Daming Palace Archaeological Site Park Construction Scheme based on Construction

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Abstract—Archaeological site park construction is the protection approach of large site which has the most realistic meaning and operability, in order to reduce the complexity of the construction; this paper puts forward a modeling scheme of Daming Palace archaeological site park based on the 3 d modeling technology. Firstly, it sets up material point model of Archaeological site, and then forms a cultural curve, generates probe side wall and cloud coordinates of cultural point according to cultural curve, finally, generates three-dimensional global image according to the coordinate information. Algorithm simulation results show that the proposed modeling scheme of Daming Palace archaeological site park based on the 3 d technology is effective and has a high the reduction rate.

Index Terms—Archaeological Site Park; 3D Modeling; Palace Archaeological Sites; Cultural Curve

I. INTRODUCTION

Archaeological park has emerged for quite a short time and therefore its concept is still discussed and researched constantly in academia [1]. The author believes that archaeological park should be a public place based on archaeological study and ruins preservation, with the main culture elements carried by the ruins as its exhibition theme and spreading traditional culture as its purpose. Meanwhile, this park may also have functions of public education, cultural transmission and public recreation [2].

As time goes by, these age-old historical and cultural heritages are suffering from considerable damages due to the natural factors such as wind and rain erosion, and the human factors such as the development of tourism. It is necessary to have a closed management and repair to these heritages, and it is a must to save the 3d data in details before it [3]. The surface reconstruction of scattered point cloud is the core problem of the 3 d laser scanning modeling. Surface reconstruction algorithm can be divided into two broad categories: interpolation and approximation method. The obtained surface reconstruction of interpolation method is completely through the original data points, while the approximation method is using sharding linear curved surface or other form of curved surface to approximate the original data point, the obtained reconstruction surface is a approximation of the original set of points. In 1984, Boissonnat proposed the 3 d point set based Delaunay triangular subdivision surface reconstruction algorithm, in 1988, Choi proposed the a series of algorithm which mainly applied to the convex surface reconstruction, in 1992, Hoppe put forward a more general discrete point set surface reconstruction algorithm m1, in 1994, Edelsbrunner put forward using the α−shape shape to construct the directional distance function method, in 1998, Ohlsoonke put forward a fast surface reconstruction algorithm based on discrete points set, in 2002, Gu put forward a kind of 3 d model processing method known as geometric Image (Geometry Image), in 2003, Li Bijun put forward a kind of method which can directly extract the out-of-plane contour information from the scattered point cloud data, and in 2005, Zhang Aiwu, put forward a kind of method of using adaptive sampling to reconstruct the surface of the outdoor scene.

In the aspect of 3d reconstruction algorithm, based on the classic algorithms framework of Markowsky and Wesley, Yan [4] has put up the reconstruction algorithm to improve the efficiency of the reconstruction of the polyhedron. In the process of generating the wire frame model, we use decision tree technology to speed up the production speed of 3d straight line edge; when constructing surface ring, reasonably using the depth information of engineering drawing to decrease the search scope, accelerate the solving process, and improve the efficiency of constructing the correct structure form. JiangTao [5] and others also put forward the wireframe oriented reconstruction algorithm known as polyhedron. According to the reconstruction algorithm of the polyhedron, it requires the input 2 d view only contains the straight line segment, which will remove many common forms from the form cover field; in addition, the practicability of this algorithm is greatly constrained.

In general, in the 3 d virtual modeling algorithm for ancient architecture, there are defects such as the low clarity, needing probe point. Based on the present situation, this paper proposed an improved 3 d modeling algorithm of Daming Palace archaeological site park.

II. RELATED WORK

Archaeological park construction is a preservation mode with Chinese characteristics for heritage culture and the most feasible and practical conservation for large-scale ancient sites in current China. As the first batch of Chinese archaeological parks, Daming Palace National Heritage Park is a useful exploration against this background [6].

The Tang Daming palace was built in the eighth year of zhenguan period in tang dynasty (AD 634), and it lasts
270 years. 17 emperors of 21 in the tang dynasty head the administration inhere, so the Tang Daming Palace was the world's important political activity center. The great palace is located in the chang’an dragon source, it had a large-scale and was imposing at that time, and it was magnificence in architectural art and technology, which means it had reached the high levels of achievement and was praised as the peak work of Chinese palace architecture by architectural historians, the architecture style pioneered by the tang palace become a model of Chinese palace architecture later on. It laid the ancient palace system in Middle East Asia and later on. Also, it has made a great influence for the Ming and qing dynasties’ imperial palaces and the palace building in east Asia such as Japan and Korea. In 1961, the Daming Palace was identified as national key cultural relics protection units.

