The Workers Village Project: Incorporating Heritage Buildings into Urban Regeneration

Miguel Hernandez Lopez, Paul Wakefield, Carolina Trujillo, Monica Zgaib, and Rafael Moneo

Introduction

The Workers Village in the Tiexi district of the city of Shenyang, China, was identified as a key project for urban revitalization and strengthening of urban heritage. It became part of the EU-China Liaoning Integrated Environmental Program (LIEP)[1], launched in September 1999. LIEP ran for five years, with a total investment value of almost 50 million Euros; it is considered the European Union's largest and most complex technical cooperation program in China to date.

In developing the Workers Village project, Avenue TWC[2], an EU consultancy, based its plans on the conservation and housing rehabilitation strategy developed by the respective working groups of LIEP. The strategy focuses on a village of 118,000 square meters that is considered a heritage asset of the Russian period of occupation. This area was designated one of eight housing conservation areas in Shenyang and suffers from a high degree of physical and social deterioration.

The Workers Village project was one of three strategic projects developed by Avenue TWC for the regeneration of the Tiexi district. The project was set up as a symbol of urban regeneration, sustainability, and strengthening of urban heritage. It involved the development of a master plan that would ensure the conservation of this heritage asset and promote the creation of a new vibrant, sustainable urban area.

The following essay centers on the Master Plan developed for the conservation area of Workers Village. Special consideration is given to the project's background, which involves the heritage and urban regeneration strategy for Shenyang and the Tiexi district developed under LIEP.

Project's Location: The City of Shenyang

Figure 1.1

The Workers Village is located in the city of Shenyang, China. The city, with a total population of approximately 7 million inhabitants, is the largest city in northeast China and the country's fifth largest city. It is the administrative center of Liaoning province as well as its economic and cultural heart.

Shenyang is situated approximately 800 kilometers northeast of Beijing. To the east, Liaoning province borders Korea and is close to Japan; to the north, it is close to Russia. Shenyang has the biggest civil airport in northeast China and is a key communication hub for railways as well as road transport in Liaoning province. Shenyang was once the imperial capital of the Manchu emperors and is now an important center for manufacturing and tertiary education.

Its rich built heritage has enabled Shenyang to develop into a fine modern city with not only a glorious past but also a distinct regional identity and continued cultural relevance. Liaoning province, and Shenyang in particular, was at the heart of China's industrial revolution. During the 1950s and 1960s Shenyang boasted one of the largest concentrations of heavy industry. Since then, however, technological advances, globalization, and shifts in the world economy have rendered many of the city's plants obsolete and precipitated the difficult process of industrial restructuring. At the same time, growing environmental awareness has prompted major investment in cleaner production methods and more stringent pollution control.

Today Shenyang is at the heart of China's drive towards a socialist market economy. The city's new urban economy will increasingly be based on light manufacturing, services, and information technology. The resources required to fund this transition will be found more and more through stock market capitalization.

Regarding city planning, the municipal government has a vision of a vigorous, sustainable city based on well-paid, modern sector jobs, with good housing and a full range of urban facilities and efficient public services. This vision is enshrined in the 10th Five Year Plan and the Shenyang Master Plan of 2010. The current master plan, which was approved in December 1999, has established a sound strategic planning framework for the city.

In Shenyang there is a multitude of new housing developments, almost exclusively of multistory design. The building of new housing developments is made possible, in part, by the demolition of existing housing stock that is considered obsolete and not warranting rehabilitation

The above-mentioned expansion of Shenyang's housing stock has taken place despite large-scale demolition of older housing. According to data from the Construction Commission, more than 8 million square meters of housing was demolished between 1991 and 2000. Some of this was commercial redevelopment, but it is probable that the great majority of demolitions were for residential projects by work units and private developers.

It seems likely that the rate of demolition in Shenyang and other Chinese cities involves a needless waste of valuable capital assets. At present, the prime demolition targets are the old single story houses and apartment buildings that date from the 1950s. Many newer buildings have also been demolished because of the incentives for work units to set up redevelopment agreements with private developers. It may be that most of the remaining 1950s buildings are beyond salvation.

