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In Urban Upgrading
Cultural Heritage Conservation
Case Study: Ningsho, China

Culture in Sustainable Development
Case Study: Ningbo China
Cultural Heritage Conservation in Urban Upgrading

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with photographs by
Curt Carnemark

Zhejiang Multicities Development Project
Ningbo Basic Urban Services Upgrading Component
A project of the East Asia Urban Sector Management Unit of the World Bank in cooperation with the Ningbo Municipal Government, Zhejiang Provincial Government, and the People’s Republic of China
This study has been prepared by consultants with support by the World Bank. The judgments expressed do not necessarily reflect the views of the Board of Executive Directors or of the governments they represent.
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We would also like to acknowledge the leadership and the comments provided by World Bank Task Team Leaders Wiebe Moes, Herbert Boehm and Geoffrey Read. The excellent photography which illustrates the case study is the work of Curt Carnemark.

A particular thanks is due to the people of Ningbo who coped with the upgrading construction and who encouraged the municipal government to conserve the city's cultural heritage and ensure that it will enrich the lives of future generations.
“Without the support of the World Bank it would never have been possible for us to change our priorities, to build for development, and to preserve our past at the same time.”
—Vice Mayor Song Xiao Liu, City of Ningbo

“The Ningbo project was fortunate to have teams from both the government and the Bank which were constant throughout the life of the project. However, the local government team is the most important. It doesn’t matter what the Bank puts together, it is the focus and commitment of the client that dictates project success.”
—World Bank Task Team Member
The historic city of Ningbo in the coastal province of Zhejiang is an example of a city working to resolve the inherent conflicts between upgrading older urban areas and conserving cultural heritage. The World Bank’s Zhejiang Multicities Development Project included support for widening major traffic arteries and upgrading basic services in the heart of old Ningbo. Through this component, the city’s political leaders, preservationists, and planners cooperatively implemented important development activities which improved peoples’ lives and also conserved valuable cultural heritage. Today as the project nears completion, Ningbo can look with pride at the city’s accomplishments. Ningbo’s experiences can provide valuable insights for similar work in other rapidly growing cities.

Drawing on experiences in the Ningbo urban upgrading component, this study provides information and context for similar projects in other cities. The case study is developed around a series of historic conservation issues, such as adaptive reuse and conservation zones, and centered on conservation topics most pertinent in the Ningbo project, providing specific examples and recommendations for priorities and action in the field.

The information for this paper comes from Chinese working-level studies and internal World Bank staff appraisal reports and back-to-office reports between 1992 and 1998. Additional insights were gathered from those directly involved in the project during site visits and interviews in November 1998, as the project was being completed. Ningbo political leaders and agency officials, World Bank staff, profes-

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sional and amateur preservationists, and historic site managers and tenants contributed a wealth of experience and knowledge to this study.

Ultimately, this case study is not written as a manual, but rather as a story of how a project unfolded in Ningbo. We hope it provides insights and information for those who work on historic conservation in other cities experiencing rapid economic growth.

Ismail Serageldin
Vice President, Special Programs
The World Bank
Overview

The historic city of Ningbo in the coastal province of Zhejiang is an example of a city working to resolve the inherent conflicts between upgrading older urban areas and conserving cultural heritage. The Zhejiang Multocities Development Project included funding the widening of major traffic arteries and upgrading of basic services in the heart of old Ningbo. Through this component, the city's political leaders, preservationists, and planners cooperated to implement important development activities which improved peoples' lives and also conserved valuable cultural heritage. Today, as the project nears completion, Ningbo can look with pride at the city's accomplishments. Ningbo's experiences can provide valuable insights for similar work in other rapidly growing cities. (See map on page 49.)

Balancing Development and Cultural Conservation

Possessing one of the world's oldest civilizations, China is a treasure house of archaeological sites, historic architecture, expressive arts, traditional landscapes, and cultural diversity. China's traditional architecture and urban forms are a particularly elegant expression of its peoples' history and sensitivities. Today many of these cultural assets are seriously threatened due to rapid economic and physical changes.
take place in China. As is true worldwide, cultural property in the midst of historic cities is especially at risk due to the pressure of urban growth and development.

Upgrading and new development in urban areas are the positive outcomes of economic growth. They raise standards of living and set the stage for continued development by improving transportation, communications, housing, and services. While development can reduce poverty and increase peoples' well-being, the accompanying rise in land values and pressure for high density urbanization can lead to the destruction of historic property and disruption of the traditional urban fabric.

This loss of urban neighborhoods and historic sites was once thought to be the price of progress. However, planners now recognize that preserving the past is an essential part of creating livable, sustainable cities. More specifically, urban specialists agree that the conservation of a city's historic and cultural environment enhances the city and the quality of life for residents by:

- Preserving evidence of past achievements and cultural traditions,
- Maintaining positive patterns of communal behavior and responsibility;
- Protecting enjoyable areas of architectural and natural beauty,
• Creating energy for development by generating positive identity and civic pride,
• Creating income generating opportunities through culture based enterprise and tourism, and
• Increasing the city’s desirability for outside investment by enhancing its distinctive and unique character.

Historic Setting

Ningbo began evolving sometime before 770 BC and took its current name, meaning “calm waves”, in 1381 during the Ming Dynasty. The heart of the old city contains many culturally significant residential, religious, and institutional buildings as well as historic landscapes. Of special note is Tianyige, the oldest library building in China (1516). Its collection of rare books and documents goes back to the 11th century and includes many unique local chronicles of the Ming Dynasty. Ningbo’s cultural properties, from the Tang, Song, Ming, and Qing Dynasties, give the city important cultural and historic value. This value was recognized by the Government of China
when Ningbo was one of the first cities to be declared a Cultural Heritage Protected City, of national level importance.

Ningbo's chief asset has always been its geographic location at the confluence of the Yao, Fenghua and Yong rivers which flow into the nearby East China Sea. As an ideal port, Ningbo has prospered and enjoyed exposure to outside influences since the 5th century when Korean and Japanese traders began landing there. It was one of the first Chinese ports to trade with European explorers when the Portuguese arrived in 1545. In the 17th and 18th centuries Ningbo's seafaring traders were well known on the entire China coast. Ningbo was officially opened to foreign trade as a treaty port in 1843. However, its activity declined and its place was taken by Shanghai, just across Hangzhou Bay. Still ideally located for trade (only 700 nautical miles from Japan and Hong Kong) Ningbo was designated as one of China's fourteen "open" cities in the new open-door policy inviting direct foreign investment in 1984.

