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Article

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Journal of Urban Management

Provided in Cooperation with:

Chinese Association of Urban Management (CAUM), Taipei

Suggested Citation: Edelman, David J.; Triantafyllou, Menelaos (2012) : Foreign university involvement in sustainable new town planning in provincial China, Journal of Urban Management, ISSN 2226-5856, Elsevier, Amsterdam, Vol. 1, Iss. 1, pp. 39-61, [https://doi.org/10.1016/S2226-5856\(18\)30053-0](https://doi.org/10.1016/S2226-5856(18)30053-0)

This Version is available at:

<https://hdl.handle.net/10419/194389>

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Foreign University Involvement in Sustainable New Town Planning in Provincial China

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ABSTRACT. Recent concern with sustainable urban development has focused on the widespread development of new towns and the expansion of cities throughout China. In recent decades, an increasing number of planning and design professionals in the United States and Europe have undertaken consulting work in China. This study examines the first instance of a Chinese city funding an American academic planning unit to create a conceptual plan for a new town. The School of Planning from the University of Cincinnati was commissioned to prepare the conceptual plan for the Anyang Eastern New Town. Prior to the drafting of the plan, faculty and students visited the site on a reconnaissance and data gathering mission, undertook research and studio work, organized presentations, and navigated the labyrinthine bureaucracy at the local, provincial, and national levels. These experiences differ considerably from those encountered in places such as Shanghai and the southern coastal plain region. This article identifies a number of issues that play a key role in the success of projects involving American or European Universities in conjunction with the Chinese government, particularly provincial authorities. This paper provides a valuable reference for any organization involved in such undertakings.

KEYWORDS. *Chinese urban planning, sustainable urban design, provincial planning*

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1. OVERVIEW: CONTEXT OF THE PAPER

Over the last ten to fifteen years, planning and design professionals in the United States and Europe have increasingly taken on consulting work in China. For example, Major A&E firms from the UK and US have opened offices in Beijing and Shanghai. Recent concern with sustainable urban development and the policies of the Chinese government aimed at alleviating the pressures of urbanization has resulted in commissions for the planning of new towns and city expansions throughout China. Parallel to this, schools of planning from several American and European universities have been increasingly involved in research on Chinese urbanization through collaboration with Chinese scholars, and consultations at the national, provincial and city levels. Most work of this type has been conducted in major cities such as Beijing and Shanghai as well as large coastal industrial cities such as Guangzhou; however, provincial cities are increasingly gaining resources and interest in involving international universities in the planning and design process.

American universities have become very active in China, and many academic planning units are involved. Excluding the School of Planning from the University of Cincinnati, thirty accredited programs are currently active. These activities include research by faculty and students, work in studios, presentations by faculty, study tours. However, there appear to be no other instances of a Chinese city funding an American academic planning unit to create a conceptual plan for a new district or town.

The result of these efforts has been an expansion of the literature on the subject of Chinese urbanization, urban planning, and urban design. A number of important references are listed at the end of this paper. During the 2007-2009 academic years, the School of Planning at the University of Cincinnati prepared a conceptual plan for the expansion of the City of Anyang in Henan Province through a collaborative agreement between the city and the school. The field experience of the faculty leading this project, the planning process, and the engagement of students have revealed a number of important issues that need to be addressed. Key among them is the use of knowledge and critical analysis gained from planning education to address expanding urbanization pressures in China. This task is made even more difficult by the fact that regulatory systems for urban planning at the local level are ineffective or non-existent, that the central government dictates economic development and imposes environmental policy, and that market-driven development and redevelopment do not adhere to defined institutional and regulatory development controls and funding mechanisms to which planners in the US and Europe are accustomed.

The following sections of this paper discuss the Anyang Eastern New Town Conceptual Plan, identify key issues and finally discuss the lessons learned.

2. SUMMARY OF THE PLANNING PROCESS AND CONCEPTUAL PLAN OF ANYANG EASTERN NEW TOWN

Preparation of the conceptual plan for the Anyang Eastern New Town by the School of Planning at the University of Cincinnati formally began in April 2007. The period from mid-January to April was spent fine tuning the scope of the work to produce an agreement, and determining how best to complete the tasks that would enable the School to adhere to the deadlines for the completion of the plan within the quarterly-based academic structure. The preparation of the final plan was completed in May 2008, but unforeseen additional client requirements delayed acceptance until July 2009. The goal was to complete the plan as a professional consultancy while at the same time offering students a unique pedagogical experience and exposure to contemporary Chinese urbanism.

The planning was by no means an academic exercise in an urban planning studio. The project was well funded by the City of Anyang, which is currently integrating the plan and its recommendations into its comprehensive city-wide and county level master plans and developmental framework, as required by province-level and central government mandates. Regulations, requirements and procedures for urban planning are continuously evolving, and consequently, the professors leading the project were challenged to develop a completely clear understanding of the relationship between the agreed upon scope of the work, the requirements for process of planning, and the adoption and implementation of the plan. To accomplish this, it was necessary to rely on the judgment of professional and administrative staff in the City of Anyang.

A conceptual plan for the Anyang Eastern New Town is required under new (late 1980s) urban planning central government mandates, and will be implemented through a system of administrative controls in infrastructure projects, the location of land use, types and densities of housing, sustainable development initiatives, and other funding and capital improvement priorities. A major element of the plan is the development of a new rail station for the planned Beijing-Guangzhou high speed railway corridor that will pass through the New Town area in Anyang. The exact location and size of the station was determined by the National Railway Agency and presented to the School of Planning. Consequently, the final conceptual plan would also have to be approved by the same agency to ensure that the train station is properly located and considered within the conceptual plan. As it turns out, Anyang officials informed the school at two separate times (once after the alternatives were prepared and once after the final plan was prepared) that the plans for the train station and its location had been revised at the national level. As became clear later on, while planners at the University of Cincinnati were making specific recommendations for the station and its rail line, the officials at the National Rail Agency were

becoming better informed and, consequently changed their original specifications.