Urban Heritage in Shenyang

Shenyang was once the imperial capital of the Manchu emperors; it is a historic city with a colorful history. China's last feudal dynasty, the Qing (1644-1911), originated here. The architectural legacy of the period includes many fine buildings and complexes. The city holds some of China's most important cultural and architectural heritage, particularly the imperial palace of the Qing dynasty in downtown Shenyang and the two imperial tombs, respectively at the northern and the eastern outskirts of the city. It has been estimated that in 2001 Shenyang attracted about 180,000 travelers who came primarily because of the city's cultural heritage.

During the period leading up to the People's Revolution in 1949, Shenyang experienced repeated occupation by foreign powers. Today, many significant Sino-Japanese and Sino-Russian buildings have been incorporated into the contemporary urban fabric.

The city is associated with the architectural mix of the Imperial Palace, which combines Han, Manchu, Mongolian, and Tibetan architectural styles. Splendid though this architecture is, it is found only in a few locations and has not generally influenced the appearance of the rest of the city. The architectural character of Shenyang is based on more recent history and the tides of foreign influences that have swept across this region. Thus, the principal influences through the twentieth century were Japanese and Russian styles. The Japanese were particularly prolific builders in the city.

There is no obvious correlation between design quality and building condition in Shenyang, suggesting that many fine buildings have already been lost. It appears that concepts of conservation, aside from the preservation of a few distinguished monuments, have been regarded as an unnecessary luxury or, as during the Cultural Revolution, simply irrelevant. However, there is still an adequate stock of heritage assets to ensure that Shenyang develops into a fine city with not only a glorious past but also a distinct regional identity with continuing cultural relevance.

The rapid pace of redevelopment within Shenyang has taken a heavy toll on the built heritage. Throughout the area, buildings with character, those that endow a "sense-of-place," and those that could be cost-effective to reuse have been much abused or, more often, simply demolished.

Incorporation of Heritage Buildings in Shenyang's Urban Regeneration

Shenyang's old buildings provide important links to events of the past: momentous events in China's history and local events of significance. Preservation of built heritage is a measure of a society's progression from struggle to self-assurance and reconciliation with its past. Old buildings, preserved judiciously and adapted to new uses, provide:

an essential element of physical continuity to retain a link with the past,

an essential contribution to the maintenance of a distinct regional identity, and

an essential environmental support to social cohesion and community values.

Perhaps most convincingly, conserving key heritage assets in the urban landscape adds value to the urban environment overall and particularly enhances the quality of neighboring new developments. These attributes of preservation have been demonstrated throughout the world. It is now conventional wisdom that this obvious fact is only appreciated when the damage is done and the assets are lost.

In many other countries, and indeed in other parts of China, urban regeneration programs combine new-build with rehabilitation and reuse of the existing building stock. Indeed, in comparison, the challenge is not especially difficult in Shenyang. The buildings are not particularly old, and though construction quality may be poor, it is not especially so.

Heritage buildings—particularly intact city blocks, coherent facades, and free-standing villas and mansions—can be integrated into amenity "open space" and urban landscaping, as venues for public activity, including commercial pursuits and leisure. These areas can be used to maintain areas of lower density to support a broader range of essential public amenities in high-density redevelopment areas.

The Workers Village Project

The Workers Village is located in the district of Tiexi. It is an existing village of 118,000 square meters that is considered to be a heritage asset from the Russian period of occupation. The Workers Village suffers from a high degree of physical and social decline, which is why immediate steps are necessary to save this heritage asset from demolition.

The project was conceived under the Shenyang Urban Planning Project (SUPP), the urban component of LIEP. Based on a thorough analysis, SUPP consultants selected this neighborhood as a very good example of the housing of its era, with well-proportioned and nicely detailed buildings, brick-built with tiled roofs. For its representative character, the area was designated a conservation area, one of only eight listed housing areas in Shenyang.

In discussions with the Tiexi Restructuring Office it was agreed that the area was a good candidate for a specific form of renewal proposed by SUPP. This would involve a mixture of rehabilitation and new-build, with extensive environmental improvements. However, the high demand for additional floor-space in Shenyang plus excessive

current levels of demolition required the project to emphasize the rehabilitation of existing housing in combination with a more intensive use of underused land.

SUPP understood that demonstration projects were needed to prove the utility of thorough preservation and rehabilitation. The Workers Village was selected as a demonstration project. It was carefully selected so that it represented much of the housing built in Shenyang and many other major industrial cities in China over a period of 50–60 years.