**Current Context**

Today Ningbo is the center of a massive transportation network which includes railways, roads, waterways, an airport, and deep water port facilities in Hangzhou Bay. It is also an important industrial center producing one-fifth of the Zhejiang Province's total output. Growing steadily, Ningbo is the second largest city in the province, with a greater metropolitan area population of over five million people. While the city successfully generates economic opportunities for its residents, the Ningbo Municipal Government has long recognized the need for infrastructure and environmental improvement in Ningbo's old city center.

By 1986, the old city's pipelines for water supply and drainage had become seriously silted and blocked over time. Existing housing was in bad condition, reflecting low construction standards and lack of maintenance. Most households had
no heating, sewerage, or adequate water services; and living conditions were crowded and significantly below national norms. The major commercial streets (Jiefang Road, Renmin Road, Baizhang Street and Yaohang Street) had become deteriorated and too narrow to carry traffic adequately.

City officials recognized that these conditions had to be addressed if Ningbo's economic development was to be translated into an improved quality of life for its residents. Consequently, the city's 1986 Master Plan called for upgraded housing, transport, roads and basic services. Planning and implementation of these activities took place under the Zhejiang Multicities Development Project.

**Project Summary**

The Zhejiang Multicities Development Project (IDA #24750) was designed to improve water supply, land development, environmental management, institutional coordination, and traffic management in three of Zhejiang's metropolitan areas. The total project cost of this initiative was appraised at US$231 million, with IDA financing for US$110 million.

*Deteriorating housing on Lake Yue.*
The Ningbo Basic Urban Services Upgrading component was completed for a total cost of US$97.3 million (Y804.6 million), of which US$37.2 million was World Bank financing. The Ningbo improvements include:

**Civil Works** (US$35.3 million / Y292.0 million)
- Widening and reconstruction of eight principal roads in central Ningbo;
- Construction of urban services within the road reserve including street lighting, power, underground cable and telecommunications ducts, landscaping, and water mains;
- Construction of separate storm water drains, interceptor and connecting sewers, and primary treatment works.

**Cultural Heritage Conservation** (US$2.3 million / Y19.0 million)
- Preservation and rehabilitation of important cultural heritage properties and the urban fabric along the alignment of the four roads; and
- Moving, reconstructing, and conserving, where appropriate, historic properties which are unavoidably in the path of the roads.

**Demolition and Resettlement** (US$59.7 million / Y493.6 million)
- Demolition of structures not considered suitable or economic for conservation or rehabilitation within the road reserve; and
- Construction of dwellings and resettlement of affected communities in improved and fully serviced housing. ($13.3 million/Y113.0 million additional spending for new, fully serviced housing for population resettled from the center of the historic district).

*Congested lanes in central Ningbo.*
CREATING A SUPPORTIVE ENVIRONMENT FOR CULTURAL HERITAGE CONSERVATION

As plans for the road widening project were being developed, project staff soon realized that the construction was likely to destroy significant cultural property along the road alignments. The engineering design firm was not considering the impact of road widening on historic properties and traditional neighborhoods, largely because its terms of reference specified only transportation and traffic management goals.

Initially, city officials had limited interest in preserving historic property along the roadway, raising objections such as:

- None of the threatened property was old enough (more than 400 years old) to warrant conservation; and
- Even if properties were historically significant, examples of these types of structures existed in other cities.

In order to broaden the discussion, a highly respected Chinese professor from Beijing was asked to assist the project's conservation consultants in assessing the importance of the city's historic property. With the help of Professor Zhu Zixuan of Tsinghua University, the team assessed the historic buildings and convinced the city's leaders of the importance of preserving properties along the roadways.²

Adjusting Project Goals

A component aimed at protecting historic properties adjacent to the roadways was added to the project. At Ningbo's request, the World Bank supplied historic conservation expertise and support to the city agencies with responsibilities for the development and maintenance of the built environment. Advisors worked primarily with the Planning Bureau and the Institute of Preservation and Administration of Cultural Relics on conservation issues.

It quickly became clear that the city needed to create a more supportive environment for preserving its cultural heritage. Some of the first steps included:

- Continuing to provide political support and leadership,
- Enforcing laws and regulations governing development,
- Improving the coordination of agencies with responsibilities in affected areas, and
- Increasing public awareness of the value of cultural heritage.

Political Support

Early in the process, interest in the conservation of cultural heritage was evident in the office of Mayor Chen Tong-Hai, as he fully supported the protection of cultural properties. Once adjustments to the original engineering plans, such as realignment of roads, relocation of valuable property and reconstruction of historic bridges were developed, the city government moved quickly, approving the modifications within a few days.

As the work nears completion, the current leadership still enthusiastically supports the project. In an interview with World Bank staff, Vice Mayor Song Xiao Liu announced with pride that,
Ningbo has one of the richest cultural heritages in the country and we have a responsibility to preserve this heritage for generations to come. By doing this we enrich the quality of life for our people, now and in the future.

**Legislation and Enforcement**

Legislation for the protection of cultural heritage in China exists at the national, provincial, and municipal levels. Since Ningbo has been declared a protected city by the national government, it must comply with national laws (box 1). However experience shows that enforcement of the laws and norms has not been adequate to meet the new challenges of the rapid expansion of construction and growing liberalization of the market economy. To effectively protect cultural heritage, develop-

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**Box 1. Legislation**

National legislation pertaining to cultural heritage was included in the 1982 Constitution of the People's Republic of China. While this law is comprehensive, covering all major aspects of protection, management, research, and circulation of cultural heritage, enforcement has been difficult. Article 22 of the constitution makes the general statement that:

*The state promotes the development of literature and art, the press, broadcasting and television undertakings, publishing and distribution services, libraries, museums, cultural centers and other cultural undertakings, that serve the people and socialism and sponsor mass cultural activities.*

*The state protects places of scenic and historical interest, valuable cultural monuments and treasures and other important items of China's historical and cultural heritage.*

Since 1982 the State has added important legislation covering: the preservation of cultural relics (1985); the listing of protected sites; control of the export of cultural relics (1987); the appraisal of cultural relics (1989); the management of archaeology in collaboration with foreign countries (1990); revisions to the laws on cultural relics (1991); and other measures. The national, provincial, and municipal governments are increasingly aware of the need for legislation and control to protect their heritage.
Conservation area, east shore of Lake Yue.

Municipal regulations must establish the limits within which development can take place by defining, at the least:

- Zoning for land use that is sensitive to preserving historic contexts,
- Pedestrian and vehicular access that preserves neighborhood connections, and
- Safeguard policies to protect historic properties, especially in regard to demolition.

