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## The research for the historical and cultural environment protection system based on the concept of "Mountain -Water-City"

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### ABSTRACT

With the rapid advance of urbanization construction process and the rapid expansion of urban areas in China, cultural heritage has suffered a huge impact; its history characteristic has been gradually disappeared. This paper returns to the construction idea of Chinese traditional city, extracts and purifies the structure features of integrating "mountain-water-city" into unity, and interprets this characteristic from three perspective including culture, function and aesthetic, constructs the interpretation framework for the idea of "mountain - water - city". On this basis, this paper puts forward the development ideas of the historical and cultural environment protection system based on the idea of spatial unit about the multi-scale "mountain- water - city". Finally through performing analysis and interpretation for the idea of "mountain-water-city" in the process of planning and designing CBD (central business district) in Dexing, it expects to provide reference and direction for the current status of urban construction, as well as the historical and cultural environment protection in our country, finally this historical ideal of inheriting and carrying forward the Chinese traditional culture in the process of pushing forward economic development will come true.

### KEYWORDS

"mountain-water-city"; Historical culture and environmental protection; Dexing's central business district.



## INTRODUCTION

With the integration of the global economy, the global culture has emerged the trend of convergence and integration. In order to deal with external shocks, all countries are trying to seek its cultural personality. Since the reforming and opening up in China, the urban construction pace has gradually sped up, the town is facing unprecedented opportunities for development in the good time of absorption and recreation, but the development of the real situation is worrying, such circumstance is almost in the "state of flux"<sup>[1,2]</sup>.

On the one hand, due to insufficient attention to the heritage of Chinese traditional culture, the newly constructed environment not only cannot be in harmony with the cultural heritage, but also compete to be "leading role", thus making the latter descend into "isolated island" of the city under the background of rapid city construction; in areas surrounding the cities, the disorderly spreading of city has caused very big menace to the landscape environment, many beautiful natural environment and scenic spots with long history have been damaged. On the other hand, the construction of the physical space has been put too much emphasis in the process of development, the phenomenon of simply interpreting "development" as "constructing high-rise buildings" and "thousand city with the same view" can be found everywhere<sup>[3]</sup>. These problems are becoming increasingly fierce, one of its important reasons is that the city planning work in the past has paid insufficient attention and performed inadequate exploring on Chinese traditional ideas in the process of learning western wisdom, and it has not formed the programme and design method which is suitable to the pattern of traditional city in China.

At present, many places have also gradually realized the significance of historical and cultural environmental protection, and taken the corresponding protective measures<sup>[4-6]</sup>, but it is still lack of the protection planning and understanding of the overall system. The purpose of this paper is to trace back to its roots and start from the basic concept of the urban construction, through focusing on forming city's construction concept of harmony coexistence among "mountain-water-city", so as to realize the era responsibility of historical and cultural environment protection.

### **"MOUNTAIN-WATER-CITY" PATTERN: UNIQUE MODEL OF CITY CONSTRUCTION IN ANCIENT CHINA**

In traditional Chinese city, landscape is not only the "basement" of the city, but also is an important part of the city's "photographic composition"<sup>[7]</sup>. The organic combination of both makes the pattern of "mountain-water-city" represent a meaningful form, and this kind of form not only contains rich creating ideas and aesthetic culture, but also reflects the city concept on implying their ideal schema. In terms of the "base", due to it is affected by many aspects such as production life style of enriching country with agriculture, the political and military needs of "choosing and standing in the middle", and the traditional philosophy thoughts of "behaving as heaven and earth" and so on, the ancients had paid much attention to the choice and borrowing of landscape environment in choosing and building the location, the traditional city has experienced thousand years of development and merged with "mountain and water", it has gradually become a rich and profound "historical reproduction" through deposition, and developed into the material space base of urban construction and development. In terms of "photographic composition", the ancients had inspected landscape environment, they not only focused on natural attribute, but also took into account cultural connotation, they should follow the principle of taking use of original landscape and "fronting water and with hills on the back" as far as possible, at the same time, because the landscape environment can't completely meet the requirements of the ideal composition, it also needs to build artificial landscape or structures with landscape function to supplement the shortage of the original composition, and even if the real space can't be perfect, it still should pursue the ideal composition of "mountain-water-city" on the basis of expression idea. Joseph Needham pointed out: "there is no other places where people are eager to reflect their great ideas,

namely people cannot leave natural principle, the 'people' here is not the person that could be split out in society. The palace, basilica and other major buildings are in accordance with this principle naturally. For city and town, the concentrated buildings and distributed houses in village often appear to make people feel a sense of 'the universe schematism, as well as the symbolism serving as direction, season, wind and stars ". Therefore, "mountain - water - city" pattern is an important starting point when performing research on Chinese traditional city model and exploration of China's current environmental history protection and development ideas.