2.1 The City of Anyang and the Surrounding Region

The City of Anyang is located in Henan Province along the central plain region of China. Anyang is approximately 550 km southwest of Beijing. Provinces in China serve an important cultural role, and each province is strongly identified with stereotypes of its native inhabitants. Most of the provinces of China have boundaries that were established in the late Ming Dynasty. Major changes since that time have included the reorganization of provinces and the establishment of autonomous regions in the northeast after the communist takeover of mainland China in 1949. The most recent administrative changes have included the elevation of Hainan and Chongqing to provincial status and the organization of Hong Kong and Macau as Special Administrative Regions. The name Henan means "south of the (Yellow) River" (Huang He). With nearly 100 million people, Henan is the most populous province of China.

Anyang and the surrounding region have a rich cultural history, making the city a major tourist attraction. Northern Henan, along the Yellow River, was the core of ancient China for at least the first half of Chinese history. The two cities of Luoyang and Kaifeng each served as the capital city for a long list of dynasties. Archaeological sites reveal that prehistoric cultures such as the Yangshao and Longshan cultures were active in what is now northern Henan. The Erlitou culture, which has been identified with the Xia Dynasty (amidst some controversy), the first Chinese dynasty in Chinese records, was also centered in Henan. The first literate dynasty of China, the Shang Dynasty (16th-11th century BC), was centered in Henan. Their last capital, Yin, was located at the modern city of Anyang, Henan

With an area of approximately 167,000 km² Henan province is ranked 17th among all Chinese provinces. However, its population of nearly 100,000,000 people makes it the most populated province in China, with a density of 582 people/km² (ranking 6th overall). The province has 17 prefecture-level divisions, 159 county-level divisions, and 2455 Township divisions. The city of Anyang is a prefecture-level city, occupying an area of 7,355 km² with a population of 5.22 million people (2002).

In 2006 the City prepared the 2006-2020 master plan that broadly established directions for the growth of the city. The plan indicated four major districts for expansion of the existing city toward the north, south, east, and west. Each of these districts was targeted for a specific mix of land use. The eastern district was designated predominantly as a new residential area with some administrative functions and as the area in which the new train station for the high speed passenger train from Beijing would be built. This district, approximately 28 km² in size, was the area for which the School of Planning was to prepare the Anyang Eastern New District

Conceptual Plan, later renamed the Anyang Eastern New Town Conceptual Plan, because the plan that the University of Cincinnati prepared was received as a model for urban development to be used in other districts.

2.2 The Planning Process

The planning process for the project included four components:

Visit to Anyang: This stage involved meetings with officials to gain input regarding the specific requirements for the plan, for reconnaissance and to conduct field surveys. All of this took place over the period of one week in mid-April 2008, and involved two professors from the School of Planning, a visiting Chinese scholar from Tongji University, and two Chinese planning/architecture students from the private consulting firm that had initiated the project. While in Anyang, the team was assisted by two local technical experts and a driver who enabled convenient reconnaissance of the area of the conceptual plan for the New Town. During the visit, the team was provided minimal direction and very little information. The Anyang officials promised that they would send all of the information that was requested as soon as they had the opportunity to collect it; this promise was made one month after they learned of the request for data and, in fact, made no effort to fulfill it.

Research on Chinese urbanism and the key associated issues of environmental problems and sustainable urban development: The objective here was to gain knowledge regarding urban development laws, the planning process, and the local administrative structure at provincial, county, and city levels. Students reviewed information on population, economic development, land use, transportation, and other relevant information regarding Henan Province and the City of Anyang. They gained an understanding of Chinese models of contemporary new town developments, issues with the size of urban blocks, and development morphology. Two Chinese students at the School of Planning translated the Chinese documents into English, while other students prepared base maps. These activities took place during the spring quarter of 2007, and four graduate students were engaged under the direction of a professor of planning.

Preparation of three alternative conceptual plans to explore distinct approaches to urban development: The objective here was to give the Anyang officials exposure to a variety of ideas for the development of the New Town. The first alternative explored the possibility of innovative sustainable urbanism as a major departure from current Chinese models of urban development. The second alternative explored urban development according to current and emerging Chinese standards for the planning of modern cities, characterized by wide streets, very large city blocks of uniform high rise housing, and land use separation. The third alternative explored urban development that would preserve the majority of existing urban villages in the area of the New

Town and incorporate them into a new urban structure. This activity was conducted by two graduate students performing their required Master's level internship during the summer quarter of 2007, supervised by the project's two planning professors. The document that was produced was sent to Anyang officials for review. During the third week of September, a delegation of officials from Anyang visited the school, and most of one day was spent in presentations and discussions. The official made extensive comments, from which the school was able to prepare a more specific program to guide the preparation of the final plan.

Preparation and presentation of the final plan to officials in Anyang: The final plan was prepared in an urban planning and design studio during the autumn quarter of the 2007-08 academic year. The studio included 24 students, a mix of graduate students in planning and architecture and advanced undergraduate planners. The final plan was presented to Chinese officials in mid-November during a four day visit to Anyang. The group from Cincinnati included one graduate student, two planning professors, and a visiting scholar from Tongji University. Following the presentation, a meeting with the director of the Anyang Urban Planning Bureau, the director of the Urban Planning Institute, and heads of various departments revealed a number of details in the plan that needed to be addressed. The team from the School of Planning left with the understanding that the printed final document would be delivered to the officials from Anyang in late December, in accordance with the terms of the contract. However, as explained later in this paper, the final document was completed in early June 2008, but not accepted until July 2009 at which time the final payment was made.