Project Background

Tiexi District

Tiexi is one of the nine urban districts in the city of Shenyang. It is the main industrial area in the city, and it was formerly one of the principal concentrations of heavy industry in China's northeast.

The district is a classic example of a traditional industrial district dominated by large-scale, labor intensive, underutilized, inefficient state-owned heavy industries. For many years it was the industrial powerhouse of the region, specializing in heavy industry and supported by technical co-operation with the former USSR. It provided employment for most working people in the district.

Today however, a substantial portion of that old economic base is obsolete, and new investment is characterized by a shift to secondary manufacturing and tertiary services. The area has suffered declining economic efficiency and heavy job losses as a result. While such changes have often occurred elsewhere, the scale and pace of the decline in Tiexi is significant. Stated most succinctly, Tiexi has epitomized both the environmental problems that result from the uncontrolled emissions of outdated industries as well as the economic and social problems that result from the closure of many of these same industries.

The Tiexi Restructuring Office was established in 1986 to establish policy and guide the process of regeneration. Its efforts were largely focused on the marketing of derelict industrial sites to potential industrial investors. The advantages of zone-integrated urban regeneration, both for the local population and for the urban economy, were largely ignored, and the pace of development was slow.

In June 2002 the Shenyang municipal government made the decision to merge Tiexi with the Zhang Shi Economic and Technological Development Zone. The development zone had been laid out with high quality infrastructure and partly occupied by modern industrial enterprises, which had been attracted by a range of incentives, financial and otherwise. The new administrative authority, known as the Tiexi New District, is responsible for urban management, including city planning and the operation of a "land bank" supported by extensive land acquisition, disposal, and management powers. This new administrative authority has set some ambitious regeneration targets, and the responsible agencies are now committed to meeting these. Polluting industries have been shut down, and infrastructure upgrading programs are underway. New policies have been formulated and new plans drawn up.

Today Tiexi New District extends over an area of 94 square kilometers, accommodating a residential population of approximately 1 million inhabitants. It has an economic jurisdiction of the same rank as a municipality. In 2005 the district had a total of 876,572 permanent residents, and the forecasts for 2010 predict that the district's population will come to 1.2 million.

The New District is divided into two parts with different functions. One is the Economic & Technological Development Area, which is to be a modern industrial area. The other part is the Tiexi district, which is growing into an area of modern business, comfortable living, developing service trades, and desirable real estate.

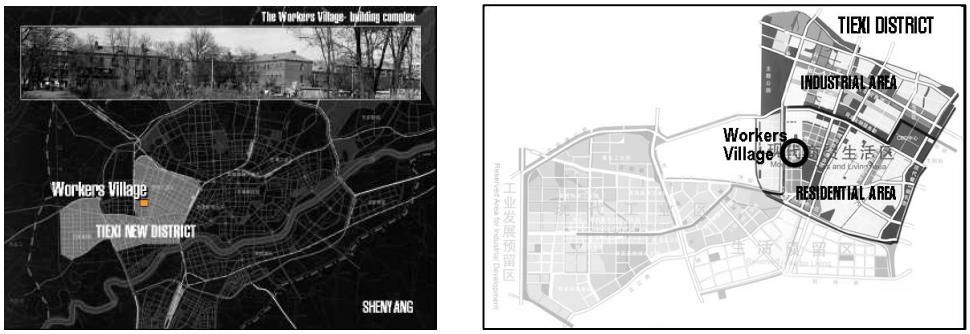


Figure 1.2

The original Tiexi district, with a total area of 40 square kilometers, is made up of two distinct areas separated by the east-west Jian She Road. The south part is mainly residential; the north, industrial. The district is still influenced by the lay out established by the Japanese during the period of occupation from the late-1920s to 1945. The occupiers' legacy is evident in the planning of the area around the northeast region's main rail hub, with the industrial area to the west and Heping commercial and residential area to the east. The barrier of the rail tracks continues to reinforce major differences in the visual and social environments, land values, and incomes between the two sides.

Today Tiexi district is continuing the process of transformation from an industrial area into a modern business and living neighborhood. Since 2002 enterprises in the northern part of the district, approximately 20 square kilometers, are being relocated to the modern industrial area Shenyang Economic and Technological Development Area.