Time brings a great change to the world, The Daming Palace first experienced the man-made destruction, after it was into ruins and later turned into farmland and village, in the 1930 s, refugees in henan Huang area stranded in xi’an, thus the Daming Palace became refugees gathering slums. Along with the rapid development of urbanization after the reform and open up, the sharpening contradictions between the protection of cultural relics and the development of city, tang palace ruins protection is imminent.

Daming Palace was the most important and magnificent royal palace in Chang’an City, Tang Dynasty (618-907). It was first built in 8th year (634) of Zhenguan reign of Emperor Taizong, re-built in the 2th year (662) of Emperor Gaozong, and destroyed in the first year (904) of Emperor Zhaozong’s Tianyou reign. It survived in the world for 270 years and witnessed the rise and fall of the Tang Dynasty [7]. Archaeological sites and historical data show that, Daming Palace ruins is now located in the northeast of Xi’an and covers an area of approximately 3.26 square kilometers. Besides, its plane surface is cuniform, narrow in north and wide in south. The whole layout of the palace is completely preserved, where the four boundaries of the palace and its 11 gates can be positioned clearly, and the range of East Inner Court and the double city-wall in three directions is specific. According to the exploration of 68 sites, on the ground there still retain over 10 ancient sites bases including Hanyuan Hall, Linde Hall, Chongxuan Gate, Penglai Island, Wangxian Platform and Northeast Corner etc [8].

The preservation of Daming Palace ruins have always been attached importance by governments at all levels. But because it is located in urban districts, the contradictions between ruins protection and urban development, between economic construction and the productions and livings of the masses are very sharp [9]. To promote the harmonious coexistence of ruins protection and local socio-economic development, and further ruins protection and archaeological researches of Daming Palace, the most suitable way is to build Daming Palace ruins into a National Archaeological Park [10].

Tang Daming Palace, country site protection display and demonstration garden, namely archaeological site park construction is a kind of comprehensive and large-scale exploration of Chinese historic preservation in the 21st century. The plan should be established on the view of a global vision, an open presence, a scientific method, a high starting point, a high strengthened input, and a high level construction, making it become a cultural heritage protection and used demonstration project in 21st century which has the world’s advanced level and Chinese characteristics. Before this plan, we first drew up the "tang Daming Palace country site protection and display demonstration garden, namely archaeological site park project proposal", and we held international symposium under government support, extensively solicit the various aspects and expert advice of state administration of cultural heritage, UNESCO, the international council on monuments sites and so on, what’s more, we also held the international competition of concept planning of tang Daming Palace country site protection and display demonstration garden-namely archaeological site park to collect the cultural heritage protection concept from different countries at home and aboard, different regions, and different genres, thus these intelligences and advanced concept can be gathered in Daming Palace. Third, inviting Joe la sola of the international council on monuments sites treasurer jointly formulate overall plan to directly connect the world.

The overall goals and strategies of the planning is highly evaluated by the state administration of cultural heritage and won highly praise and response from the international council on monuments sites. Mr Peja saite, president of international council on monuments sites, praises the plan as a great discovery in the field of international archaeological sites

III. PROPOSED SCHEME

Because the 3 d point cloud model of ancient buildings only contains space coordinate information of the surface station, so it must be through surface reconstructing the corresponding 3 d geometric model to the realize the digital preservation and virtual display of the site. Currently, the meshing of large-scale point cloud data is mainly by triangular subdivision of point cloud. The implementation steps are as follows:

Step 1: using hierarchical clustering algorithm to build clustering tree of point sample data: clustering criterion is the containing point number of point set . is larger than the containing point number of the given biggest clustering node; of Point set is greater than the given maximum limit value ; and then dividing the central point of point set and the corresponding feature vector of the maximum feature value of ’s covariance matrix, in this way, each subdivision is according to the biggest change of the point set, making the features similar point aggregation in a cluster node.

Step 2: estimating the normal for the leaf central node in the cluster tree, namely each cluster node.