During the course of the urban upgrading project, Ningbo’s agencies substantially increased their inclination to enforce compliance with its cultural heritage protection regulations. An example of this evolution is the change in the enforcement of conservation area regulations in the historic area surrounding Lake Yue (Moon Lake). At the beginning of the project the Ningbo City Planning Bureau intended to allow real-estate companies to redevelop the east bank of the lake as they pleased. Even though it was a designated conservation area, decisions on demolition of historic property and new development were to be left up to the real-estate companies.

Now, however, Mr. Xia Zi Guang, Chief Planner for the Ningbo Planning Bureau, explains that the city recognizes the value of preserving Lake Yue because:

- It is an area of open space and scenic beauty in the midst of a dense urban area.
- It provides the opportunity for many leisure activities.
- It is one of the city's most extensive remaining historic environments.
Perhaps just as importantly, the city realizes that developers make higher profits in areas with natural amenities and historic significance. Consequently, the Planning Bureau now enforces requirements for building set-backs and limits on density and height for new development. In addition, it requires developers to contribute toward improvements for the lake area, such as rebuilding the embankments, cleaning up the water, and enhancing the landscaping. Mr. Xia Zi Guang says the Planning Bureau's new attitude toward the developers is aptly described in the old Chinese saying, “Let the cow eat grass, but make it work hard.”

**Administrative Cooperation**

To create effective policies for conservation in an urban environment, there must be active consultation between all agencies which have jurisdiction over or responsibility for the built environment. The municipal planning authority has a particular responsibility to integrate the issues surrounding engineering, planning, and historic property concerns. Protecting cultural property, which is difficult for any city in the world, cannot be done without coordinated policies and action at the local level.

City officials acknowledge that there is a conflict between cultural heritage protection and urban development, and that not all municipal agencies are equally committed to historic conservation. The city addresses these issues through the Municipal Cultural Heritage Protection Committee formed to coordinate the decisions that affect cultural heritage. This committee is made up of the heads of government departments which impact the city’s built environment, including the Planning Department, Infrastructure Development Office, Engineering and Public Utility Bureau and the Institute of Preservation and Administration of Cultural Relics. The committee meets once a year to approve annual plans, set priorities and discuss problems. Throughout the rest of the year, it meets on each project which will impact historic property. Often specialists and citizens’ groups are invited to provide information and participate in these meetings.

**Public Awareness Campaigns**

Public awareness campaigns are important to raise the public’s appreciation of cultural heritage, make it an asset for the educational system, and fully incorporate it
into tourism and community development. For effective campaigns, it is advisable to:

- Thoroughly research and gather historical and cultural information on the customs, events, buildings and neighborhoods of the city;
- Interpret historical and cultural information in the current context of the area;
- Identify the various audiences (students, visitors etc.) for this information;
- Develop appropriate forms of presentation using photos, brochures, audio visual materials, radio, scale models, actors and other media techniques; and
- Coordinate government departments and other groups related to education, culture, tourism and planning in order to agree on priorities and create consolidated plans.

Mr. Xu Meng Guang, Vice Director of the Ningbo Institute of Preservation and Administration of Cultural Relics (Preservation Institute), reports that his agency uses television, radio, and the press to increase awareness of cultural heritage. The Institute sponsors a special column in the newspaper named after an historic area called “The Four Ming”. Specialists and the public-at-large are invited to describe specific places or projects and give their opinions on current conservation issues. Twice a year, on National Museum Day and on December 9th (the anniversary of Ningbo’s being declared a protected historic city), they sponsor Cultural Heritage Days. The Institute sets up tables in a busy area of town, hands out its publications, and makes specialists available to give advice on the evaluation and protection of cultural objects and property.

To coordinate Institute outreach with the city’s tourism plans, most Preservation Institute staff join the local Tourism Association. In addition, the Institute provides information on historic sites to the Tourism Department. Within the city itself, awareness of historic sites is most often spread by word-of-mouth. Interpretation is present at most historic sites, but it could be improved by increasing the amount of information and updating the modes of presentation.
Establishing the Significance of Cultural Assets

In order to effectively conserve cultural heritage it is, first and foremost, necessary to know what heritage exists and understand its historic, scientific and educational value and significance. The International Council on Monuments and Sites (ICOMOS) describes the benefits of thoroughly recording cultural heritage. Information is important in order to:

- Increase the understanding of cultural heritage and promote the interest and involvement of people in its preservation;
- Ensure that conservation, management, maintenance, and control of any changes to heritage are sensitive to its physical form, materials, construction, and significance;
- Assist administrators, planners, and all government agencies with jurisdiction or responsibilities affecting historic properties in making sensitive planning and development policies and decisions; and
- Provide a permanent record of all property that may be destroyed, altered, or at risk from environmental effects.

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3 Principles for the Recording of Monuments, Groups of Buildings and Sites" by ICOMOS, UK National Committee, London, 1996. These principles have been adopted as guidelines by the ICOMOS country members, including China.
Ningbo's Experience

Record keeping on historic properties in Ningbo was done only informally before 1965. However, one of the Institute's associate researchers, Mr. Lin Shi Min, had documented some historic sites and neighborhoods out of personal interest. By 1992, two years after the Preservation Institute was formed, the city had identified 45 historic sites and over 20 conservation areas of national, provincial, and municipal level importance. Much more work was needed, however, because there was no description of these properties' significance, the extent of land involved, the condition of the buildings and surrounding areas, or their potential for reuse.

As part of project preparation, a working team was formed of preservation consultants and architectural specialists from Beijing's Tsinghua University. To increase the amount of available information on property affected by the road widening, this group went from building to building in the project area and accomplished the following tasks:

- Noted the historic value of the buildings and their surrounding context;
- Assigned a grade of importance to buildings;
- Recommended appropriate action (restore, relocate, demolish);
- Calculated floor areas and cost of recommended actions;
- Documented significant cultural property locations on maps; and
- Provided specific advice on how modern infrastructure should interface with historic areas.

Recommendations for action varied according to the buildings' grade of importance. Where possible, the team suggested the realignment of roads to prevent unnecessary destruction of buildings or the excessive in-

Kuching Pavilion was moved to the lakefront.
trusion of traffic into the historic context. Where important historic buildings lay in the path of the new roads, plans for relocation were developed. As a means of softening the impact of the large-scale infrastructure development on the smaller scale of the historic environment, landscaping and pedestrian routes were designed as buffer zones between the busy roads and historic properties.

Over the course of the project, the Preservation Institute has continued to make great progress in recording information on historic sites, creating elevation drawings, and delineating boundaries for conservation areas. To designate a cultural property, the city goes by the standards set out in the national laws which identify three types of cultural property – historic, scientific and artistic. Historic designation is the most important of these. Any buildings constructed after 1840 are not considered historic and must be evaluated on their own merits. For instance, the home of a famous person may be designated, even if it is relatively new. Ningbo uses the following procedure to designate and record a site:

- A specialist visits and evaluates the site.
- A protection area around the site is defined.
- Signs designating the area are posted.
- Records are created and archived.