### CULTURE, FUNCTION AND AESTHETIC CONNOTATION IN THE TRADITIONAL CHINESE IDEA OF "MOUNTAIN-WATER-CITY"

Chinese traditional pattern of "mountain-water- city" can be interpreted from three perspectives including culture, function and aesthetic. Culturally speaking, the important role like communicating heaven with earth, as well as defined space landscape embodied in the concept of "heaven and earth" and "world pattern" has made a profound impact on whole environment view of ancient people, thus makes the ideal mode of "mountain-water-city" become a kind of potential ideas in guiding people's activities of constructing the city. Functionally, Chinese ancient people had paid more attention on studying natural landscape environment, and accumulated rich experience of resources supply, disaster prevention, flood control, military defense, and many other aspects, which is the functional basis of forming "mountain-water-city" concept. Aesthetically, at the same time of developing, transforming and utilizing nature, the ancients had gradually discovered the "beauty" implied in landscape environment, and then began the creation of culture. The pattern of "mountain-water-city" in each place has eventually formed the landscape of " with beauty in each place", thus it becomes an integral part of Chinese traditional living space, cultivates and shapes the temperament of the local people, gives birth to the most characteristic feature and cultural traditions.

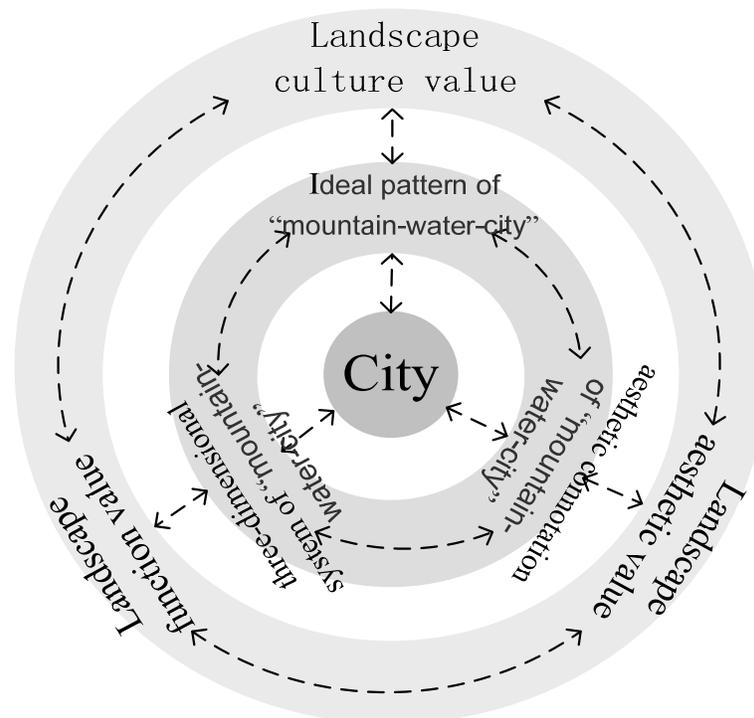


Figure 1 : Suggesting frame of "mountain-water-city" idea

## DEVELOPMENT IDEAS OF HISTORICAL AND CULTURAL ENVIRONMENT PROTECTION BASED ON THE CONCEPT OF "MOUNTAIN-WATER-CITY".

Based on the concept of "mountain-water-city", with inverse reflection on ideas and methods of current urban planning in China, establishing the multi-scale space unit concept of "mountain-water-city" in the work of historical and cultural environment protection and development is particularly important. The original fear to landscape and the romantic imagination to the world in ancient Chinese mind has made small places like a small village, a courtyard home garden, and even miniature bonsai, and large places like a city and a region, and the vast world, all can be summed up as the "space unit" which takes the city (region, village, home garden) as the center and landscape as coordination. As Sicheng Liang proposed out very early in China that, "ancient people's constructing city and room" could be mentioned in the same breath with the urban planning and construction all along. "This common holistic thinking implied in the concept of Chinese traditional city is not only the understanding basis of interpreting urban space in ancient China, at the same time, it should be the important idea about present protection of historical environment and city construction<sup>[8]</sup>". Now in the general understanding, urban planning and designing focus on space organization and constructing outside the building, but the urban planning and design based on the space unit of "mountain -water - city" (it can also be interpreted as regional designing) emphasizes the settlement points and the surrounding landscape environment as a whole to consider. The relationship of urban and landscape not only includes function equilibrium of resource supply, but also pays attention to the coordination of recreation site and creating cultural aesthetic and artistic conception, lays emphasis on the coordination of multiple scale<sup>[9,10]</sup>. It has provided important thinking for constructing urban and rural environment which is pleasant, culturally enriched and in coexistence with nature.

Starting from the concept of "mountain-water-city", the new conditions, environment and the request should be combined within the protection of historical and cultural environment protection, as well as the current development of work, the traditional connotation will be performed with creative use, inheritance and promotion, it could be applied with adjustment to local conditions in different spatial scales combining with the specific conditions.

### **Constructing the art skeleton relying on the advantage of mountain and water with regional scale**

Landscape environment is the regional resource, the city history and culture carried in it which acts as the base of city tends to present the characteristics of region. There are many different kinds of protection and control measures related to landscape environment in our country at present, although it is of a great variety, (such as green space system planning, ecological protection planning, historical and cultural city's protection planning, scenic area planning, etc.), but at the regional level, it mainly focus on the scientificity of ecological protection under the perspective of natural resources, but it is still lack of the protection work of historical and cultural angle. Therefore, on the one hand, we should expand the scale of the historical and cultural environment protection according to the natural partition and partition of history culture about landscape environment, thus designate the border protection, establish the protection mechanism of the cooperation, and make whole layout in the area.