Step 3: using the spreading algorithm of minimum spanning tree to consistent normal. We can
approximately consider the maximum point cloud normal of the \( z \) value in the 3 d scanning point cloud as \((0 \ 0 \ 1)^T\), using \( n_{\text{sort}} \) to indicate, starting from this point, using Dijasart shortest path algorithm, establishing the minimum spanning tree. Assuming the normal \( n_n \) of \( p_m \) satisfies \( n_{\text{sort}} \cdot n_n < 0 \), then \( n_n = -n_{\text{sort}} \), otherwise, \( n_n \) remains unchanged.

Step 4: using the normal of cluster node to fix the normal of original node of each cluster.

Step 5: if the result of normal consistent is not enough good, adaptive modification the parameter ncloet of cluster, then back to Step2, until you reach satisfactory result.

But using the normal reconstruction algorithm based on the hierarchical clustering to carry out 3 d virtual reconstruction on the ancient architecture, the result is not ideal, which means there exist defects such as fuzzy and needing many probe point.

The so-called three-dimensional geological modeling (3 d Geosciences Model - ing), is a kind of technology of using computer technology, under 3 d environment, combining the tools such as the space information management, geological interpretation, geological statistics, spatial analysis and forecast, entities content analysis and graphical visualization together, and used for geological analysis, it develops with the continuous development of the earth space information technology, which is a kind of a new branch of science consists of interdisciplinary such as geological exploration, mathematics geology, geophysics, mine surveying, mining geology) of GIS, graphics, and scientific computing visualization, this concept was first put forward by Simon W Houlding in Canada in 1993. Based on the existing problems of hierarchical clustering reconstruction algorithm, the paper proposed the 3 d modeling algorithm based on the culture surface and cloud coordinates.

A. Point and Cultural Curve Model

The proposed 3 d modeling algorithm based on the culture surface and cloud coordinates finally generating the 3 d model which is composed of point cloud; therefore how to use the probe side profile to generate point cloud becomes the core issue of modeling technology. In order to solve this problem, this paper established the probe side's basic elements - "dot" model.

For each point’s information in the 3 d model is the 3 d coordinate and the color of the points, so the point model as shown in figure 1:

Cultural curve is also composed of point. Taking a cultural curve of such a shown curve equation \( f(x, y, z) = 0 \) as an example, its starting point is point1, end point is point2, its mathematical model can be expressed as the set of all points on the curve:

\[
C = \{ \text{point(coord, color)} \mid f(\text{coord}_x, \text{coord}_y, \text{coord}_z) = 0, \ \text{point}_1.x \leq \text{point(coord)}.x \leq \text{point}_2.x \} \tag{1}
\]

For real modeling work, points’ number \( n \) is limited; we just need to sample the points from set according to a certain step length.

![Figure 1. Point model](image)

It can get to know by mathematical model of cultural curve, the job of generating cultural curve mainly includes two parts: one is feature extraction of cultural curve, which expresses the cultural curve equation; the second is calculating coordinates based on cultural curve equation, and sampling, to generate cultural curve.

![Figure 2. Cultural layer curve](image)

The cultural curves in modeling material are all around the profile of the detector probe, we consider that cultural curve are in the plane parallel to the shaft \( x \) or shaft \( y \), namely their \( z \) values are fixed, so the generation of curves can be conducted in a two-dimensional plane firstly, and then converts 2 d coordinates to 3 d coordinates.

B. Feature Extraction of Cultural Curve

Feature extraction of cultural curve is the process of expressing cultural curve equation, namely for curve fitting of known points. This paper uses segmented Bezier curve to fit the culture curve.

For a series points \( V_0, V_1, V_2, \ldots \) to be fitting, if you want to use a Bezier curve \( Q(t) \) to fitting, it needs to calculate the distance of the fitting point to the corresponding point on the Bezier curve, if the distance is within a certain range \( \varepsilon \), the finish fitting work is considered.

For an arbitrary fitting point \( V \), we need to find the corresponding point on the Bezier curve, that is to say we need to estimate an accurate value \( t \). Typically method is to use the chord length parametrization method. In this way, each point can correspond to a value \( t \).
For any given point \( V \), the distance corresponds to the point of the curve is \( dist = \| V - Q(t) \| \). Therefore, the objective of fitting is to minimize the distances of fitting points to the corresponding point on the curve. We use a function \( S \) as a standard for measuring. \( S \) is defined as:

\[
S = \sum_{i=1}^{n} [d_i - Q(u_i)]^2
\]

(2)

where \( d_i \) is the \((x, y)\) coordinates of the fitting point, and \( u_i \) is the associated parameter values of \( d_i \).