2.3 Field Investigation

Field investigation and reconnaissance was conducted over a four day period during a visit to Anyang in early April 2007. In addition to the two professors, the team included the visiting Chinese scholar, two staff members from the Anyang Urban Planning Institute, and a driver. Field reconnaissance included visits to various areas of Eastern New Town, familiarizing visitors with the vicinity, the existing city, and new residential developments. Prior to the field reconnaissance, the officials were asked to identify the local issues and areas that required attention. The officials had prepared nothing in anticipation of the visit and consequently, it was left up to the team from Cincinnati to determine what was important and/or discover any special issues and problems in the field. For example, although the team was provided a print of a base map of the general area, it contained no specific boundaries as to the extent of the area to be considered, nor the land use or development that officials felt required attention. Furthermore, the question as to which land uses should be integrated into the new plan was not answered beyond telling the team to do what it thought should be done and then to inform the officials about it.

The base map was very general but before reconnaissance began, the Cincinnati team was able to interpret most of the symbols and determine key locations associated with designated land use. In one instance, field observation confirmed that a major electrical substation and several power lines were not shown on the base map. Knowledge of the area was gained by driving along all major and minor roads, and making frequent stops. Information was recorded via video, digital photos, and notes on paper and audio tape. When major buildings were encountered, the guides were asked for their specific land use and if they should be integrated into the new plan. They explained which buildings should remain, and these included military installations, hospitals, schools, and ‘anything that looked new’.

The designated land uses of the area included agricultural fields (mainly wheat and vegetables) comprising small lots tended by local inhabitants, scattered villages of very poor condition with regard to the construction of dwellings and roads, scattered development of poorly maintained structures and several ephemeral outdoor vendors along the main roads, commercial structures off the road without any organized access or parking, schools, hospitals, and military facilities. Aesthetically, with the exception of some views toward the green fields, the area had very poor character. The biggest surprise was the unexpected discovery of a Buddhist temple in the middle of nowhere, the only one seen in the area.

In retrospect, one could understand the reluctance of the officials to share information because, according to national laws, they are not permitted to share such information with foreigners in any format, including discussion or the provision of mapped data. Obviously, this poses an enormous problem with regard to gaining access to information and, consequently, to conduct the analysis required for planning.

2.4 Input for Plan Preparations

From the outset, it was extremely difficult to gain clear, specific directives that would guide the preparation of the conceptual plan. It was obvious that, prior to the initial visit to Anyang, no preparation had been performed by the officials that would help the team to understand which elements of the conceptual plan needed to be addressed. Input came in small doses and only after direction was repeatedly requested. Often the input received was substantially different from what was made available during the initial meetings at the beginning of the process. There were no written memoranda establishing the goals of the plan or its elements. When requests for goals or elements of plans were made, only fragmented responses were received, which were often the views of a particular official. When they were pressed for more details, the response was usually that the team should figure it out. Each official expressed his/her personal view starting with the Mayor, but later also the Communist Party Secretary, the Director of the Urban Planning

Administration Bureau, the Director of the Urban Planning Institute, and other department heads and staff. The lower a person was in the administrative pecking order, the less information would be made available.

After many entreaties, the Mayor finally informed the team about what he expected to see in the plan. He prefaced his comments by stating that he liked how American cities looked, and he wanted the design team to introduce American principles and concepts related to city planning. The Mayor emphasized the following:

- Anyang has a long history and deep cultural heritage as a unique place in China and attracts tourists to its museum and historic sites. The plan should embrace this and should serve as a bridge between the ‘old’ and the ‘new’.
- The plan for the Anyang Eastern New District (the original name of the plan consistent with the city expansion urbanization model of Chinese cities) should accommodate primarily residential land use at a typical Chinese urban density level. The new expansion would accommodate 350,000 people.
- The area for the city expansion was established, and its boundaries contained approximately 28 km² of farm and village land at the eastern edge of the city, east of the Beijing-Zhuhai expressway, between the Huan and Honghe Rivers. The specific boundaries would emerge after land use recommendations had been prepared.
- The Beijing-Guangzhou high speed passenger rail line would pass through this area, and a specific spot was defined with exact dimensions to accommodate a new train station.
- Commercial uses would include services and general retail to serve the district. The plan would not include a new commercial center.
- Other land uses were to include an area to serve as a center for Anyang county administration.
- A district meant to house the performing arts, museums, and other cultural institutions should be included.
- Parks and open space would be part of the plan.

The preparation of three alternative conceptual plans (scenarios) was based on the review and analysis of a variety of information: 1) Data collected from field reconnaissance during the school visit to Anyang in April, specifically with respect to land use and visual character; 2) discussions with the Mayor and Vice-Mayor of the City of Anyang, Planning Administration officials, and other officials to gain their input on what the plan should address; 3) a review of data that was given to the team by the Anyang Urban Planning Institute, specifically the Anyang Master Plan 2006-2020, which contained the greatest amount of information regarding city expansion in the form of new districts; 4) excerpts from a document pertaining to flooding in the region, demographic data, and maps of regional spatial structures; 5) information that the graduate students at the School of Planning had been able to find through research via the

internet. Specifically, this dealt with Chinese urban development laws, planning and master plans for Chinese cities, residential density, and block level utilization of space, as well as water resource information at the regional level.

A detailed review of environmental documents was not possible because they had not been provided by the Urban Planning Institute. There was a general mention of the need to protect open spaces and ecological corridors, but no details were given delineating the geographic location of these areas or a description of their characteristics. Similarly, the Master Plan stated that there is seasonal flooding of the Huanhe River, but no specific information was included regarding the boundary of the flood plain, its spatial configuration, or how urban development may be located proximal to the boundary of the flood plain.

