Area" with scattered distribution and fail to locate in clusters.

Figure 2. Distribution of architecture firms/studios reuse of old buildings in Beijing.





3. Factory buildings reuse as architects' workspaces

3.1. Based on industrial parks

As one of the most important industrial city in the past, Beijing built a large number of industrial zones in urban core and suburbs. With the urban sprawl, lots of old industrial factories had been gradually classified into the central part of city. The surroundings of those industrial factories already have convenient transportation system and advanced infrastructure From the 1980s, due to the environmental pollution, those original industrial enterprises started to move out. After the great success of the '798 Art Zone' in the late 1990 s, people began to realize the huge potential of using vacant and abandoned industrial factories as workspaces or exhibition spaces of creative industry.

Most of architecture firms/studios using old renovated factory buildings as their workspaces locate in the old industrial parks. Lots of old industrial parks such as Beijing Xinhua Printing House, Beijing Waiwen Pringting House, The 2nd Beijing Cotton Mill, 768 Dahua Electronics Factory, China machine tool factory etc. successfully attracted a huge number of architecture firms/studios. According to different development modes and the process of generating, the relationship between architecture firms/studios and industrial parks could be divided into two types: the first type of firms/studios, able to find appropriate old buildings, rent them for years and do the renovation independently. Sometimes their success gradually attract more creative industry companies to the old industrial park, and in this way accelerate the overall development. The other type of firms/studios move into industrial parks which have already been renovated by the government or developers. According to their demanding, those firms can make further design such as the entrance and interior space.

3.2. Openness and unified spaces

Most of industrial factory buildings have regular geometric, high and open internal space, which brings lots of possibilities to renovate and reuse. Besides, the unique aesthetic and historical traces of industrial elements always attract architecture firms/studios.

SINO-SUO is located in an old industrial zone on the west side of the 4th Ring Road. This architectural firm was renovated from a 60 x18m abandoned precast slab factory. During the renovation design, the architects preserved rebuild preserve the original structure and industrial elements such as crane beam. The original structure of the roof has been totally exposed to the interior workspace. Simply printed with white coating, the wall keeps the original texture of the tile and maintains the barbaric style of the architecture. The architects tactfully divided the 11m height space into two floors as a 'loft' form. In this way the whole space was separated into two parts with different functions while still continuous as the same time. The down stairs is the office area, which is more private. Upstairs is the reading room and the meeting room, which also serves as the public space. The designer deliberately enlarged the stairs area between the two floors, so that the stair could be used as a lecture space to host academic events. Up to now, that space has already hosted lots of international academic events including 'Talk to Richard Rogers'. The renovation period is less than two months.

Figure 3. (a) Interior "loft" workspace of SINO-SUO office. **(b)** Factory building after renovation. **(c)** Stairs area used as lecture space.



Figure 4. (a) Interior full-height workspace of IDEAL office. (b) Sections.



The IDEAL office is converted from the old Xinhua print-press warehouse. Subtle special contrast of the new additions from the existing was carefully defined. Because the 7m original clear height was hard to insert two floors, the architects challenged the conventional method of extension by digging out new from the underground of the building. The new additions extends the interior territory and forming a flexible special organization. Then the space was divided into three parts horizontally: the circulation space with different levels in the middle, the full-height open workspaces and private double floors workspaces on each side. The different spaces embrace each other, providing an environment for staffs to interact and communicate. According to the original space and structure, light-wells was designed on

the ridge of the roof which has greatly improved the interior natural lighting gain, providing a comfortable environment by bringing sunlight into the whole factory instead of using artificial lighting.

3.3. Original industrial aesthetics

Legend Town, which have gathered lots of architecture firms/studios, was renovated from the 2nd Beijing Cotton Mill's single-layer zigzag shape factory built in 1954. Because the original huge scale interior space was too big to use, the architects added a 5x6 grid channels so that the old factory buildings could be divided into 30 independent units. Along the new channels, original oblique roof panels and vertical windows were removed to create an open space, while all of the folded reinforced concrete beams had been carefully kept so as to maintain the original shape of roof. They were also further used as the industrial design element in creating the unique park path, landscape and courtyard. During the renovation, the new added facades to enclose the 30 units were designed as simple as possible in order to the industrial aesthetics of the original structures. Reinforcement measures were taken around the existing structures. The designers did their best to reduce new structure which will impact the original space.

Figure 5. (a) Bird view and site plan of Legend town. (b) New channel and unit interior space after renovation.