We define the deduce process below as:

1. \( P_0 \) and \( P_1 \) is the first and the last control point, so according to the previous conclusion, we can know that they are the first and the last fitting point;
2. \( \hat{t}_1 \) and \( \hat{t}_2 \) is respectively the unit tangent vector of point \( P_0 \) and \( P_1 \);
3. the other two control points \( P_1 \) and \( P_2 \) are:

\[
P_1 = \alpha_1 \hat{t}_1 + P_0
\]

(3)

\[
P_2 = \alpha_2 \hat{t}_2 + P_3
\]

(4)

For a fixed head and end control points Bezier curve, we can change the coordinates of the second and third control point to change the shape of the Bezier curve, and thus the problem can be converted into finding a \( \alpha_1 \) and \( \alpha_2 \) to make the value \( S \) minimum, thus we have the following two equations:

\[
\frac{\partial S}{\partial \alpha_1} = 0
\]

(5)

\[
\frac{\partial S}{\partial \alpha_2} = 0
\]

(6)

Putting formula (2) into formula (2) and (2) to calculate, finally we get the result:

\[
\sum_{i=1}^{n} A_{1,i} \alpha_1 + \sum_{i=1}^{n} A_{2,i} \alpha_2 = \sum_{i=1}^{n} (d_i - (P_0 B_{i,0}^1(u_i) + P_0 B_{i,2}^1(u_i) + P_0 B_{i,2}^1(u_i) + P_0 B_{i,2}^1(u_i))) A_{1,i}
\]

(7)

\[
\sum_{i=1}^{n} A_{1,i} \alpha_1 + \sum_{i=1}^{n} A_{2,i} \alpha_2 = \sum_{i=1}^{n} (d_i - (P_0 B_{i,0}^1(u_i) + P_0 B_{i,2}^1(u_i) + P_0 B_{i,2}^1(u_i) + P_0 B_{i,2}^1(u_i))) A_{2,i}
\]

(8)

In which \( A_{1,i} = \hat{t}_1 B_{i,1}^1(u_i), j = 1, 2 \)

Writing the above equation as

\[
c_1, \alpha_1 + c_2, \alpha_2 = X_1
\]

(9)

\[
c_2, \alpha_1 + c_2, \alpha_2 = X_2
\]

(10)

Using the matrix to express:

\[
\begin{pmatrix} c_{1,0} & c_{1,2} \\ c_{2,1} & c_{2,2} \end{pmatrix} \begin{pmatrix} \alpha_1 \\ \alpha_2 \end{pmatrix} = \begin{pmatrix} X_1 \\ X_2 \end{pmatrix}
\]

(11)

Assuming \( \xi = \begin{pmatrix} c_{1,0} & c_{1,2} \\ c_{2,1} & c_{2,2} \end{pmatrix} = \begin{pmatrix} A_1 \\ C_2 \end{pmatrix} \), \( \tau = \begin{pmatrix} X_1 \\ X_2 \end{pmatrix} \),

then according to Cramer rule, the equation solution is

\[
\alpha_1 = \frac{\det(\xi \tau)}{\det(\xi C_2)}
\]

(12)

\[
\alpha_2 = \frac{\det(C_1 \tau)}{\det(\xi C_2)}
\]

(13)

Finally we can find the eligible \( \alpha_1 \) and \( \alpha_2 \).

C. Generating Probe Side Wall

Due to material limitations, and the most important information of probe side wall is the cultural curve, so we possible think that the four outside walls are all planes in the process, we take the probe side wall on the \( xo z \) flat surface as an example to introduce, and the other walls can be generated under the same method.

Due to the outside wall \( xo z \) is a plane, component content \( y \) satisfy: \( y = 0 \). According to the above method, we can calculate all the space 3-dimensional coordinates data of cultural curve on the wall.

Then we can use linear interpolation to calculate out the other points’ coordinates on the outside wall according to the adjacent two cultural curves. Assume the points’ coordinates of the two curves marked as "1" and "2" are respectively \( \tilde{P}_1, \tilde{P}_2, ..., \tilde{P}_m \) and \( \tilde{P}_{21}, \tilde{P}_{22}, ..., \tilde{P}_{2m} \).