It was not made clear how the existing scattered urban villages in the area should be addressed. These were mainly rural settlements of fairly poor structural condition, with very narrow roads. However, to the Cincinnati team, they appeared viable and expressed a more typical rural environment as opposed to the uniformity of the new Chinese residential high rise structures. With the exception of several key institutional buildings (i.e., hospitals, schools, military facilities, and newer commercial structures) the team was left with the impression that the officials wanted to eliminate the majority of these urban villages and replace them with new developments.

An understanding of the urban village area acquired during field reconnaissance, combined with a review of information by the students, showed that there are no particular constraints posed by the existing conditions that might hinder the urban development of the area or the establishment of urban spatial structures. Nevertheless, a few points need to be made in this regard.

- The existing street network will require substantial improvements, including street widening, street paving, storm water drainage, improvements to sidewalks and streetscapes, which will need to be made as part of the future overall network.
- Vehicular circulation within the urban village clusters is very difficult, requiring major changes to accommodate urban streets based on modern street safety standards. Substantial redevelopment will be necessary.
- The area is characterized mainly by areas of agricultural land, broken by scattered urban villages and structures.
- The visual character of the area is revealed mainly from driving along the main roads, and it is not very attractive. Building redevelopment, building rehabilitation and façade improvements, sign control, and streetscape improvements will be required at the minimum for all remaining areas.

Finally, toward the end of the spring quarter, it was possible to formulate a set of guiding goals

and principles from research and e-mail communications with Anyang officials. These were used to structure the alternatives and ultimately the final plan.

2.5 The Conceptual Plan

Following a review of the three alternative plans by Anyang officials, they recommended that the final conceptual plan for the Anyang Eastern New District be a combination of the first and third alternatives. During the presentation to officials in early November 2007, it was recommended that the name of the plan be changed to the Anyang Eastern New Town.

The theme of the conceptual plan is Innovative/Sustainable Urbanism. Its strength lies in its departure from conventional modernist planning principles, by attempting to develop smaller scale, humane and sustainable building blocks at the residential level. Sustainable urban development as a concept and in practice is nearly unknown at the provincial level in China. Policy initiatives and regulations from the central government are aimed at broad requirements for environmental protection; however, they have not yet been integrated with urban planning. Officials in planning are aware of cases of sustainable urban development, particularly from foreign consultants operating in large urban areas, but they do not know how to proceed with the preparation of plans for development that requires the inclusion of sustainable development practices. Thus, this conceptual plan is considered innovative in provincial China. Two flexible grids were used to establish the transportation system and define the structure of the proposed urban development. The elements and guiding principles of the plan are as follows:

- Creation of an attractive city, with livable neighborhoods and enhanced landscape urbanism.
- Development of a unique identity that connects the local cultural heritage with the new development.
- Incorporation of a 'living green' theme into the urban fabric that includes green buildings and technology, systems of alternative energy consumption, sustainable site design and infrastructure.
- Integration of open space, greenways, and urban green space with residential blocks and the transportation system to achieve maximum walkability and connectivity.
- Provision of several block typologies capable of defining neighborhoods and accommodating various densities, housing typologies, commercial services, and connectivity to the urban green space.
- Rehabilitation of selected existing urban villages and their integration into the new urban structure.
- Development of new urban villages based on traditional influences of urban design but which is fully compatible with modern principles of sustainable urban development.

- Horizontal and vertical mixed use development at all scales and in all precincts.
- Connectivity with the region and the first tier cities through the development of a high speed railway to serve as a hub for multi-modal transportation, corporate offices, transit commercial space, and high density housing.
- Development of a precinct for cultural heritage and performing arts.
- Development of a county government administration precinct.
- Preparation of an integrated network of conventional transportation, public transit, and pedestrian / bicycles.

The Anyang Eastern New Town Conceptual Plan is shown in the following illustration, displaying a structure based on a flexible grid of streets that affords blocks of smaller scale, five specific land use precincts, a comprehensive open space and greenways system, various housing densities according to block typologies, and the incorporation of existing villages into the new fabric. Guidelines and principles of sustainability are incorporated into all recommendations related to land use and urban design.

2.5.1 Urban Precincts

Five urban precincts are planned as foci of land use development and traffic hubs. They each have a specific role and are integrated with the grid system of streets. Together, they define the central area of the new town.

- 1) *High Speed Station Urban Core Precinct*: This includes areas for passengers, freight/commercial areas, bus terminal, mixed use development, commercial shopping center in the station, hotel/conference center, office complex, residential towers, open space, and parks. The reasonably comprehensive system of vehicular and pedestrian elements is integrated with substantial improvements in landscape, gardens, and water features.
- 2) *Hospitality Precinct*: This includes uses amenable to tourists, visitors and conference attendees, including hotels, conference centers, and entertainment venues. This precinct is located to the east of the railway, next to the cultural precinct.
- 3) *Government / Administrative Precinct*: County government offices and facilities are located to the east of the railway station. The civic center can be seen from the station and vice versa through a 100 m wide open space. This space is designed to accommodate outdoor exhibitions and cultural activities.
- 4) *Visual and Performing Arts /Cultural Heritage Precinct*: This precinct includes galleries, performance halls, exhibition space, and other cultural facilities. It is located along both sides of the 100 m wide open space that runs from the civic center to the station.
- 5) *Technology/Science/Education Precinct*: This is an area that was planned as a compact campus

to accommodate research and development, as well as to provide an educational environment integrated with the actual application of knowledge to products and services. This precinct is located along the main boulevard, to the north of the station, close to the riverfront and both vertical and horizontal greenbelts.