Near several famous national universities and design academies, 768 DCP which used to be an electronics factory, have also gathered many architecture and landscape design firms/studios. Different

from the Legend Town integrated developed and planed by one designer, 768 DCP divided those 150m-long factory buildings into smaller units based on the original structure, and offered them to different firms/studios to renovated themselves according to their own demands. However, the original appearances and materials were required to maintain. In this way, under an overall coordinated industrial architectural style, entrance spaces with different personality and characteristics were created, which greatly increased the diversity and successfully activated the entire park space

Figure 6. Different entrances of architecture firms in 768 DCP.







4. Multistory buildings reuse as architects' workspaces

4.1. Whole building or rent by floors

There are various types of multistory buildings being reused as architects' workspace in Beijing, such as old office building, research building, hotel, education building etc. Most of them were built between 1950s and 1980s. Those buildings were usually abandoned because the original functions were no longer fitted or the owner just decided to move away. Those old buildings are more likely to situate closer to downtown area with better location and environment. Most of those multistory buildings use frame-structure system, which provides architects more creation space during the renovation.

The multistory buildings could be reused in various ways. A building could be rent by a single architecture firm/studio independently, as well as rent by different firms/studios located on each floor. MOCHEN, for instance, rent an entire old office building then renovated it to their self-use workspace; WSP reuse a mechanical and electrical repair station as their new office; AUNA renovated the accessorial part of a hotel. Another kind of architecture firms just rent one or several floors or several rooms of a building as their office. They usually focus on the refurbishment of interior space. The advantages such as high floor height, open space, frame structure etc. make those multistory buildings much easier to reconstruct. Some multistory buildings have been entirely renovated and upgraded by the government or developers, becoming creative industrial parks, such as BDK, Fangjia Hutong 46, LD Design Center, Xihai 48 etc., which attract several architecture firms/studios at the same time. This kind of creative industrial parks always have advanced infrastructure and creative atmosphere.

4.2. Flexible renovation approaches

MOCHEN locates in a renovated 5-storey building which used to be a typical office of Beijing TV Technology Research Institute. During the renovation, the architects kept the old façade appearance, and reprinted into grey. A gate-shaped box made of black stainless steel plate mesh was added outside the

original main door. The designers wrapped the old fourth and fifth storeys into a wooden L-shaped box, with glass shading panels on one side. On one hand, the two new additions with new materials and appearance make an interesting contrast with the old brick façade; on the other hand, the organization and order of the original space are carefully maintained. Inside the building, the architects fully took the advantage of the frame structure. Interior space with great openness was created through placing big openings on the floor and the full-height space in the wooden box. After the renovation, the urban landscape and the public space were greatly improved.

Figure 7. (a) MOCHEN office's appearance after renovation. (b) Floor plans. (c) Comparison before and after the renovation.



Figure 8. (a) LD-Design Center's appearance after renovation. **(b)** Interior space of the glass cube. **(c)** Interior space of SPARK office.



The LD Design Center is renovated from a 7-storey research building and a 3-storey office building which used to belong to 2nd Beijing Computer Factory. After an integrated renovation, the LD Design Center attracted tens of creative companies including architecture firms/studios with over 400 designers. During the renovation, a 3-storey height glass cube was added to be the main entrance hall where different designers interact and communicate to each other. The cube, which also serves as a multifunctional space for some scheduled salons and exhibitions, become a striking landmark attracts different people from the street. The renovation of the interior workspace on each floors were then left to the

settle-in architecture firms/studios themselves. For example, SPARK on the 2nd floor tried to keep the original space uninterrupted during their renovation. Demolishing the window up stands of the exiting brick façade towards the glass box gave way to a much desired permeability of the space. Alongside the main work space a continuous wall of metal cladded swivel doors allow for a playful and flexible configuration of "open and close".

4.3. Resorting and reorganizing the whole space

Renovated from an old 4-storey mechanical and electrical repair station, WSP created an 650 sqm self-use office building. The architects organized the interior space in a simple and compact way with the spatial scale of humanity. Translucent glass is used as partitions to keep the sight continuous on each floor. Every employee's workspace are arrange equally without any hierarchy regardless of their different positions. Compare with other architecture firms, the communication spaces in WSP office occupy a much larger proportion. Within the 650sqm building, more than 10 meeting/resting rooms are placed to encourage every designer to present their own idea. The architects of WSP tried to use their workspace to reflect their consistent architectural values of equality, democracy and humanity.