The goal of the Preservation Institute is to accumulate enough information to create a master conservation plan for the city with details on significance, value, condition, and reuse options for all sites and neighborhoods to be conserved. An especially important part of the master plan will be the record of cultural heritage protection agreements made with all other government departments.
Defining Sustainable Activities for Restored Buildings

The primary principle of successful conservation is that historic buildings must be actively used. It is nearly impossible to maintain an historic area or building unless the owners or users take an active interest in and responsibility for the property. In order to calculate the feasibility of conserving and upgrading properties for a meaningful new use, several factors must be understood:

- Historical and cultural significance of the buildings or areas,
- Condition of the properties and the cost of repair,
- Community priorities and market demand for new and appropriate uses,
- Feasibility of upgrading the properties to accommodate new uses,
- Cost of upgrading and the value of the properties once upgraded,
- Cost of operation and maintenance and the likely income stream to support it, and
- Related urban infrastructure improvements needed to make historic properties viable.

Adaptive Reuse in Ningbo

In the thriving metropolitan area of Ningbo, city officials, developers, and residents are all grappling with the difficult problem of finding appropriate and successful new uses for historic buildings. One of the most important issues in Ningbo, and in conservation work world-wide, is to find new uses which provide adequate income streams for operation and maintenance. New uses can be defined with confidence only when the feasibility factors listed above are fully explored.
The Preservation Institute's policy on planning for restoration and reuse is first to protect historic sites and second to look for suitable uses. Whenever possible, they encourage government agencies or entrepreneurs to restore and use these properties. For the sites they restore themselves, the Institute calculates affordability based only on the proceeds from one year's ticket entry sales. (Museums are the most frequent new use projected by the Preservation Institute for restored buildings.)

In spite of a less-than-complete analysis for the adaptive reuse of buildings in Ningbo, there are several examples of successful restoration and reuse: the Fan Cultural Center Shops, Jun Temple Complex, and He Zhi Zhang Hall.

**Fan Cultural Center Shops**

The bustling, noisy city of Ningbo seems far removed from the interior courtyards of the Fan Cultural Center Shops on a sunny afternoon, when the elderly have been invited to watch snippets of live opera and calligraphers gather to demonstrate their art. Situated in a complex of Ming Dynasty (15th century) housing, the Fan Center is a handsome collection of shops selling antiques, books, and art.

In 1992 this complex was a series of dilapidated buildings and congested courtyards which housed 72 families in overcrowded and unsanitary conditions. In spite of deterioration, the buildings were identified as a valuable restoration target because of their potential to preserve an example of a traditional environment and domestic architecture. Resettlement of the residents to more spacious housing with modern conveniences and restoration work was completed at a cost of Y10 million.
DEFINING SUSTAINABLE ACTIVITIES FOR RESTORED BUILDINGS

(US$1,234,457). In October 1997 the Fan Cultural Center Shops opened for business.

Mr. Liu Xing Rong, manager of the Fan Center, says that the project received so much publicity during restoration that 75 percent of his units were rented by the time he opened. There has been some turnover, but the complex is usually 100 percent occupied. He thinks that the Fan Center is popular because it is the only commercial complex in the city providing a traditional setting for the sale of antiques and art. Rents on the units vary from US$6 to US$20 per square meter, depending on location. These rents are somewhat high for the area, but they seemed warranted at first because of the level of demand. Mr. Liu is now considering lowering the rents because some of the shops are struggling to cover their costs.

In the first year, the complex earned Y1 million (US$123,456). Fifty percent of this money went toward repaying the investor (the Real Estate Administration Department), 20 percent was used for maintenance and 30 percent was spent on staff salaries. The expectation is that the entire investment made by the Real Estate Administration will be repaid in 15 years.

Asked about his major problems, Mr. Liu immediately mentions the threat of fire. He spends a great deal of time making sure that electrical loads are at a safe level. A booklet of regulations has been developed providing guidelines for maintenance, security, and electrical use. Just as importantly, the booklet sets out specifications aimed at protecting the historic nature of the building. For example, rent-
ers must agree to use signage compatible with the traditional style of the building and no nails can be driven into the façade.

Mr. Liu’s expert management is creating a prestigious commercial center whose historic nature is well protected. He is also providing a place where the residents of Ningbo can enjoy cultural presentations and leisure time. He feels that special events, such as the opera presentations, are important because they give the complex visibility, create a refined atmosphere, and provide the public with enjoyment.

Jun Temple Complex

The history of the Jun Temple reflects the recent history of China in many ways. Before 1960 it was the City God Temple. From 1960 to 1980 it was a machine factory, and in 1981 it was converted to shops. Between 1992 and 1996 the historic character of the building was restored and the complex enlarged with the addition of a new department store.

The busy lunch time cacophony at the Jun Temple Complex is somewhere between an open air market and a shopping mall food court. Frying, steaming, and simmering food is everywhere. The sophisticated “noon crowd” can linger in the temple’s courtyard to buy lunch in one of several dozen food stalls or pick up a few fresh items for supper. Alternatively, they can drift across a seamless border into the newly built department store next door. Here they can shop for such items as sweaters, umbrellas, or shoes. Outside the temple, hundreds of bicycles are parked in front of the new building, which has been designed specifically to blend with the historic building’s exterior. (See Design Guidelines and Authenticity)

He Zhi Zhang Hall

The He Zhi Zhang Hall stands on Liuting Island in the middle of Lake Yue, commanding one of the most charming views of the lake and its shores. Built in 1144, it
commemorates one of Ningbo’s most famous poets. In 1995 the building was an under-maintained residence for employees of the Sanitation and Environment Office. During the city’s upgrading project, the employees and their families were resettled to another property owned by the Sanitation Office and He Zhi Zhang Hall was restored. Now it is home to the Ningbo Culture and Arts Association, which is a government-sponsored umbrella organization for cultural groups.

Mr. Li Jian Zhu, a children’s book author and past head of the Association, explains that the group’s goals are to support the arts and communicate their importance to younger generations. The Association does this in several ways. First, offices in the newly restored hall are assigned to eleven groups representing writers, calligraphers, painters, dancers, opera singers, photographers, film producers, comedians, folk artists, potters, and musicians. Second, the Association holds seminars, workshops, and special training sessions for its members. It also creates and advertises exhibits of members’ art. While the government pays the salaries of the group’s administrators, it has a very small budget for its activities. In order to augment its income, the association produces and sells a glossy magazine and videos. In the summer it sets up a series of lessons in the arts for school children.