2.5.2 Commercial Use

The proposed plan does not include a specified commercial center. As shown in the recommended land use plan, the concept plan distributes commercial uses as follows: a) railway station commercial center, including transportation-node support commercial, enclosed shopping mall-type uses, commercial entertainment, restaurants, and cafes; b) commercial uses along major arterial routes directly accessible from the street to serve district and regional users; and c) convenient commercial uses at the block level accessible by walking to serve residents.

2.5.3 Grid Pattern for Main Roads

A flexible grid of main arterial roads and second order collector roads is used to structure and organize the space. The plan shows the order of the road system in terms of the roles the roads are meant to play in connecting the Anyang Eastern New Town with the present City of Anyang and the surrounding region, in handling various volumes of traffic and providing access to the new town.

2.5.4 Green Space System

The concept plan recommends the development of a highly functional and comprehensive green space system for the New Town.

- 1) Open Space Corridors: A major open space corridor along the expressway serves as a buffer between the existing urban development of Anyang and the Anyang Eastern New Town, while providing a green corridor to improve the visual character along the rail line, serve as a wildlife corridor, and connect with the Huan and Honghe River riparian zones. Another north-south green corridor connects to the east-west green belts and to the riverfront. Three east-west green belts provide relief from the constructed areas and provide access to the north-south corridors. These green belts include trails, pedestrian systems, environmental education gardens, and other such features. The existing canal is also used as a major element, as it runs through the open space axis, which leads to the high speed train station.

- 2) Riverfront Greenspace: The concept plan also uses the riverfront as an important green space for the new town, and an eco-park connects to the rail line green corridor.
- 3) Parks at the Sub-District Level: A system of parks is distributed throughout the new town to serve the recreational needs of the inhabitants. These parks include active recreational uses, as well as facilities for multi-generational needs. They are also linked to the green belts and open space corridors.

Table 1. Residential Block-Level Green Space

	Block Size	Area/Block (m²)	Hectare/Block	% Open Space/block	Total No. of blocks	No. of People/block	Density (people/ha)	Estimated Total Population
A	180 x 230	41,400	4.14	67%	28	5100	1231.9	142,800
B	220 x 280	61,600	6.16	58%	46	2754	447.1	126,684
C	220 x 300	66,000	6.6	50%	121	722	109.4	87,362
D	220 x 330	66,000	6.6	35%	27	569	86.2	15,363
Total	-	58,750	5.88	52.5%	222	2286.25	468.64	372,209

- 4) Residential Block-Level Green Space: Each residential block includes green space to provide a healthy living environment for residents. The green/open spaces are well-connected to one another to ensure that pedestrians are able to walk easily from block to block.