A Project Within LIEP

Through the Liaoning Integrated Environmental Program (LIEP), EU and Chinese experts worked together on new planning strategies and implementation programs. They aimed to improve environmental quality and promote sustainable development in the fields of environmental awareness, integrated urban planning, water resource management, air quality management, energy management, cleaner production, industrial restructuring, and investment promotion.

In the city of Shenyang, as elsewhere in the country, complex environmental planning issues continue to arise during China's transition to a market-based economy. The Shenyang Urban Planning Project (SUPP) was set up to assist the city government in endeavoring toward sustainable development through the promotion of integrated planning and co-ordination of policies regarding urban design. This four-year program was based in the offices of the Shenyang Environmental Protection Bureau, which lent very substantial support to the project through counterpart staff and logistical assistance.

The project featured a strong environmental emphasis, with a commitment to improving the quality of life within Shenyang. SUPP employed an "integrated urban management approach" to maximize public benefits from emerging development trends and opportunities. At the same time, SUPP managed public assets and natural resources efficiently, according to the principles of sustainable development.

Through collaboration, EU consultants, Shenyang city leaders, and local professionals developed, adopted, and implemented key urban initiatives. Working groups brought together the various local actors concerned with different aspects of sustainable urban planning. Through this working group system, SUPP achieved an extraordinary level of institutional penetration.

Each of the six EU/China interdisciplinary working groups included qualified experts from various agencies within the municipal government. They addressed key planning issues in the following sectors: integrated land use and transportation planning; urban infrastructure and utility services; housing (new-build, renewal, rehabilitation, and

resettlement); environmental management and natural resources conservation; built environment, urban design, and heritage conservation; and city marketing, industrial area planning, and investment promotion.

SUPP and Heritage Conservation Strategy

During the period of the SUPP technical cooperation program, the twin objectives of good urban design and heritage conservation advanced considerably throughout the city. Among a wide range of ongoing initiatives, new uses were found to maintain the economic viability of important heritage buildings.

One important initiative to be developed involved the design of an integrated set of funding support packages to restore the Imperial Palace and the Zhaoling and Dongling Tombs to their former glory. To make this goal a reality, the European Union joined forces with the World Bank to support the rehabilitation of the Qing Dynasty built heritage monuments in Shenyang.

SUPP working groups additionally contributed to urban upgrade plans for areas surrounding all the key heritage assets in the city. A significant percentage of Shenyang's stock of old buildings, including representative samples of each period and style, were identified.

The importance of well-structured heritage conservation and development proposals for Shenyang was demonstrated by the following benefits:

Development authorities, residents, and visitors have an increased knowledge and understanding of the value and significance of the city's world-class heritage assets.

Larger numbers of visitors–both international and domestic–are attracted to the city, with consequent economic benefits in terms of increased commercial revenues in the hotel, catering, and retail tourism service sub-sectors.

Shenyang has an enhanced profile to garner international interest in the history of Shenyang and designation of the Imperial Palace and the two Qing tombs as a World Heritage site.

The enhanced international profile also supports internal investment in Shenyang.

The skills base of Shenyang agencies involved in public design and construction has broadened in relation to heritage area conservation and new building design in central urban areas.

Real estate values will increase through more efficient and effective management of land, public space, and traffic circulation.

The capacity to manage traffic flow (pedestrians and vehicles) has improved in relation to the increasing attraction of a successfully marketed heritage asset and a series of high quality public spaces.

Replicable strategies and techniques support public initiatives elsewhere in China.

In view of the above, the first step toward an effective heritage conservation strategy was to establish a consensus on the value of conserving the city's key heritage assets as an essential component of the drive toward socio-economic development and physical regeneration. Following such agreement, the following principal steps were taken:

1. Step One – Heritage buildings survey: Commissioning of a new city-wide survey to identify the status and condition of historic, old, and significant buildings.

2. Step Two – Urban design guidelines: Development of a locality-specific classification system for Shenyang that assesses the value and significance of individual built assets in contextual terms rather than in absolute terms.

3. Step Three – Heritage buildings reuse strategy: Preparation of a comprehensive set of guidelines for the redevelopment of conservation areas and the incorporation of old buildings into new development contexts.