Before the road project, the Culture and Arts Association had its headquarters in the much smaller Kuching Pavilion, built in 1831. Directly in the path of He Zhi Zhang Hall and Jiu Shi Lin Temple on Liuting Island.
Mr. Li and Mr. Zhu,
Cultural Association leaders.

the new road, the building was restored and moved to a placid setting on the lake where it is now used as a tea house.

When asked how he feels about the development and changes that have come to Ningbo, Mr. Li says, “Everyone in Ningbo is happy about the economic development. This is definitely going to have an impact on people’s relationship with their traditions, but we are working hard to see that tradition and the arts flourish.”

The Fan Cultural Center Shops, Jun Temple Complex and He Zhi Zhang Hall are good examples of well administered, adaptive reuse, showing the following:

• There is wide support and appreciation for the conservation of historic buildings.
• Historic buildings can be conserved and at the same time successfully upgraded for new uses.
• Careful choice of new uses, planning for operation and maintenance and prudent financial management can lead to sustainable projects which are supported by the new users.
• Capital invested can be repaid over a reasonable period of time.
• Management regulations for an historic building can assure respectful use by occupants.
Conserving the Urban Fabric

Much of the unique character of historic Chinese cities comes from the details of their urban fabric — the pattern of land use and road networks, the variety of architectural styles, and local activities. The features of these urban landscapes provide residents with a sense of place and identity. Because they are the sum of many interconnected parts, these cultural assets are particularly difficult to maintain when development puts pressure on age-old ways of doing things.

Conservation zones are one of the tools planners use to protect the scale and character of traditional neighborhoods and combat the loss of historic urban fabric. Effective conservation area planning includes the following:

- Clear delineation of conservation area boundaries, with map documentation;
- Legal definition of rules and regulations for development activity, including:
  - no demolition, except with permission from city authorities
  - appropriate building reuse
  - guidelines for historically compatible construction materials and design details
  - building height limits
  - installation of public utilities and street finishes that are compatible with the historic context
  - guidelines for building alterations and maintenance
  - new activities compatible with current historical context
- Plans for pedestrian links between conservation zones; and
Lake Yue provides many recreational opportunities.

- Widespread distribution of rules and regulations to all relevant government agencies, developers, and the public.

**Lake Yue Conservation Area**

During the course of the project, the conservation zone surrounding Lake Yue (Moon Lake) became a crucible for development planning issues and a symbol of changing attitudes in Ningbo.

Lake Yue, dating from the 7th century, is an urban oasis of green space which stretches half way across the north/south axis of the old city. The lakefront is developed with a jumble of historic and modern buildings, except for the north half of its west bank. Here the lake is accessible to citizens who can stroll along a broad walkway covered by a canopy of trees, play mahjong, and nap in small open-air pavilions, or use the embankment steps to go into the lake for a swim. This quarter of the lakefront is actively used and highly valued by residents for its relaxation and recreational opportunities.

Although the area surrounding Lake Yue was identified as an historic conservation zone when the project began, there were no clear policies, legal regulations, or action plans to guide development. The city's plans for the lake in 1994 were to
sweep away all existing buildings and landscaping on the east bank. The lakefront was to be rebuilt with a strip park and high rise apartment blocks. This proposal was based on the assumption that it made no sense to save historic properties, even though there had been no thorough examination of the historic buildings’ significance or potential for adaptive reuse. Decisions on building density and height for the new development were to be left up to the real-estate companies. Since these companies would naturally seek densities which maximized profits, it seemed clear that the development would not be compatible with the quiet setting and small historic scale of Lake Yue.

However, over the course of the project Ningbo residents’ rising standard of living has created more demand for pleasant places to spend leisure time. In addition, the conservation work done by the city in the last five years has raised the public’s understanding and appreciation of the city’s cultural heritage. Consequently, citizens are demanding more conservation efforts. The Planning Bureau has also recognized the importance of preserving Lake Yue’s historic setting by controlling its low rise environment. Now plans for preserving the lake’s exceptional character focus especially on the following:

- The city’s need for park and recreation space,
- The unique scale and historic quality of the environment, and
- The aesthetic value of the open space and expansive views in contrast to the high density of the surrounding city.

The Planning Bureau is now enforcing conservation area standards such as preserving all viable historic property and controlling the height and density of new construction. Developers are also expected to help preserve area amenities. Enhanced landscaping, improved water quality, and rebuilt embankments are top priorities.
To strengthen the conservation area requirements, the city has surveyed and recorded the historic buildings on the eastern shore of the lake. It is now proposing to keep the most outstanding historic properties and integrate them with new, small-scale buildings. The first stage of Lake Yue’s development will focus on the 28 hectares running along the east bank. Eventually, the entire 96 hectares in the conservation zone surrounding the lake will be developed in a manner that preserves the unique character and scale of this precious urban amenity.

**Lost Opportunities**

While Ningbo has been successful in controlling new development in several areas of the city, there have been some lost opportunities, as in the Gong Yuan neighborhood.
On the north side of Zhong Shan Road, the city has handsomely restored the ancient Clock Tower and Gate (800AD). The building’s setting has also been much improved, with new landscaping and paving. In the early 1990s, the gate ushered pedestrians onto Gong Yuan Road, a lane lined with two-story timber structures housing shops and families. Here local residents and tourists could wander the lane sampling snacks from the food stalls and exploring the shops. If they roamed far enough, they reached the quiet of Gong Yuan Park at the end of the road.4

Today the small shops are gone and the street is engulfed in the frenetic activity of new construction. Although the new buildings have been designed with sensitivity to scale and form that are compat-

4 As part of redevelopment, the park has been upgraded and renamed Zhong Shan Park.
ible with the historic nature of the Clock Tower, they are larger and more impersonal than the previous buildings. The architectural details of the new construction imitate traditional motifs, but they cannot replicate the interest created by decades of individuals' use and adaptation. The new buildings and their streets challenge the city to create the same intimate feel and variety of activity which the old lane provided.

The quality of Gong Yuan Road's environment is especially important because it is the northern half of a chain of historic buildings and pedestrian access which runs almost the entire length of the city's north/south axis. The southern half of this chain (on the other side of Zhong Shan Road) is made up of several small lanes of Ming Dynasty housing which lead to Lake Yue and its traditional landscape. This configuration of historic shops, housing, lanes, and parks is a valuable opportunity to provide residents and tourists with an extended experience of traditional Chinese urban fabric.