On the other hand, we should pay attention to integrate this kind of "state" planning with existing "ecological" planning work of regional level. Good natural environment and complete ecological pattern is the basis of constructing art skeleton, but that the building of art frame just relies on the integrity of the natural environment and the principle of diversity is not enough, it also needs to be examined from the angle of historical and cultural landscape, meet the bearing capacity of regionally ecological conservation and merge with the protection of historical sites and the construction of cultural landscape at the same time, construct the integrated network of multi-subject like politics, military, culture and so on based on the traditional function. The protection of landscape environment in western urban planning system mainly starts from the perspective of natural ecology, but recently all kinds of planning have begun to appear the trend of amalgamation. Such as the concept of "heritage corridor" which has rosed in Europe and United States is the integration of cultural heritage and the protection of the natural environment within regional scale, which could be used as our reference.

### **The landscape department which takes city attractions as center within urban scale**

Stressing the function of landscape on city's "photographic composition" is one of the big features on Chinese traditional city construction. The current protection to historical and cultural environment is mainly performed through designating protection site of culture relic, making protection planning of historical and cultural city (village), as well as scenic spots, but in reality because of the whole integration into the historical environment is not enough, it has led to failure of appreciating the value of the monomer history landscape, the protection range which only takes into account operability is in gradual shrinkage. Look from the perspective of historical and cultural protection, as well as the view of city construction, the existing cultural relics and sites are tools of conveying the carrier of history information at most, which should be paid more attention, but if it is only limited to passive protection of monomer, the protection will become the burden of urban development. If the research on the designing concept of landscape in history process has been combined, then what presents to the urban planning workers will be no longer the sporadic scatter, but the overall pattern of choroid with deep and wide history. It will undoubtedly provide powerful support for protecting dispersive historic sites and offering significant basis for inheriting the historical and cultural heritage in area.

On the other hand, developing the new landscape should also be paid more attention under city spreading. City, village, country industry, gardens, scenic spot, etc. are only different at artificial and natural levels; the human settlement environment they constitute together is the dynamic continuum body formed through crisscross integrating artificial environment and natural environment. For the historical sites which are going to be incorporated into city scope, their new function could be discovered on the basis of history function, which helps to make them actively integrate into the urban space and public life. For suburban scenic area, as a combination of historical and cultural landscape, as well as natural landscape, in the near future more attention should be paid to the landscape space unit, which also could construct landscapes corridor for connecting historical sites in a greater scope. In the long-term, country garden will possibly be in gradual conversion to city center from city edge due to the continuous spreading of city, and finally evolves into urban forest. If much more attention could be paid to the city location, urban scale control and landscape opening in the process, it would also make garden islands which are scattered in the center of the city and the surrounding islands convert into rich system, thus make cities be the settlements for which are scattered in the environment of landscape architecture. By which we can jump out of the old programs on historical and cultural environment protection, pursue the balanced interaction between landscape and urban environment within a larger scale, and then construct a pattern of "mountain - water -city" in the new era.