The Conservation Area

The Workers Village is located in the south part of the residential district. It covers around 31 hectares and has an estimated residential population of 9,500. The project was originally laid out in the 1950s by a number of separate work units with design and supervision carried out by Russian technicians. The open spaces are presently in a state of dilapidation, with no organized maintenance and gardening being carried out. Individual residents take over parts of these open spaces for private uses.

The area has the following boundaries:

On the west side, the boundary is the second ring road, which is one of the most important arteries of Shenyang. This road is basically 'façade free' and allows no access or egress between controlled crossing points.

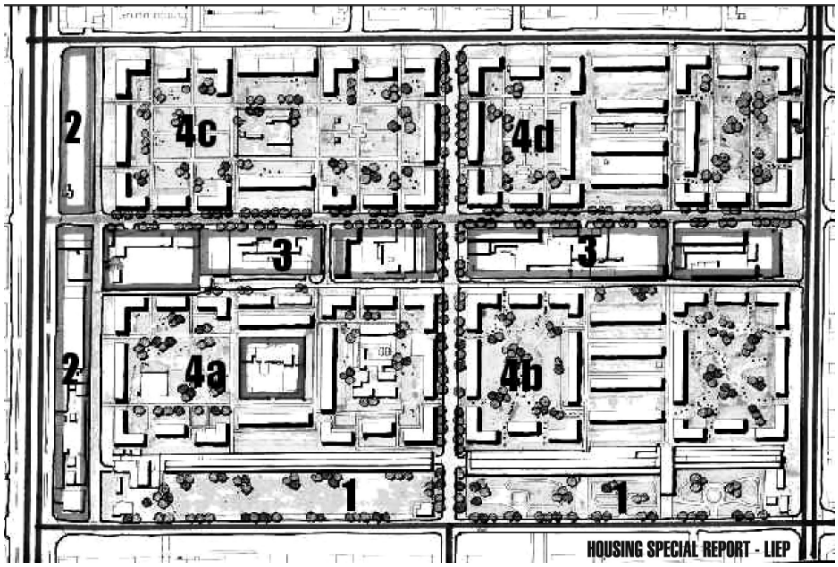
On the east is a main street running north–south connecting the residential areas south of Tiexi Road with the industrial areas to the north.

The northern boundary is a primary road, beneath which the future subway will run. Subway stations are planned to the east and west of the study area.

To the south is a smaller but very active street with food vendors, street market activities, day-workers offering their services, and considerable pedestrian traffic.

The Workers Village area has the following components, as illustrated in the plan below:

Figure 1.3



1. An open park and garden area to the south covers some 3.8 hectares, with one and two story bazaar-like buildings running east–west for the entire length of the site.

2. A zone along the second ring road is occupied by dilapidated single-story workshops and other commercial structures of low quality and value. This area is approximately 1.7 hectares.

3. This community services, utilities, and commercial corridor connects the east and west boundaries of the study area. This area contains various establishments, including a primary school, post office, banks, community center, residents committee office, neighborhood administration office, supermarket, restaurants, district heating center, power generating station, and a few housing blocks. The corridor divides

the overall residential area into two: a north section and a south section of equal size. A service road separates the corridor from the southern housing area, while the northern area is separated by a nicely tree-canopied neighborhood street. The corridor covers some 3.2 hectares.

4. The housing area of the Workers Village consists of four sections, each of around 4.8 hectares, giving a total of 19.2 hectares.

Area 4A consists of six different types of four- to five-story blocks, giving a total of 17 blocks with a construction area of 32,600 square meters. The area between the blocks is occupied by a two-story elementary school, a single story water supply office and pump station, and a number of single story sheds for bicycles and general storage. There are many large trees.

Area 4B consists of five different types of three- and six-story blocks. There is a total of 20 blocks with a construction area of 36,720 square meters. The open space between the blocks is basically bare soil with a limited number of trees. There is no significant landscaping apart from small patches of “private “ vegetable and flower gardens in front of some of the ground floor apartments.

Area 4C consists of five different types of three-story blocks, giving 16 blocks with a total construction area of 22,520 square meters. The large open space between the blocks is unoccupied apart from a few dilapidated bicycle sheds and garages. The open space was originally laid out as a formal garden with a central fountain, a stone sculpture pavilion, and other features. Area C has the lowest density of the four housing areas since no infill construction has taken place over the years. Consequently, it provides a good opportunity to demonstrate how infill development can be done at an appropriate scale and in harmony with the existing environment.