Figure 9. Appearance and interior space of WSP's office after renovations.









Figure 10. Appearance and interior space of AUNA's office after renovations.









AUNA office locates in the west wing of Beijing Huaqiao Hotel, which was designed by Chinese greatest architect Sicheng Liang in 1952. During the renovation, AUNA fully respected the original appearance of the building. By adding pieces of grey walls and metal-panel gate, the architects created

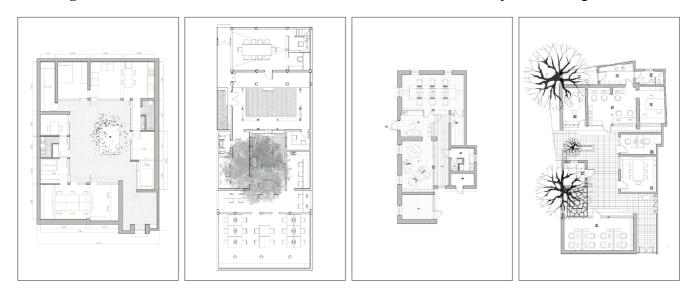
a new entrance space different from the original building in material and scale. Inside the building, old ceilings, partition walls, face brick and unnecessary additions were removed, in order to return back to the original simple but dynamic space. The concrete beams and pipelines under the roof were totally exposed, which brought a spatial power of rough. The architects use white as the main interior color, and maintained the original texture of the material. Concrete walls, cement floors and stairs, white plain wall and white varnish furniture create a subtle contrast. The roof top in the west was converted to a roof garden which provide good view to all parts of the workspace.

5. Siheyuan buildings reuse as architects' workspaces

5.1. Studios hidden in Hutong

Siheyuan, a historical type of residence in Hutong, is a significant part and a cultural symbol of the Beijing old city. In recent years, Beijing have made exploration about the protective reuse of Siheyuan. Some Siheyuan have been rebuilt as hotel, restaurant, traditional style retails, even theater. The cultural consumption market of Beijing have been promoted, and the value of Siheyuan have been enhanced at the same time. As Beijing applied the UNESCO City of Design successfully, a series international events such as 'Beijing Design Week' insert various kinds of exhibitions and project into the unique Hutong fabric and Siheyuan space. Those international events made great achievement in the revitalization of Siheyuan and Hutong area. Lots of creative groups including architects move into in the Siheyuan building and activate the traditional blocks with prosperity.

Figure 11. Plans of different architecture studios renovated from siheyuan buildings.



Locate in the most traditional center of Beijing, Siheyuan buildings, which have the ancient urban fabric, appropriate scale, alive neighborhood and natural environment, have extraordinary attraction for young architects. Increasing foreign architects or Chinese architects with the studying abroad background come together into the Hutong area and set up their own studios. According to the author's research, most architecture studios using renovated Siheyuan buildings as their workspaces usually have small amount of people. Some studios hold the entire Siheyuan, while some others only rent couple of

rooms. The range of area is from the dozens to hundreds of square meters. The distribution of Hutong architectural firm is dispersed, have not formed a concentrated areas yet. The accessibility and publicity of Hutong architecture studios need to be improved.

5.2. Spaces well organized by courtyards

IFP studio locates in one siheyuan's side houses in Heizhima Hutong. Apart from the daily work, the studio always borrow the courtyard to hold architecture and art exhibitions, art shows and unique installations.

Figure 12. Courtyard and interior space of IFP studio after renovations.







BLVD office in Lumixiang Houcang Nanxiao Street was renovated from a 760 sqm typical siheyuan. After restoration and preservation, architects changed the function arrangement of the old buildings and improve the original residential space. By introducing the idea of modern open office into the traditional courtyard, the old siheyuan were successfully activated, making the space filled with sense of design. The architects tried to use simple, natural and plain material to integrate into the existing environment.

Figure 13. Courtyard and interior space of BLVD office after renovations.







5.3. Traditional Beijing Style

Through restoration or preservation approaches, siheyuan buildings reuse as architects' workspace always maintain the traditional architectural appearance and style. Entrance of Meta-Project and IFP, for example, almost remains the same as before and hide among the others in a humble way; reMIX, DL atelier, PAO, Design Trademark just change the material or color of the gate to create some subtle hints for visitors.

Figure 14. Entrances of different architecture studios renovated from siheyuan buildings.