### **Shape spatial spirit enriched with humanistic connotation in key section**

Location scale is the space level where people obtain direct perception, and key sections of the urban and rural environment play an important role in shaping the location space which is enriched with rich humanities connotation. Buildings and gardens, as the elements of constituting urban space, on the one hand, it needs to be built under the concept of integral building concept, pay attention to keep harmonious with the overall environment. A city, a region, up to the cultural connotation that a country embodies, it is the space accumulation and superposition based on these location spirit, so as to enable us to obtain the integrity of spatial awareness and cultural cognition. If urban culture's shaping only stays in the protection of historical heritage, so as the city's spreading, the element which contains urban culture will become more and sparser. Therefore, as urban planning workers are in making arrangement of urban functions, they also shoulders on the responsibility of creating urban culture at the same time. In the current urban planning and design, on the basis of land function layout, regulatory detailed planning and particular programme on construction jointly lead to shape city image through index control, urban design and space expression. In the process of the city digitalization and fragmentation, urban planning workers should not simply distribute digital indicators, but also pay more attention to the cultural connotation, perform creative work from the angle of constructing the integral space environment.

On the other hand, during the process of planning and designing key sections, the understanding of design will become more abundant based on the concept of spatial unit on multi-scale "mountain-water-city" in traditional Chinese idea, such as afforestation rate is no longer a numerical request, and it

should be regarded as the reflection of overall environment concept on "mountain-water-city" in basic spatial unit. Planners, architect-ers should see this location and city, even the culture connotation of the whole region through the space dimension of this field, and it should be discovered and showed in the planning and design. The concept of "regionalism" put forward in architectural design field has carried out the research on such field, starting from the integrity concept of the space construction, the exploration should be expanded to the region, cities and regions, and unified consideration must be taken in urban planning of historical and cultural environment, thus it will successfully create location spirit of enriched cultural connotation.

### **EMPIRICAL ANALYSIS FOR HISTORICAL AND CULTURAL ENVIRONMENT PROTECTION SYSTEM BASED ON THE CONCEPT OF "MOUNTAIN-WATER-CITY".**

Dexing city is located in northeast of Jiangxi province which is the junction of three provinces including Jiangxi, Zhejiang and Anhui province, it has a long history, which is known as "jinshan, silver city and the capital of copper, ". In the city, it is mountainous and has dense distribution of river, Ji river goes through the city throughout the country, and enjoys good landscape pattern (Figure 2)<sup>[11]</sup>. As it is limited by topography and geomorphology characteristics, the main city represents the development trend of strip pattern and southeast direction, mountain landscape and water landscape are also of parallel layout. Central business district locate in the center of Dexing city's new urban district, its base is elongated and represents layout of north-south direction. Vertical base form has provided a good opportunity for perfecting the urban integral pattern.



**Figure 2 : The pattern of "mountain-water-city" in Dexing city**

In program planning, we should first consider the area in ecological restoration, perform modification to block building with some historical characteristics, give consideration to the historical and cultural heritage and development at the same time, avoid the development location and model which is unfavorable to natural function, consider giving full play to natural function and beauty as far as possible at the same time. The specific practices are as follows:

#### **The axis is connected with landscape on the plane.**

In order to strengthen the effective connection of the landscape in north and south, and form the overall pattern of the "one center in one area with many points, the location surrounded with mountain and water", the city planing follows the path of that "north Ji river goes through theatre complex and cultural square surrounded by book museum, and reaches Dexing building (office building of municipal

government),civil square, then arrives CBD central park and shopping plaza in urban complex, finally extends to phoenix mountain to the south, which has constructed the functional spindle of city level that transforms from water body to mountain body, from nature to manual work, finally merges into nature. This axis could actively install each functional space of business district in series, connect the landscape of north and south ends with tangible way, thus forms effective interaction among "mountain-city-water".(Figure 3)