The city's conservation zones by themselves provide only isolated pockets of preservation. New development and multi-lane traffic arteries have great potential to break up neighborhoods and cut off important pedestrian access. To maintain a sense of the original urban fabric in Ningbo, it is important to:

- Avoid creating isolated islands of historic value by linking conservation areas with historic corridors; and
- Carefully control and limit the larger, incompatible scale of new development that has been established in the surrounding urban areas.
New construction in historic areas, the modernization of historic buildings and authentic restoration projects all present preservationists with similar challenges. These situations involve significant aesthetic, functional, and financial considerations.

**NEW DEVELOPMENT IN HISTORIC AREAS**

New construction can be successfully integrated into historic areas if the new forms are sensitively developed to be compatible with the old. Design guidelines are an extremely useful means of steering new development and achieving compatibility in historic areas. Design guidelines must be applied and evaluated on their own merits in each specific case because they are, by their nature, abstract and open to interpretation. New development need not copy historic motifs or forms of construction to achieve compatibility. Construction details that are true to modern technology and design are appropriate, but the new construction must carefully consider the following abstract characteristics:

- Appropriate scale and height,
- Compatible materials,
- Harmonious color and modulation of form, and
- Quality of detail and design.

*The Jun Temple Complex:* The Jun Temple is now a good example of Ningbo’s efforts to keep new development compatible with adjacent historic sites. However, in 1992, the large new structures on either side of the Temple overwhelmed and
conflicted with its historic scale and details. To correct this situation, the Ningbo authorities demolished the buildings on the east and west sides of the Temple and invited proposals for new development.

New building proposals were submitted by developers and evaluated by project architects according to the design principles above. The new plans were deemed inappropriate because they called for imitation of traditional buildings in concrete and were pseudo-historic rather than contemporary. The Planning Bureau told developers to rework the proposals. The second effort created plans for modern buildings which were sympathetic to the historic temple but with their own integrity.

Modernization of Historic Buildings

One of the main challenges for the conservation of historic buildings is improving their environmental quality and services such as electricity, gas, and telephone lines. Unless modern standards are achieved, it is difficult for historic buildings to compete with new construction. However it is a skilled task to upgrade services without damaging historic architecture or creating visual discontinuities. Examples of inappropriate service installations in historic buildings are evident world-wide. The styles, materials, and situations in these buildings are so varied that appropriate solutions must be formed for each situation. General guidelines for installing services include the following:

- Fixtures, ducts and materials compatible with historic designs and materials;
- Minimal destruction of historic structures, materials, and the historic context; and
- Access for service maintenance and renewal that avoids future disruption of historic materials or structures.
- Visual impact of all additions and changes as subtle as possible.

*Ming Dynasty Housing*: The issue of contemporary services is particularly relevant for Ningbo’s Ming Dynasty housing. The courtyard house, cherished by the Chinese over many centuries for its privacy and intimate scale, is rapidly disappearing under the pressure of high density development and residents’ desire for more modern conveniences.

In recent years traditional courtyards have been pressed into service for much more than moon viewing. Water pipes, electrical wiring, and telephone lines criss-cross the air above communal kitchens and lavatories.

To address the problem of modernizing traditional housing in a systematic way, the national and provincial governments are working on a set of guidelines for upgrading services without destroying the aesthetic value of these homes. In the meantime, Ningbo has established regulations governing the safe and adequate provision of electricity and sewerage in these buildings.
Authentic Restoration

Authentic restoration of existing buildings is the key to their historic significance and educational value. While painstaking analysis is often necessary to establish authentic architectural details and functions, it is especially important to develop, interpret and present this research for building users and visitors. For the effective operation and maintenance of historic buildings, it is essential that government officials, the public and occupants have a clear understanding and appreciation of a building’s true history and significance. Guidelines for the authentic restoration of historic property should respect the following broad principles:

- Authentic restoration based on written, photographic and other archived documentation;
- Use of original construction techniques and materials, to the greatest extent possible; and
- Reversible processes, materials, and conservation methods used in improving or renewing construction in order to allow for further restoration of the site when future technology or research findings become available.

He Zhi Zhang Hall: The He Zhi Zhang Hall, on Liuting Island, provides an example of why the third principle for restoration is especially important. Preservationists originally thought that the Hall was built during the Ming Dynasty. It does indeed have many Ming design characteristics. During restoration however, the removal of finishes revealed clues to earlier origins. Mr. Xu Meng Guang of the Preservation Institute explained that throughout Chinese history, successive dynasties often extensively remodeled their predecessors’ buildings in order to establish their own authority and style. The multiple layers of adaptation and style can make it extremely difficult to identify the origins of buildings accurately. To preserve historic value and significance, careful research and reversible restoration measures are particularly important. This will permit changes in the future as new information becomes available.
Resettlement

All households displaced by Ningbo’s road upgrading project were moved to significantly improved housing within a 20 minute bike ride of the central city area. A total of 432 substandard housing units in the old city were demolished. All inhabitants of this housing (2,212 households) were resettled in new apartment blocks at a cost of US$54 million / Y450 million. Residents were given the choice of relocating to four different residential areas outside the city center: Yonghong, Minglou, Qianjiabian and Nanyuan. The new accommodations were constructed to a higher standard, including an increase in available living space and improvements in lighting, ventilation, water supply, sanitation, utilities, and access to local parks.

Chinese policy on resettlement is set out in national, provincial, and municipal laws and these conditions were met in the Ningbo resettlement work. In addition, the Ningbo Urban Infrastructure Development Office (NUIDO) conducted a household survey to determine citizen satisfaction with the project results. A random sample of 200 households was surveyed to gather their reactions to the new housing. The results of the survey are described below.
Residential Upgrading

Much of the housing in the upgraded area was dilapidated, overcrowded and lacking in all basic services, including water, heat and sanitation. Eighty-seven percent of the resettled households surveyed felt that their residential conditions had been “greatly” or “to some extent” improved. Some families (10.5 percent) felt that their living conditions were the same as before and three percent felt they were “somewhat worse than before”.

As stipulated in Ningbo’s provisions for resettlement, usable floor space per household is determined according to the number of family members. Mr. Pan Lo Yung, Resettlement Section Chief for NUIDO, reports that of the 200 households surveyed, 157 had increased their floor space by an average of 10 square meters. A few families which had been living in large houses or those decreasing in number due to changes in family circumstances, lost floor space.

Access to kitchen and bathroom facilities was vastly improved through the resettlement work. In the old housing, only 7.5 percent of the units had kitchen or bathroom facilities. Most residents used ad hoc cooking arrangements and the nightsoil system for sanitation. In the new resettlement housing, 100 percent of the units have kitchens and bathrooms.