Area 4D has six different types of three- and six-story blocks with a total of 20 blocks and a construction area of 37,440 square meters. The central part of the space between the original blocks is now occupied by infill construction of four six-story blocks. The western part is left open with a formal garden and is evidently quite popular with the residents as a meeting area. The eastern part is left open with bare soil, scattered large trees, and a few private gardens.

The housing area of the Workers Village is therefore around 129,000 square meters. Taking an average of 50 square meters per housing unit, 1.1 households per housing unit, and 3 persons per household, this translates to approximately 2,600 units with around 8,500 residents. Adding the further 1,000 residents of the Community Services Corridor gives a total population of approximately 9,500.

Buildings

Figure 1.4

As for the buildings, the three- to five-story blocks are all of red brick with pitched, tiled roofs. They were built in the 1950s and are quite well proportioned and detailed. Some of the blocks have had one or two extra floors added to the original three, apparently without straining the structure. In fact, there are hardly any cracks to be seen in any of the external or internal load bearing walls of the 1950s blocks. In three of the four areas, there are also some five- to six-story infill blocks that were built much later. These blocks are visually less attractive than the three-story blocks, and their designs do not sit well with the original lower density architecture.

Despite the sound state of their basic structures, all buildings in the area are in serious disrepair with facades, roofs, balconies, and staircases extremely run down. Many residents have added makeshift balconies outside their apartments, which often appear dangerous. Inside, most apartments still have their original windows, plumbing, and sanitary fittings, and the decorative condition is poor.

The dwellings are nearly all conventional small apartments of around 50 square meters each, in contrast to other units from this period, which were often single-room bed-living units with communal kitchens and bathrooms.

Workers Village Master Plan: **An Urban Regeneration Strategy for Tiexi District**

The first phase of SUPP concluded at the end of March 2003, but the project was extended, primarily to focus on formulating specific investment projects designed to attract external funding. Tiexi district was the main focus for this activity, as SUPP had been actively engaged there since late 2001. Since April 2003, SUPP has been directly engaged with the Tiexi district government in the preparation of marketing packages for a number of key development opportunities. Avenue TWC, as an EU consultant group, was responsible for preparing these marketing packages.

Considering the main objective of building a prosperous and sustainable future for the citizens of Tiexi and Shenyang, Avenue TWC understood that the most pressing urban management issue facing the district was urban regeneration. Direct engagement in practical projects was vital to achieving the objectives of the project.

The first phase involved a deep understanding of the previous work accomplished by the different working groups of SUPP. Based on this analysis the next step was taken, to understand the urban, social, and environmental context of Tiexi district. An urban regeneration strategy for the whole district was developed, with three key urban initiatives identified.

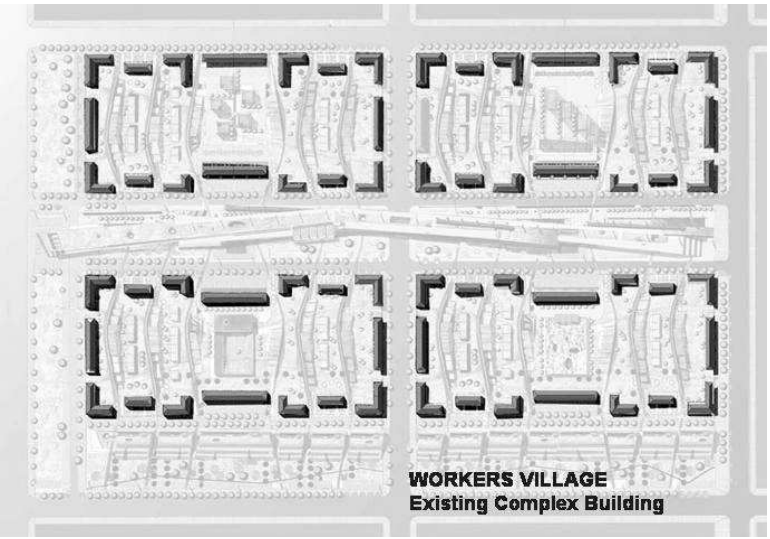
Figure 1.5

The Workers Village project was one of these initiatives. The other two projects identified were Tiexi Central Park and Tiexi Light Rail. One involved the regeneration of the area surrounding the main railway station of the city. With the objective of breaking the physical barrier between Tiexi and the city, the project started by moving the railway tracks underground and creating a new urban development structured around a great new public park. The other

initiative, the Tiexi Light Rail project, involved the recovery of 22.6 kilometers of obsolete rail tracks, with the goal of introducing an innovative and sustainable light transport system.