Assume that on the cultural curve "1" and "2", there are \( n \)'s points that have the same \( x \) coordinate, then the coordinates calculation formula of arbitrary point is:

\[
P_{j,m} = P_{i,m} \]

(14)

\[
P_{j,v} = 0
\]

(15)

\[
P_{j,c} = P_{i,c} + \frac{P_{2c} - P_{1c}}{n-1} (j-1)
\]

(16)

In which \( i \) is the integer between 1 and \( m \), \( j \) is the integer between 1 and \( n \). Then we can get the point cloud of the probe side wall.

D. Generating Point Cloud on the Cultural curve

The data structure based on the surface representation is describing object by surface. It includes grid construction (Grids), Shape structure (Shape), facets structure (Facets), Boundary representation (Boundary Representation) and spline function model, etc. In these five kinds of structure, a boundary rule is suitable for representing the object which have regular shape, the other four are for objects with irregular shape. The principle of generating point cloud of cultural surface is similar to point cloud on four walls, but because the culture surface is not a plane, and the boundary curve of
interface is four cultural curves, so there are some differences in generating method.

We can generate all the cultural curves’ 3 d coordinates according to the mentioned method in the previous section, so the generating of the point coordinate on the cultural surface is actually the generating of other points on the surface according to the points’ coordinates on the four boundary curves. This article uses a simple method to generate these points.

Selecting two parallel curve on the $xoz$ plane and $xoz$ plane as the reference edge, as shown in figure 3, in which the curve 1 and 3 is the reference edge. The direction of the arrow in the figure is the process of generating other points on the plane. Specific generation strategy is as follows:

Assuming that the point number of these two reference curves is all $m$, and the point number of the other two curves is $n$, thus for any point $P$ in the plane, assuming that the coordinates is $\tilde{P}_m$, in which $1 < i < m$, $1 < j < n$.

For point $P$, coordinate $x$ is:

$$p_{ijx} = p_{i,k} + \frac{p_{i,n} - p_{i,m}}{n}(j-1)$$  \hspace{1cm} (17)

The coordinate $y$ is:

$$p_{ijy} = p_{i,jy}$$  \hspace{1cm} (18)

The coordinate $z$ is:

$$p_{ijz} = p_{i,k} + \frac{p_{i,n} - p_{i,m}}{n}(j-1)$$  \hspace{1cm} (19)

Figure 3. Culture surface point cloud generation method

After generating points according to this strategy, we need to carry out a curved surface fitting to ensure that the generated points are on the same surface, so that we can carry out the triangulation for the point cloud. In this way, we can get point cloud of cultural surface.

IV. ALGORITHM SIMULATIONS

Spatial data model is the premise and foundation of realizing 3 d display and spatial analysis. In recent years, many scholars have studied the 3 d spatial data model and data structure, the present used various 3 d data structures are applied to different space situation, but the emphasis is different, also there are considerable differences in function. According to Rongxing Li’s research, 3 d geological data model mainly can be divided into surface representation based data structure and body based data structure, as to the deeding of research work, there emerges the hybrid data structure and object-oriented data structure.

In order to verify the application performance of the proposed algorithm in the Daming palace cal site park construction, we carry out the simulation experiments, and get a 3 d virtual model, comparing tit With the 3 d model constructed by using hierarchical clustering based normal reconstructing algorithm as shown in the figure below.

Figure 4. Reconstruction algorithm based on hierarchical clustering method to model diagram

It can be seen from figure 5 that using the proposed 3 d modeling technology to carry out Cultural curve, exploration pastry outwall, point cloud coordinates of cultural surface, and generating the virtual reality 3 d model according to cultural curve, exploration outside wall, point cloud coordinates of cultural surface. Compare figure 4 and figure 5, it is not hard to find out that using the proposed 3 d modeling algorithm based on the culture surface and cloud coordinate shows a better clarity than the normal reconstruction algorithm based on hierarchy clustering.

Figure 5. Based on the model of the cultural layer surface and cloud coordinates Figure

And then carry out the statistic and analysis of the probe point number used by these two algorithms, compare these two number and the comparison results as shown in the figure below.

Figure 6. The probing point number comparison

It can be seen from the fig above, the needed probe point number of the proposed 3 d modeling algorithm
based on the culture surface and cloud coordinates is far less than the normal reconstruction algorithm based on hierarchical clustering.

V. EXPERIMENTAL RESULTS

After using the proposed 3d modeling algorithm based on the culture surface and cloud coordinate to carry out 3d restore of Daming Palace archaeological site, we can start the greening construction on the site. But for the greening construction of Daming Palace archaeological site park, we must consider the following several factors.