Residential Environment

Parks have been developed in three of the four resettlement areas. The fourth area, Qianjiabian, has a landscaped environment that has been accepted by the residents as a whole. Schools have been established to serve all the residential areas. Health care, available in the...
form of hospitals or health stations, is within one kilometer or one-half hour walk of each resettlement area. Public transit has been adjusted or extended to serve all the new housing. The survey shows that the mean time required to walk to a bus stop is 5 minutes. Residents of Hongmei at first had a 13-minute walk to the bus stop, but a minibus now links the housing with the main bus stop. Environmental sanitation in the residential areas has generally been satisfactory, but there have been some problems. For instance, a river channel in Mingliou is dirty and is gradually being cleaned up.

**Mr. Li Zong Yao, Resettler**

Mr. Li Zong Yao is a retired high school teacher who has been living in resettlement housing with his wife for the past four years. He reports that almost his entire neighborhood resettled to the same residential area and that he does not really miss anything from his old neighborhood. He pointed out that the location, although further from the city center, has not created any hardships because their housing is proximate to all the amenities they need daily. He is only a 5- to 7-minute walk from grocery shopping and a department store. If he wants to go the center of town he usually rides his bike. In cold weather, he prefers either riding the bus, which takes about 10 minutes in non-rush hour traffic, or taking a taxi which costs Y8.

Since Mr. Li is on the Neighborhood Commission which handles problems and complaints about the housing, he is well aware of people's attitudes toward the residential areas. He says that most residents are very satisfied and that the ones who are not had inflated ideas of the quality of housing they were entitled to. Mr. Li reports that the Neighborhood Commission has negotiated several improvements to the housing areas on behalf of residents. A small pavilion was built in the complex for the older men who asked for a place to meet and play chess, and more landscaping was added to the outside areas.
Recognizing Project Impact

The Ningbo project shows that conservation of cultural heritage and valuable elements in the existing environment can be effectively integrated with urban development to create a city that is both livable and dynamic. The project has accomplished significant urban upgrading and historic conservation. As importantly, project outcomes include the city’s increased capacity to accomplish and sustain conservation work by integrating it into strategic planning and development policies. In Ningbo today there is a greater appreciation for the importance of preserving cultural heritage among city officials, the public, and private developers. These changes in attitude and capacity will sustain conservation work in Ningbo long after the World Bank project is finished.

New landscaping at the Brick Pagoda, Tang Dynasty - 854 AD.
**Physical Outcomes**

*Roads:* The Urban Upgrading project accomplished all its explicit goals. More than six kilometers of the eight major commercial roads in the old city are widened and traffic congestion is eased. With the reduction of excessive traffic congestion, the number of accidents and daily losses in productivity are reduced.

*Infrastructure Upgrading:* As part of the road work, the city's infrastructure is significantly upgraded. Water and power lines, underground telecommunications lines and cable ducts and street lighting are installed along six kilometers of roadway reserve.

*Housing Improvements:* Numerous households (2,212) are resettled into modern apartments from housing that was dilapidated and overcrowded.

*Improved Appearance:* Planners, preservationists, and the general public express great satisfaction with the new, more modern appearance of Ningbo. A substantial amount of landscaping added throughout the project area enhances the city's appearance.

*Cultural Heritage Conservation:* Historic property was conserved by changing road alignments, relocating some buildings, and restoring and adapting important historic property along the roadways.

**Change in Attitudes**

*Government:* As a result of the project, the city created a new coordinating body to oversee government activities that impact cultural properties. In addition, project-related advice encouraged the Planning Bureau to strengthen, clarify and enforce its regulations for development in conservation areas. Design guidelines and zoning restrictions were also re-examined and adapted to improve their effectiveness. The
project activities changed the city's expectations for private developers, as well. The government now requires developers to provide amenities and improvements to the immediate environment in return for permission to build.

Perhaps one of the most important changes in the government's attitude toward conservation is its increased willingness to listen to public opinion on these issues. For example, during the redevelopment of Zhong Shan Park, there was a dispute over the restoration of the ancient home of military hero, Zhang Chang Shui. Some residents wanted the house moved to another location for restoration. They felt that the historic structure conflicted with new development in the adjacent square. Others felt that, for historic reasons, it was important that the building be restored in place. At first the government planned to move the house, but once all the issues were heard, they decided it was most appropriate to restore the house in place.

In this case, increased awareness and involvement of citizens led to a public discussion that informed everyone on the issues and built a consensus. Mr. Xia Zi Guang of the Planning Bureau says that the involvement of the people and the resulting debate have helped improve his Bureau’s process and thinking on cultural heritage.

The Public: Both the Planning Bureau and the Preservation Institute report that Ningbo’s citizens greatly appreciate the cultural conservation work. As evidence of this, more people now use Liuting Island and Lake Yue for recreational activities, and both visitors and local residents are frequently seen taking pictures and enjoying the improved environment.

Also, the press gives the conservation work a great deal of coverage. In addition to the Preservation Institute’s column (The Four Ming), a local newspaper initiated
a weekly page called Moon Lake, which is devoted to heritage and conservation issues. This newspaper coverage is a direct result of the interest in historic properties raised by the project. From the articles and letters submitted, it is clear that the public is enthusiastically in favor of the work. In fact the public is now demanding more attention to cultural heritage issues. Citizen appreciation and positive comment on the conservation work give the government the impetus to continue and expand their policy on conservation.

Community participation in conservation planning and debate is beneficial in raising awareness and arriving at appropriate outcomes, as shown by the case of the Zhang Chang Shui house. At the local level there will always be conflict between conservation and development interests. Therefore, public involvement should be encouraged to raise awareness and mobilize people's energy for developing effective solutions to these conflicts.

Developers: Developers, to some extent, have changed their behavior in response to the city's heightened appreciation of conservation. They have learned from experience that their proposals are more likely to be approved if they conform with historic preservation regulations. Some development seems to come from a genuine interest in historic preservation. In the commercial area of Gong Yuan, a developer recently bought a property which included an historic examination hall (once used for the civil service examinations required of administrative candidates). He repaired the old building and built a twin building in its mirror image, to recreate the site as it would have been traditionally. The developer plans to use the new building, which fronts on the street, as a commercial property and to create a museum on the history of the examination process in the old building.

Enhanced Conservation Capacity

The Preservation Institute has gained an enormous amount of experience through work on the project. They have improved their skills and practices for recording the value and significance of historic buildings; designating and strengthening regulations for conservation areas; developing plans for adaptive reuse and estimating related costs; and conducting public outreach campaigns.