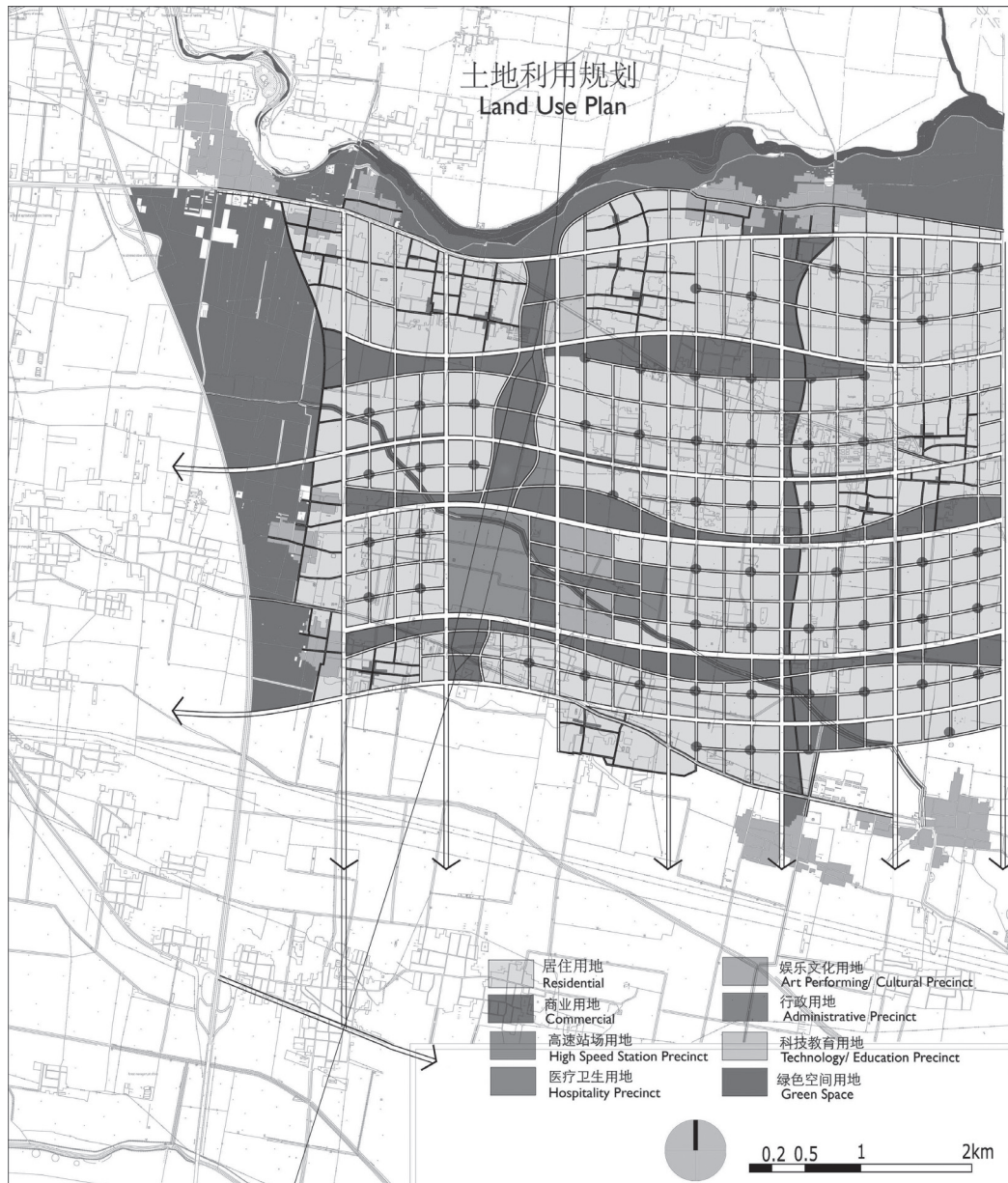


Figure 1. Land Use Plan

2.5.5 Residential Neighborhoods

Most residential development in the Anyang Eastern New Town is planned according to four specific block typologies, each with specific dimensions and sizes. These blocks are distributed within the grid structure. The blocks are designed to accommodate a variety of housing types, open spaces and recreational activities, and to incorporate small convenient commercial facilities and services, which support the residents of the neighborhood within close, walkable proximity. The remaining residential developments are smaller blocks distributed on the footprint of the rural villages. Inside each block, the traditional lifestyle of rural residents is preserved and encouraged, but still incorporated into urban life. Building height, housing typology and open space inside the blocks are based on traditional forms guided by the principles of green sustainability. These residential neighborhoods preserve the cultural identity of the rural villages and are located near the site boundary of the new town.

There are a total of five residential block types and densities. The estimated number of units and projected population that can be accommodated are shown in the table above.

The plan accommodates a variety of unit types within the four block typologies. Density is distributed appropriately from high-rise prototypes to single-family attached units. All residential buildings incorporate green infrastructure and LEED design principles. The detailed distribution of residential units per block type is shown below.

Table 2. Distribution of Residential Units per Block Type

Block Types	Building Type	No. of Buildings	No. of Apartment by Bedroom Type			No. of Units - Block Total	Green Roof Ratio
			1 bdr	2 bdr	3 bdr		
A	High-rise	3	336	672	336	1344	
	Mid-rise	4	180	360	180	180	17.0
B	Mid-rise	4	180	360	180	576	17.0
	Low-rise	7.5	70	140	70	280	8.0
	Garden Apartment	7	50	100	50	160	4.0

C	Low-rise	5	40	95	40	175	8.0
	Garden Apartment	6	30	60	30	120	4.0
	Townhouse	100	\	\	\	100	N/A
D	Townhouse	120	\	\	\	120	N/A
	Detached House	200	\	\	\	200	1.1

2.5.6 Villages:

These constitute the fifth type of residential block. They have been developed mostly from the existing footprint of the rural areas. They either have a traditional design or new designs based on traditional Chinese architecture.

3. DECISION CRITERIA

The Anyang Eastern New Town Conceptual Plan project has been presented within the context of American university planning activities in China as well as the rapid economic and urban development of the country. It is useful for those contemplating such involvement in the future to consider a number of important points before deciding whether to engage. The three areas to be discussed here are contracting and payment, data availability and sharing, and field investigation. These are discussed in turn.

3.1 Contracting and Payment

Contracting in provincial China involves numerous pitfalls, which are exacerbated by customary inexperience on both sides of the contracting process. Provincial officials have rarely been engaged in international contracting, and American university planning units have normally had little experience in China and virtually none in provincial China. Their activities are most often governed by university to university agreements with the better known Chinese universities in the largest, most sophisticated cities. The University of Cincinnati School of Planning has performed both, and dealing directly with officials in the provincial government is particularly difficult.

To begin, the Chinese bureaucracy or bureaucracies (city, provincial, and central governments) that must be dealt with are virtually impenetrable, even with Chinese language ability or assistance from a Chinese colleague. The customary rules of negotiation are unclear, and reaching mutually acceptable agreement is difficult. Officials appear to want all aspects of the agreement to suit their needs and are insensitive to those of their future partners. To them, negotiation appears to be a zero sum game. To succeed in this process, one needs to be very patient, but also very firm. It is important to know exactly what one wants to get out of the project but remain flexible. Several times after an agreement had been reached for the Anyang project, the Chinese negotiators would come back with a new schedule of activities or new constraints for the design. The fact that the University of Cincinnati planners were constrained by their academic calendar and the availability of students for preliminary research and studio work was dismissed as unimportant by their Chinese counterparts. Negotiation was very difficult and time-consuming.

All of this was complicated by two currencies, two legal systems, language issues, and fluctuating exchange rates. All such complications were intensified in the provinces. For the Anyang project, the contract was denominated in RMB, and the three installments were paid in dollars at the exchange rate of the day the money was transferred. The contract was also written in both languages, which took time to finalize. A particularly thorny issue was the legal system selected to govern disputes should they arise. The General Counsel's Office of the University of Cincinnati insisted that the contract be subject to Ohio law, while the Chinese assumed it would be subject to Chinese law. Thus, the contract was inconsistent on this point. It was resolved by removing all references to both legal systems and stating that disputes would be resolved by mutual agreement. Although this was sufficient to get the contract signed, it did not eliminate the problem, and the University of Cincinnati lawyers were very unhappy. However, they had no expertise in contracting abroad, which will be a major weakness if the university proceeds with more overseas contracts such as this.