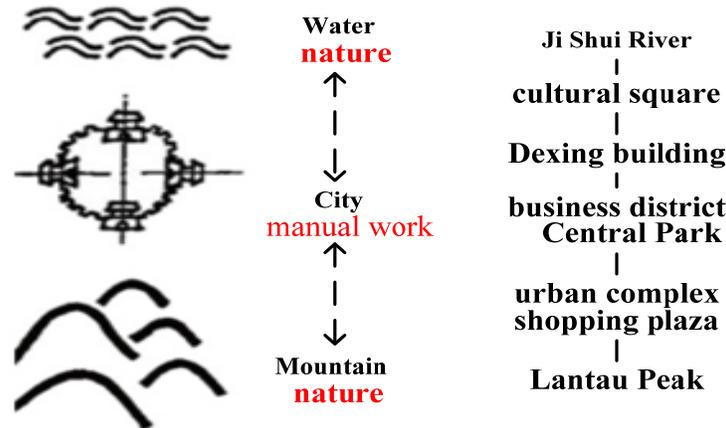


Figure 3 : The axis is connected with landscape on the plan

**The integration of landscape and city in space**

The scheme pays much attention to the building of waterfront skyline in the space. Around the central business district (CBD), most of the plots have been built, and most of them are in the form of multistory buildings, and the waterfront skyline is relatively flat. Planning is on the basis of the status quo about construction, which is in combination with the distant mountain outline, so as to set commanding height in district, reasonably decorate high-rise building location, create rich and changeful waterfront skyline with rhythm, and be in echoing with the mountain body, take the advantage of beautiful mountain outline for city use (Figure 4).

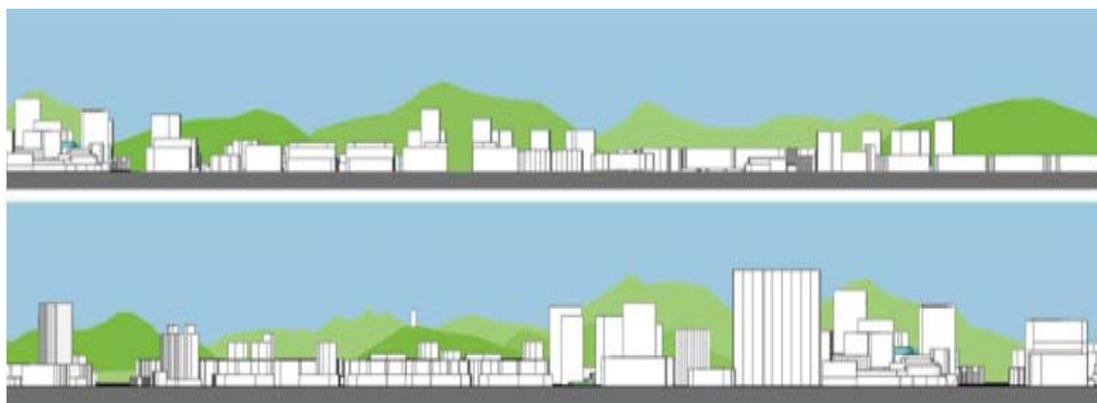


Figure 4 : The integration of landscape and city in space

**The formation of ecological corridor**

This scheme is to shape the landscape space of iconic city based on the original natural form, strengthen identifiable feature of the space through the reinforcement of spatial characteristics, thus build a multi-level and multi-scale landscape environment system. The spindle of urban functions extend to the south from Jishui River along the venue center, and integrate into the background of mountain, it has also formed landscape axis and sight propylaea of scheme. In addition, urban design has left a sight propylaea between Central Park and Juyuan Building which acting as city landmark in the southeast,

thus forms the relationship of opposite scenery. This scheme will guarantee the cut-through landscape of visual corridor in multiple orientation and multi angle through giving full play to the natural property in CBD (central business district), thus implement landscape dialog (figure 5).