The Master Plan

Figure 1.6



Avenue TWC; Architectural design: Berdichevsky-Cherni-Dergarabedian-Parodi. Drawings: Francisco Crespo.

Avenue TWC developed a new master plan for the conservation area of the Workers Village based on the SUPP heritage conservation strategy – specifically, the heritage buildings reuse strategy, which involves the preparation of a comprehensive set of guidelines for redevelopment of conservation areas and the incorporation of old buildings into new development contexts.

The master plan incorporated the following aspects:

A clear opportunity to revitalize the urban heritage.

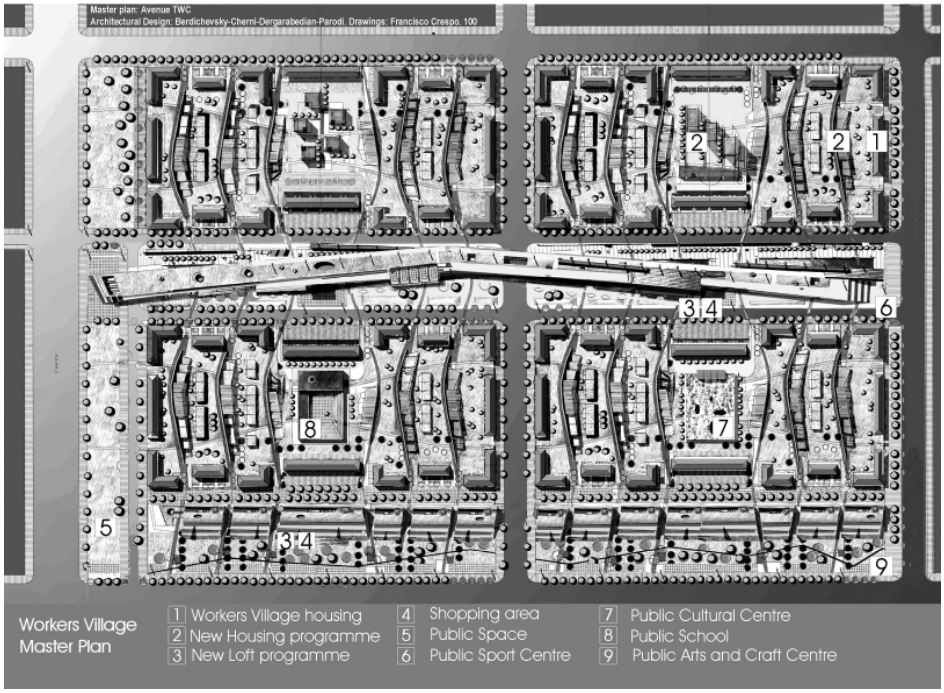
Transformation of the district without destroying its cultural symbols and identity.

New uses for an important heritage building complex to maintain its economic viability.

The development of fine new civic squares and public open spaces.

Financial viability without a direct investment from the local authorities.

Figure 1.7



Avenue TWC; Architectural design: Berdichevsky-Cherni-Dergarabedian-Parodi. Drawings: Francisco Crespo.

The built-up density of the entire conservation area was unrealistically low, with spaces between buildings the size of soccer fields. Given the pressures to increase densities described at the beginning of this paper, a decision was taken to increase the density of the area by incorporating new buildings within the building complex.

A proper balance was established between the existing and new structures. A strategy and action plan was developed to support the conservation and refurbishment of the existing housing stock and the grounds. Also, a new development program was established to introduce new uses that would promote a new vibrant and sustainable urban area. The new buildings involved high standards of environmental care and were sensitively designed to add value to the original buildings.

A social strategy was established to contribute substantially to local identity and sense of place. Common areas and gardens were renewed to serve community functions, recreation activities, and visual amenity. Also, new open spaces were created.