Payment was also a problem. The first issue was whether the Chinese partner had central government approval to send foreign currency abroad. Chinese currency may not be exported, and even municipalities require licenses to convert their money to dollars for payment. Luckily, this was not an issue, although it took a few days for the Chinese partner to ensure that the municipality could do so. However, the chain of approval necessary to actually transfer the money was long. To outsiders, the politics involved in payment is entirely unclear, and even after deliverables had been approved by local authorities and payment had been authorized, the time to actual transfer was longer than promised. One payment was four months late, much to the chagrin of financial officers at the University of Cincinnati. Thus, keeping to a payment schedule proved problematic. The work performed in the project was planned by the School of Planning, such that all expenses would be covered by the first two payments, with profit coming with the

third. The schedule of payment was 30% within one month of signing the project, 50% within one month of the presentation and approval of the project, and 20% within one month of the final submission of the report. If the second payment did not materialize, the Chinese client would get nothing usable. Despite these precautions, the last payment did not materialize for more than one year after the final plan was submitted, due to continual requests for graphics in different forms and scales, which were outside the scope of the contract, and complaints that the graphics could not be displayed on the Chinese versions of the software used. After many communications and additional submissions of visuals, none of which required changes to the final plan or report, they were satisfied and paid in full.

Another difficult aspect of contracting is convincing provincial officials to prepare proper terms of reference (TOR). All professionals who have worked as consultants know that having proper TOR is key to signing a good contract. However, it was not possible to move beyond a short, vague, and unclear statement of work in the contract. Leaving so much open to interpretation was initially a cause for concern on the American side, although this did not lead to any major conflict. Nonetheless, this kind of ambiguity could have been the source of contention. Nevertheless, it was still necessary to move the location of the high speed train station, a central component of the plan, several times due to new directives from the railway authorities in Beijing.

One potential source of difficulty in obtaining proper TOR is the very different views of planning in China and the United States. In China, planning is an outgrowth of either architecture or engineering and is not its own discipline. The Anyang Eastern New Town Conceptual Plan covering 28 km² is a far larger urban design scheme than the Chinese are used to working on. Although they have large scale urban plans, these are very sketchy and little more than colorful maps with population targets and a list of industries to be built. They are not at all comprehensive, neglecting social, cultural and financial aspects and economic viability scarcely, and the effects of the new development on the existing city and or surrounding areas are largely ignored. Detailed plans and designs are usually no larger than the super block.

3.2 Data Availability and Data Sharing

The scope of work that the School of Planning outlined in February 2007 was eventually used to prepare a collaborative agreement between the Anyang Urban Planning Administrative Bureau and the University of Cincinnati, College of Design, Architecture, Art, and Planning. In addition to listing tasks and deliverables, the contract also requested a list of data needed for the preparation of the plan. The data included standard categories of information necessary for undertaking a project of this magnitude. The need for information was more acute in this case

because, unlike the US experience where data can be accessed from a multitude of sources, the professors at the school were aware that data for urban planning and environmental resources are not available within an easily accessible system. The expectation was that by letting the Chinese officials know well in advance of the need for information, they would have the time to put the information together prior to the school's visit in early April 2007. To gain additional insight from discussions during this visit, a comprehensive set of questions was prepared and sent to the Urban Planning Institute in February 2007. Most of these questions were fairly typical such as: What are the key issues and problems with urban development and growth? How much agricultural land should be converted to urban uses? Where does Anyang get its water and how clean is it? What are the key environmental challenges?

It was during the first visit, however, that it became obvious that no data were available and that a systematic inventory and recording of urban planning data had never been assembled. The officials had neglected to put together a packet for the team from Cincinnati and offered no answers to the questions that had been sent to them. During meetings, some of the questions were posed again; however, no specific answers were provided. Instead, the consultants had to deal with personal opinions and assurances that whatever the team dreamed up would be fine. For example, with regard to the issue of how much agricultural land should be preserved, and if it should be included in open space, the answer was that the government owns the land, and could use it as it wishes for any kind of urban development. Eventually, the team came to an understanding that the national government does not allow foreigners to leave the country with any information related to existing conditions, or with maps or documents. Nonetheless, assurances were made that they would send the data at some later date, and a visiting scholar from the school brought a packet of information when she returned to Cincinnati. However, the packet included only limited excerpts from the county and city documents related to population, employment, the rail line, and vague references to the flood plain without even a map. Most of the general data that were sent were of no use to the project.

In Anyang as in other Chinese third-tier cities, urban planning is one of the components necessary for city physical planning, an activity that includes the contribution of other departments such as engineering, sanitation, storm water management, parks and recreation, transportation, and tourism. The Anyang Urban Planning Administration Bureau provided overall contract management and project oversight, but the technical aspects of the plan, including conformance and approvals from central government agencies, were administered by the Anyang Urban Planning Institute. This entity is responsible for the technical review of day-to-day plans and development activities, in a contractual capacity, as an extension of the Urban Planning Administration Bureau. As a result, although the director of the institute was responsible for providing the School of Planning with data and comments on the alternative plans and final plan,

the final approval authority lay with the Director of the Urban Planning Administration Bureau. This relationship added considerably to problems of communication and delays in obtaining data and feedback.

Looking back at the experience of the University of Cincinnati School of Planning with the issue of data, it is clear that for provincial cities and regions, urban planning is considered the physical engineering of the city. It is overwhelmingly evident in Anyang, as well as in other third-tier cities, that the provinces follow the example of big cities with respect to growth and physical structure. This is a poor expression of modernist planning, which is shaped by super blocks and high rises as well as isolated and disconnected land use. Growth can take any form, but most preferably is the imitation of a 'modern' big-city. As long as they are able to approximate an imitation of big cities in provincial towns, it does not matter to public officials whether it is based on the systematic analysis of relevant data.