**Figure 5 : The breaking through of landscape's visual corridor**

#### **Perform transformation and inheritance on buildings with featuring enriched historical block**

The arterial traffic and both sides of pedestrian street around planning area have adopted the pattern of imitating Europe and mixed type; the internal side of blocks could be designed and combined according to the architectural characteristic in a certain area, so as to form neighborhood characteristics; for the building along the street with less decoration originally and no special value, more decoration should be added on them in principle; discontinuous architectural streets should increase their buildings; streets around important buildings and the architectural style of blocks should be coordinated; the streets and blocks should be restored to the originally old appearance as far as possible ; the history museum should be constructed to comprehensively introduce the history and characteristics at home and abroad; local residential space form and historical symbol in Dexing could be continuously excavated, so as to be directly used in the building. Take the restorative protection method of combining dot, line, face: dot - individual historical building should be protected according to four levels including preserving, protection, updating, and reconstruction; line -the view of city street should be adopted with graded protection; surface - according to the characteristics of the overall urban planning and current situation, the space form of building should be determined (Figure 6, 7).



**Figure 6 : Street view, building exterior, architectural details before modification**



Figure 7 : Street views, building exterior, architectural details after modification

**Harmonious coexistence on texture**

The building inside the central business district represents cluster layout and texture distribution with reasonable density. The central part is of enough evacuation and open space, which has guaranteed the spindle axis, base which takes Dexing building as center to be open and the broadness of Juyuan building's axis; peripheral part is compact and orderly, north and south district is relatively dense, which has formed whole texture features of wide spreading and closing. Buildings have blended mutually with space, water, green and the surrounding landscape, thus keep harmoniousness in contrast (Figure 8).

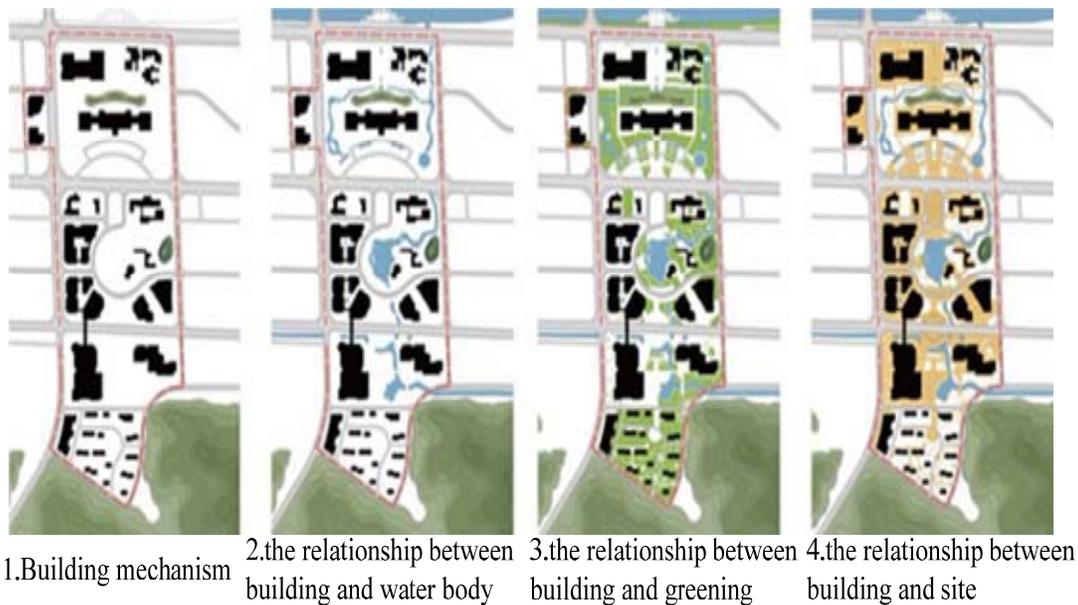


Figure 8 : Harmonious coexistence on texture

**The mining of natural elements**

The scheme follows the design concept of mixed use, guides the urban vertical development, improves the land use value, while it helps to meet the functional requirements, reserve open space to the largest extent, which is advantageous for retaining and shaping the base of the internal natural elements. On the basis of respecting original hydrological texture, we should make full use of the present situation about landscape elements, retain three existing open channel and optimize its shape, constitute water arteries and veins in the north-south vertical direction; local amplification method is

applied in key area, thus form planar waters of central park, as well as enhance the overall landscape effect, it also has a certain function of flood control and flood discharge; the planning has provided the maximum level of reserves on the internal base relying on the east side of mountain, and made it into a public open space of the ecological environment through combining with the center of the lake landscape. Planning will also connect the green and open space like city parks, green space in street, recreation square and so on in natural environment with water system landscape in series, and then give them extensions, helps to form overall landscape system with scenic area of suburban mountain and the phoenix lake etc which are connected with peri-urban areas, strengthen the connection among the landscape (Figure 9).