The renovation of interior space differ from each architecture studio based on their own demands. IFP, for example, totally maintain the old-time remains; Meta-Project and PAO removed the ceiling and reprinted the interior wall and beams; Design Trademark added a curved wall to separate the working space and living space; reMIX studio add a mezzanine according to their original clear height.

Figure 15. Interior workspaces of different architecture studios renovated from siheyuan buildings.











5. Conclusions

The successful reuse of old buildings as architects' workspaces in Beijing now attracts increasing number of architecture institutions as well as other creative industries company moving from regular office tower into old buildings. On one hand, it shows rich reuse potentials of different old buildings and

ingenious renovation possibilities. According to the original characters, the architects fully take the advantages to create comfortable working environment for their employees to interact and communicate and identify their personal architectural styles and values as well. As Jianwei Xu, the chairman of SINO-SUO, indicated in a lecture, their workspace renovated from the factory building stimulated the architect's creative potential, and even largely increased their contract signing rate after clients visited their unique workshop. On the other hand, by successfully activating those vacant and abandoned urban factories, commercial and office facilities in scarce use and siheyuan buildings in bad conditions, the reuse of old buildings as architects' workspaces help to upgrade the city functions and improve the urban landscapes, which make it a significant approach for Beijing urban renewal.

Although the general success, there are still several aspects need to be improved. Firstly, the publicity and openness of the architects' workspace should be improved. Apart from few institutions in creative parks, most of the architecture firms/studios are quite unopened to the public without creating any entrance public spaces or display windows, etc., though most of them do have the conditions. Secondly more specific policies need to be carry out to enhance the reuse of old buildings. Through the author's research, there were a number of famous architecture firms/studios, UA Design and TAO Trace i.e., used to renovated old factories as their workspaces but had been forced to leave because an overall demolishment by developers; Some other small studios had to leave because they couldn't afford the constantly rising rent. Government promotion is necessary to provide more stable and appropriate environment for those architecture firms/studios reuse of old buildings.

Conflict of Interest

The authors declare no conflict of interest.

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List of Illustrations

- Figure 1: Based on different architecture firms/studios' websites, by author
- Figure 2: Based on Google Map, by author
- Figure 3: (a) XU Jianwei, GAO Wenzhong. SINO-SUN LOFT Creativity Incubator [J]. UED, 2013-
 - 08. Photo by GAO Wenzhong
 - (b): Photo by author.
 - (c): Richard Rogers Lectures in SINO-SUN. SINA website,
 - http://heze.house.sina.com.cn/news/2013-11-26/15302511986.shtml
- Figure 4: IDEAL Office. IDEAL Design and Construction website,
 - http://www.ideal.com.cn/en/case_desc.aspx?t=c&id=107
- Figure 5: XIA Tian. Summary on the Design of Legend Town [J]. Urbanism and Architecture, 2012-02. Photos by SHEN Ming
- Figure 6: 768 DCP. 768 DCP Website, http://www.768dcp.com/fc_list/&newsCategoryId=c0f49517-2bca-4d46-a27b-0515ae950381.html.
- Figure 7: (a):MoChen New Office. MoChen Website, http://www.mochen.com/
 - (b): WU Yong. Roaming in the Long Rivers of Years MoChen Architects' Beijing Office Tower Renvation [J]. Time + Architecture, 2010-06.
 - (c): MoChen New Office. MoChen Website, http://www.mochen.com/
- Figure 8: (a): Space & Service. LDDC website,
 - http://www.lddc.com.cn/index en.php/Changdi/index/id/10
 - (b):Space & Service. LDDC website, http://www.lddc.com.cn/index en.php/Changdi/index/id/10
 - (c): SPARK Beijing Office. SPARK architects website,
 - http://www.sparkarchitects.com/work/pgr2lmt68vgae3dg#2
- Figure 9: Beijing WSP Building. WSPARCH website, http://www.wsparch.com/showcase.
- Figure 10: AUNA Office Interior Design. AUNA website, http://www.auna-auna.com/en/?p=711.
- Figure 11: Based on Ramble-Office in Hutong. Gooood website. Redrawn by author.
- Figure 12: Ramble-Office in Hutong-IFP. Gooood website, http://www.gooood.hk/ramble-ifp.htm.
- Figure 13: BLVD Beijing Office. Blvd website, http://www.blvd.com.cn/en-us/interior/138...
- Figure 14: Photos by author.
- Figure 15: Based on Ramble-Office in Hutong. Gooood website. Redrawn by author.
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