A. Archaeological Green Land

In regard to the ancient sites with rammed earth station bases now on the ground, before the implementation of the earth-covered masonry protection engineering method, in order to prevent such ancient sites from natural and man-made destructions, an earth cover of about 1 meter deep may be made according to the current situation of the sites. Next, on the earth cover, shallow-roots and drought-enduring small-sized shrubs or grasses may be planted. This will not only beautify both the ancient sites and the environments, but also prevent the soil and water from losing. As a result, the ruins can be preserved. For those ancient sites that have adopted the earth-covered masonry protection engineering method, if the surface is completely covered with masonry, (such as Linde Hall), the site can also be made green with turf that is drought-enduring and slow-growing. Otherwise, the exhibition effect of the site will be dampened. Fig 7 is Linde Hall and surrounding greening.

B. Environmental Green Space

Daming Palace is an architectural complex of palaces. In Tang Dynasty, there should be a larger area of courtyards and green lands, and architectures account for only a small portion of the entire palace area. Together with the natural and man-made destructions for over a thousand years, the preserved building bases take only a small proportion of the total area. Therefore, a large area of green spaces that serve as the major space for public amusement and leisure is a must for the construction of the Daming Palace National Heritage Park.

The functions of the green space system in the archaeological park are mainly to improve the existing urban landscape and environmental quality, and on this basis further highlight the ancient ruins’ stateliness and solemnness, and create a cultural atmosphere there. Therefore, the planning and layout of the green space system and selection of tree species should be treated cautiously.

In terms of the green spaces closely surrounding the ancient sites, to highlight the sites’ majesty, in the close ranges (especially areas in front of the ancient site or right-ahead areas), the layout of trees should be sparse and in a irregular point-shaped distribution. Trees should not be too high; their crowns should not be too large or too sparse. The evergreen species with a longer growth cycle may be chosen to form a visual corridor in the normal angle so as to highlight the dominant position of the ancient sites. For tree species, we can basically select the relevant species which according to historical records had been planted in Daming Palace, as well as traditional native tree species which are suitable for local growth and easy to trim. Under the trees, drought-tolerant turfs with a longer growing season can be selected and planted, and the winter evergreen and species with a slow growth but not flowering wood can also be planted. Picture 8 is the surrounding green spaces of Chongxuan Gate.

In terms of the surrounding green spaces distant from the ancient sites, trees with a good shape can be planted. Likewise, traditional native tree species should account for a dominant portion, and a certain proportion of evergreen species should also be planted. Under the trees, it is better to plant more shrubs and a small amount of drought-tolerant and luxuriant turfs. For shrubs, we may choose those drought-enduring species with evergreen leaves. Fig 9 is the greening at one corner of the park.

VI. CONCLUSIONS

The archaeological park construction is a new thing. It emerged in recent years and is explored constantly. Due to its complexity and diversity, it will become mature as soon as possible with collective coordination from and further researches by and strict supervisions of many departments and fields. In building a good archaeological park, there are few mature experiences to draw. Moreover,
each ruins park has unique historical connotation and geographical features of its own. How can we display the historical connotation and cultural elements of the ruins park completely and abundantly through planning, designing and construction? This is therefore an important mission assigned by history and society to the park builders.

Daming Palace Ruins share rich historical connotation and diverse cultural elements. It not only carries the cultural heritage of Tang dynasty, but also covers multicultural elements such as modern industrial heritage, education and culture, refugees’ migration, and the history of urban development. Therefore, the construction of the Daming Palace National Heritage Park becomes all the more complex and arduous. Builders should make extensive collection of the views of the masses and on this basis organize multifaceted experts to study and discuss. In addition, builders should work out a comprehensive and forward-looking program on planning, designing and construction with unique styles of their own. And moreover, builders should scientifically run and manage the archaeological park strictly in accordance with the laws and regulations on cultural relics to avoid leaving the historical regrets.

The paper proposed the modeling scheme of Daming palace l Site Park based on 3 d modeling technology. Experimental simulation results show that the proposed 3 d modeling technology applies well in the modeling of Daming palace cal Site Park, and the reduction rate is higher. Daming palace ich historical connotation and diverse cultural element, it not only carries the journal of heritage of Tang diversity, but also includes multicultural elements such as the industrial heritage protection, educational culture, refugee migration and urban development history. Therefore, the construction of Daming palace archeological Site Park has more complexity and difficulty, and using the proposed scheme can greatly reduce workload and improve work efficiency.

REFERENCE

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