**Figure 9 : The mining of natural elements**

### **The design of important nodes**

Such planning has divided central business district into four important landscape nodes: cultural square, public square, central park, sunken square. Culture square has combined with the established cultural buildings constructed on the east and the theatre exhibition synthesis planned on the west axis for building dense and artistic culture atmosphere in Dexing, it is also an important window of displaying city image in Dexing; the citizen plaza is arranged with Dexing building, winding stream passes through the square's surrounding, thus it forms the power of using jade belt looping waist, there is good ecological environment landscape on both sides; central park embodies the coordination and integration of natural scenery and human landscape, which is echoing with Juyuan Building far away and has formed the contrast and communication of historical landscape and modern landscape; fall processing is performed on sunken square, thus forms the stereo shunt of many pedestrian for commercial leisure and city traffic; while it will guarantee convenient traffic at the same time, vertical greening of backward and dropping shape, as well as sketch and table & seat etc have been established

for providing the rest space, waterscape could be processed into waterfall and fountain, which will add lifelikeness and interest to a certain extent (Figure 10).



Figure 10 : The design of important nodes

## CONCLUSION

Chinese cities are experiencing rapid development, the neglect of local traditional planning idea for a long time has led to the characteristics crisis of suffering the possibility of losing historical and cultural connotation. Given consideration at a deeper level, characteristic crisis reflects that there existing problems in the ideas and modes of urban development. The current urban planning and construction gives priority to economy and function, for the city which is lack of cultural dimensions and humanistic concern, it will only become a functional and efficient city, not the livable and artistic city. China has thousands of years' history on city construction, she has created the art of urban and rural environment in bright color, traditional city concept has formed its own pattern in the developing history of world city. During the transition period of current urban development, the thinking of paying attention to scientific development has been put forward, which should include introspection of cultural construction, so we should be more confident to draw nutrients from the wealth of the ancestral, explore the connotation of "mountain-water-city" in traditional Chinese pattern and carry it forward, combine the rapid development of economy and the construction of regional culture, as well as the protection of the ecological environment, focus on the creation of art and culture in the scientific and urban planning, strengthen the research for traditional culture connotation in the landscape design, expand the overall environmental considerations in architectural design, explore the city construction road with Chinese characteristics in the process of marching toward the integration direction of science and art.

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## REFERENCES

- [1] S.Zhang; Introductory Theory of Protection in Historical Cities -A holistic Approach in the Protection of Cultural and Historical Environment. Shanghai: Shanghai Science and Technology Publishing House, (2009).
- [2] F.Zhang; Protection Countermeasures of History and Culture in the Development of City. Nanjing: Southeast University Press, (2012).
- [3] S.L.Zheng; China's Urban and Architecture under the Influence of Globalization. Journal of Construction, 2, 7 (2013).

- [4] Q.N.Zhang; Characteristics Victoriousness- the Discussion of Architectural Theory. Beijing: Mechanical Industry Publishing House, (2010).
- [5] T.Wu, W.B.Liang; The Extension of Arcade and Tts Culture in Wuzhou, 6, 25-27 (2011).
- [6] Y.Liu, H.S.Zhao; The Exploration for the New Updating Model in the Protection of Historical Block -"New Phenomenon of General World ". Interior Design and Decoration, 12, 130-31 (2010).
- [7] D.Wang; Chinese Garden and Culture in Ancient China. Wuhan: Hubei Education Press, 3 (2008).
- [8] S.C.Liang; Great Traditional Buildings and Heritage in Our Country. Collected Works of Sicheng Liang (v.). Beijing: China Building Industry Press, 99 (2010).
- [9] M.Neuman; Regional Design: the Revival of Landscape Planning Design and the Excellent Tradition of City Project. Jieyi Yin, Foreign Urban Planning, 3, 26-32 (2011).
- [10] W.L.Zhao, L.Gu; Urban Spatial Construction of Modern Landscape Environment- Urban Design of Water System around the City in Guilin. Proceedings of City Planning, 4, 21-30 (2012).
- [11] Overall Urban Planning in Dexing City (2008-2030). The Institute of City Planning Design and Research in Nanjing University, (2009).