A financial viability study was carried out so that the project's viability could be demonstrated to public and private sectors and the community involved. It was presented in two international events organized by Avenue TWC to attract international investment in Tiexi and Shenyang.

Figure 1.8

Avenue TWC; Architectural design: Berdichevsky-Cherni-Dergarabedian-Parodi. Drawings: Francisco Crespo.

At the events, these basic principles were presented:

Urban transformation without destroying cultural symbols.

Conservation, rehabilitation, and transformation can create new uses and recover public spaces.

Economic viability through the incorporation of uses allows for the development of a vital and self-sufficient urban area.

Tiexi is recovering social integration.

Conclusion

Many historic buildings were lost during the Cultural Revolution (1966-1976 CE) through comprehensive urban renewal, crude maintenance, and disinterest. But, since then the move to a market economy has fuelled even more destructive trends. Cash-strapped work units and the increasingly rapacious private sector seek to maximize profits with redevelopment, to create higher-return economic uses. This has meant that the rapid erosion of the heritage asset-base continues apace.

These trends are disastrous for both the urban environment and the socio-cultural life of the city. Heritage matters, and not just in terms of adding interest to the urban landscape. Old buildings provide a direct link to events of the past: momentous events in China's history and local events of significance in Shenyang.

In considering these qualities of historical witness and continuity, it is vital that the role of relatively humble domestic architecture be recognized. The national policy emphasis on state-, provincial-, and county-level historic monuments has now been modified, and the majority of recent additions to the official list are residential and "ordinary" buildings rather than palaces and monuments exclusively. Thus, even though government policy at both

central and local government levels is increasingly sympathetic towards the conservation of built heritage, this resolve has yet to be translated into effective implementation.

Regarding the Workers Village conservation area, there is a strong pressure from local residents and private developers to have the whole area redeveloped under claims that it is the only way to deal with dilapidated housing. The workers village project was set up to demonstrate the social, cultural, and economical viability of incorporating heritage buildings into urban regeneration. The EU-LIEP team, and particularly Avenue TWC, hope this objective of sustainable development for the city can be more widely understood and that the conservation *and* revitalization of the Workers Village area succeeds.

Miguel Hernandez Lopez *is Co-Chairman of Avenue TWC and is one of Europe's leading city development experts, with particular experience in urban regeneration and sustainability. Within the LIEP Program, he directed the team of experts responsible for developing an Urban Regeneration Strategy for Tiexi District in Shenyang. He has a degree in Architecture and Town Planning from the Universidad Politecnica of Madrid.* ***Paul Wakefield*** *is Co-Chairman of Avenue TWC, and an internationally recognized expert in real estate and urban development. His experience is based around developing global visions for the transformation and use of key strategic locations and areas in the development of the urban environment. His international experience includes China, Japan, and Europe.* ***Carolina Trujillo*** *is director for Avenue TWC-China, and an architect specialized in city and regional planning and urban design. Since 1995 she has worked for the private and public sector, participating in different urban development projects in different countries, including Latin America, China and Europe. She has a degree in Architecture from the University of Los Andes in Colombia and a Masters of Urban and Regional Planning from the CEU University in Madrid.* ***Monica Zgaib*** *is a city regeneration and marketing expert, with significant international experience in developing and implementing promotional and investment strategies. She has worked on projects in South America, Europe and China. In China she developed the promotional strategy and campaign to promote the regeneration of Tiexi district of Shenyang City.* ***Rafael Moneo*** *is a Spanish engineer based in Berlin, Germany. He currently is an independent property and marketing expert. He has worked as Project Manager for the architecture studio of the Spanish architect Rafael Moneo and as head of the property team in the Berlin headquarters of PricewaterhouseCoopers.*

---

[1] This paper draws heavily on reports from a range of EU consultants working under the Liaoning Integrated Environmental Program.

[2] Avenue TWC is a consultancy group with expertise in the fields of city branding, city management, and urban regeneration. Avenue TWC brings together people with experience in the transformation and branding of cities from all angles, giving it a broad knowledge base that can be used to support city authorities, private companies, and the public sector in critical research, strategy, and projects implementation. Avenue TWC covers a new territory that provides those involved in city developments with a fresh approach to the different issues, facing it with expert consultants and constant updates on how global trends affect "the world of cities". http://www.avenuetwc.com