At the Preservation Institute, Mr. Xu Meng Guang reports that before 1989 the Institute's personnel were rarely trained preservationists. Recently, more university students are graduating with conservation degrees and many young graduates have
gained valuable experience working on the Ningbo project. He is confident that these professionals can now work elsewhere, independently. However, he adds that his Institute would benefit from more specialized training in tasks such as recording and documenting historic property.

Mr. Xia Zi Guang says that the Planning Bureau has gained useful experience in working with developers and harnessing private development to the city’s advantage, as in the case of Lake Yue. They have also gained a better understanding of the degree of public interest in heritage conservation and the value of public debate as shown in the case of the Zhang Chang Shui house. Finally, the Planning Bureau has gained expertise in developing and enforcing regulations, guidelines, and zoning which protect cultural heritage and the city fabric as a whole.
In addition to Ningbo's impressive and important array of cultural assets, many actors played positive roles in creating the right atmosphere for project success.

- The general public of Ningbo has a growing appreciation of its cultural heritage enhanced by the visibility of the project work.
- The city's political leadership, especially the Mayor's office, strongly endorsed the importance of conserving cultural property in the trade-offs between development and heritage.
- The Planning Bureau was flexible and capable of fast decisionmaking. Once a plan for adjusting the road alignments was submitted by the cultural heritage team, they accepted and approved it within a few days.
- The Preservation Institute was prepared to take full advantage of the experiential learning made possible by the project and became a more sophisticated organization in the process.
- The interest and support at the municipal level gave the World Bank the impetus to pursue the cultural heritage work more extensively and make more expertise available to the city.
- The positive feedback which the city government received from its citizens encouraged the officials to more fully institutionalize this work.
LESSONS LEARNED

Multi-Sectoral Planning
Cultural heritage is especially vulnerable to urban development when planning is not multi-sectoral. The engineers drawing up Ningbo’s road plans used only the principles of road construction and traffic flows to widen major arteries in the ancient city center. Consequently, the first set of engineering plans unnecessarily eliminated valuable properties. While the preservation work corrected these problems to some extent, a multi-sectoral approach would have improved project planning.

Local Expertise
Questions of what constitutes significant heritage and how to conserve it are bound up in cultural perspectives and are often emotionally charged. In the case of Ningbo, it was difficult at first to convince government officials of the importance of conserving the city’s heritage. The situation was resolved when Chinese experts from Tsinghua University supported the realignment of roads and the policies proposed by the conservation team to save historic buildings as well as the traditional urban fabric. When dealing with borrowers, outside experts can be most effective by working with local allies.

Local Level Coordination
At the local level, effective regulations, consistent enforcement, and government agency coordination are all necessary to support and reinforce one another in achieving heritage conservation. Coordination of municipal agencies is particularly important for protecting cultural heritage. In Ningbo, and cities world-wide, there are multiple agencies working semi-autonomously on activities which impact historic proper-
ties. In order to disseminate policy on preservation and manage the activities of various agencies, Ningbo officials created a coordinating body. The heads of government agencies meet regularly to approve annual preservation plans and discuss specific projects which impact cultural heritage. Such coordinating bodies and their commitment to comply with conservation goals can be extremely effective.

Public Participation
The Ningbo government has learned, first hand, the benefits of involving the public in the discussion of conservation issues. In situations where the interests of conservation and development conflict, public debate in Ningbo has been beneficial in arriving at appropriate outcomes. Therefore, community participation in conservation planning should be encouraged to raise awareness and develop effective solutions to future conflicts.

Public opinion on the importance of cultural conservation is not static. The preservation work done by Ningbo over the course of the project has raised the public’s understanding and appreciation of the city’s heritage. Consequently, citizens are now demanding more preservation work from the city and private groups are un-

*Jiu Shi Lin Temple: The city’s conservation work stimulated private upgrading and restoration.*
undertaking their own conservation projects. Public interest and involvement also expand the city's ability to protect cultural property from such threats as unauthorized demolition and poor maintenance.

**Conservation Standards**
Several international organizations have promulgated conventions and standards for historic restoration. However, there are still different interpretations of what constitutes appropriate and authentic restoration among many countries. There are also differences between preservation practices in China and these international standards. In order to implement high quality projects, standards for restoration in China should be consciously addressed and agreed upon for each project involving heritage conservation.

**Urban Fabric**
Even in difficult situations such as the rapidly developing city of Ningbo, it is possible to preserve some traditional urban fabric. However, careful planning is necessary. Historic buildings should be conserved within their surrounding context; conservation areas should be linked with access corridors; and development, such as multi-lane roads, should be planned so that it does not divide or destroy valuable traditional neighborhoods, but accommodate their historic place in the urban context.

**Adaptive Reuse**
The experience with adaptive reuse in Ningbo has shown that historic buildings can be conserved and at the same time successfully upgraded for new uses. Careful choice of activities, planning for operation and maintenance, and prudent financial management can lead to sustainable projects which are supported by the new users. The ability of adaptive reuse projects to generate sufficient income streams for future maintenance is vitally important. The methods for improving traditional build-
ing environments with services such as electricity and sanitation must be carefully planned to avoid an impact on the buildings' historic value and significance. Finally, it is essential that the public and occupants fully understand the character and significance of historic buildings in order to assure appropriate operation and maintenance.

**Economic Justification**

Competition for space in the rapidly urbanizing city of Ningbo makes it increasingly necessary to defend conservation work in terms of the economic benefits to the city. When making the case for historic conservation, it is necessary to include calculations of both the direct and indirect benefits to the community. Examples of these benefits include the greater demand for local goods and services and the increased tourism revenues in hotels, restaurants, and other related businesses. Training on how to estimate and document these benefits is greatly needed. It is also important for cities to develop clear business plans to define the affordable limits of expenditure on conservation activities.

*The benefits of conservation work must be documented in order to compete effectively with other development goals.*
Conclusion

Experiences in Ningbo show that it is possible to pursue economic growth while conserving the best qualities of the existing environment and preserving cultural heritage. Inevitably urban upgrading is bringing change to Ningbo's city center, and in the face of these transformations it is not possible to preserve all of the city's cultural heritage. However, city officials are strengthening conservation efforts by more thoroughly identifying and recording their cultural assets; improving legislation, enforcement, and administrative coordination for the protection of cultural property; defining sustainable activities for historic buildings and establishing conservation zones; and acknowledging the value which citizens place on the local heritage.

Ningbo is creating energy for further development by generating a positive identity and civic pride. It is also increasing the city's desirability for outside investment by enhancing its unique character. Furthermore, the city is improving the quality of life for its citizens by protecting enjoyable areas of architectural and natural beauty, preserving evidence of past achievements and cultural traditions, and maintaining the foundation of an evolving and dynamic culture.