Basic documentation and analysis of data are customarily undertaken by planners and urban designers in the US and Europe; however, they are not part of the experience of provincial city officials. As a result, they were neither prepared nor capable of working with the School of Planning in a collaborative manner in the preparation of plans. Furthermore, because of the direct supervision of national level agencies in the provision of information and approval of key improvements to infrastructure, the task of obtaining data is even more difficult. The focus is constantly changing; that is, in offering specific solutions to problems, officials better understand the project, which results in the scope changing repeatedly. One example is the case of the high speed railway station. Originally, the school was provided a location and approximate dimension for the station as shown in the 2006-2020 Anyang Master Plan (city and county). In that plan, the rail line was going to be at grade; however, during the review of the three alternative plans, the Anyang officials said that the National Rail Agency was going to elevate the rail line. As a result, the station had to be redesigned to accommodate this change. After the presentation and review of the final plan, the same officials stated that the location of the station and its dimensions had changed again, and that the rail line would be at grade level when it enters the station area. In fact, they sent a sketch to Cincinnati that shows the exact dimensions for the station, tracks, platforms, and other elements that they had not discussed during the early phases of the project.

In a similar fashion, it was only after the review of the alternative plans that the officials were forthcoming with a precise boundary of the area for the new town. Fortunately, it was the same overall area with only a slightly different shape.

4. LESSONS LEARNED

The engagement of the School of Planning of the University of Cincinnati in the preparation

of the Anyang Eastern New Town Conceptual Plan was actually a consultancy, with specific terms of reference, deliverables, time lines and costs. Unlike typical international studios, in which faculty and a group of students visit a location, and with the engagement of the local officials, undertake an exercise, this situation was based on an agreement for services between the University of Cincinnati and the City of Anyang. This relationship established a very specific perspective and brought forth a whole host of challenges. Language, distance, cultural issues, and assumptions made by both parties contributed to the effectiveness and success of the project. Even though only one of the students was able to visit (through a lottery) Anyang and participate in presentations, they all gained very specific knowledge about the various constraints inherent in planning and urban design projects in China, but more specifically in provincial China. This perspective differs considerably from that of places they are accustomed to seeing this kind of project, in places such as Shanghai and the southern coastal plain region.

The professors who participated also gained valuable knowledge that will help them to determine the feasibility of undertaking further sponsored projects in China. The School of Planning uses sponsored studios as a vehicle for engaging students in real projects to be sponsored by local governments and organizations in the private sector. However, conducting projects such as this in China posed unique challenges for both students and faculty alike. Access to the clients for background and feedback is the key to success in preparing plans, and although the students relied on the faculty to fulfill this role, the professors themselves had difficulties and frustrations trying to obtain input and/or clarification. Surprisingly, language in formal communications was an overriding issue because the Cincinnati team was able to use a Chinese faculty member and Chinese graduate students to translate e-mails and attachments.

In retrospect, a number of key issues can be identified to play a key role in the success of project involving American or European Universities in conjunction with the Chinese government. These include the following:

Planning Process: Chinese officials tend to be unfamiliar with the planning process used in the US, and it is easy for foreigners to make the assumption that their Chinese counterparts understand the western perspective, including the need for information, clarification about specific boundaries, policies, and programs before work can commence. In this case, all of the officials in positions of urban planning had training in engineering; however, none of them had experience with large scale comprehensive planning. Although the conceptual plan dealt mostly with physical issues, their approach was based mostly on infrastructure (transportation, utilities, rail line). The responsibility for establishing directions, goals, and objectives to guide the work of the School of Planning was not included in their mandate.

Moreover, when foreign consultants and/or academic units are engaged in the preparation of plans in provincial China and are promoting sustainable development principles, the lack

of knowledge at the local level may hinder communication and interaction between the local officials and the foreign consultants. Education and local citizen participation prior to actual planning and training about how to apply Western-gained knowledge to provincial China should be a top priority if China is to conserve scarce resources and offer its population a high quality of life.

The fact that Chinese laws do not allow foreigners to access maps or data (as local officials made clear), adds to the difficulty in gaining a reasonable understanding of the physical dimensions and issues at hand. In addition, the strong hierarchical structure of the government in which the national government sets the scope and direction for planning, adds a considerable degree of uncertainty as to what is required for a final recommendation from the Chinese. The University of Cincinnati had to deal with the failure of officials to provide clear directions and only requested that the School of Planning pursue what it thought was appropriate. However, when the officials were able to review the plans and provide recommendations, they provided specifics that were not forthcoming when they were asked at the initial reconnaissance stage. A good illustration of this is the Cincinnati team's understanding and use of a particular area for the New Town. Pursuant to the review of the three alternatives, the officials contacted the School of Planning and informed them that they had used a slightly different area configuration than was actually the case. It was only then that a map was provided with exact boundaries. Similarly, pursuant to the review of the alternatives, the Anyang officials said that the high speed rail line would be located at grade; however, they then informed the consulting team that the track was to be elevated, according to revisions from the National Railway Department. This necessitated the redesign of the plan and train station precinct. After the final conceptual planning was finished, officials stated that the line was going to be at grade in the precinct area, requiring further changes five months after the plan had been finished.

It is clear that American universities can play a key role in providing training to local officials in China with regard to the planning process, and urban planning in general. This training should also include how an agreement is structured for plan preparation and the need to establish a clear planning process to be followed by Chinese officials.

Project Program and Expectations: This is another important area in which Americans attempting to work in China had to learn the hard way. The lack of a clear starting point, combined with the assumption that basic data, policies, and a land use program to guide the preparation of the conceptual plan were available, made it difficult to gain an understanding of the specific elements of the plan. Eventually, it was possible to gain this knowledge incrementally. Another area in which American universities could play a role in training officials is dealing with the need for preliminary work and program development.

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