

A Feasibility Property Development and Finance Study of Building up Huaxi Photography Base

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Abstract: Property development is the process by which buildings are erected for occupation or for sale or investment. It is much like any other economical activities; it acts to satisfy wants with the application of scarce resources. A simplified approach involving property development from inception to completion would distinguish a number of stages. And there will appear some risks of finance during one project's building process. Before we start a project, we shall pay more attention to the feasibility study; we shall identify the whole project. The authors of this article analyze a project, which is called "Huaxi Photography Base". Knowing that knowledge of property development and finance, we can use them for reference in our projects implement, then let this kind of study to realize the success of one project.

Key Words: Project, Property development, Finance

*When we want a building,
We should first measure the site, then make the model;
When we can see the contour of this building,
We should do the cost evaluation;
If we found it overspend,
We only can change those models.
Few could success, and finally gave up halfway
Shall we continue?*

---- William Shakespeare, Henry IV, Part 2

1. Project Introduction



In November 2005, Huaxi government was introduced a project which is called "Dancing of the Earth", this is a dancing competition to show the minorities of China especially the West part of China. And following the holding of this competition (every one year will be hold in Huaxi, and continue to be hold in Huaxi for 10 years), and in order to usher the colourful folk arts, Huaxi People's Government decided to build a base which can show people all over the world about the local dances and some related cultural centre. This base, which includes:

Gross Area:

36000 m²

Gross Construction Area	3000 m ²
Total Investment Estimate	37 million RMB

After building up this base of photography, it can provide not only a place which can screen some movies about dance, folk arts, but also can provide people a huge sight for disporting. And as it planned, this base will be the biggest one around China.

2. Site Appraisal and Market Research.

2.1 Site Appraisal

Each construction project will need a place (site) to build, and it is very important to do the site appraisal. In site identification there needs to be a strategy defining the aims, nature and area of the search (*John Wiley, 2004*). To this project, as it planned, this project will be built in Yanzi Yan, Wushan Village, Jiuan, Huaxi. Jiuan is an administrative town of Huaxi District, it is located on the north of Huaxi, and the traffic is very convenient from Huaxi to Jiuan. The ground and underground surveying had been done by the professional group. It has been proved that the erection of building there is safely and firmly. The hypsography condition of this site is plain on the whole and the average height difference of the ground is about 8 metres. Thus, this site has advantages for constructing this base.

The branch river of Huaxi River just goes to the west of this site, and it is very good to take use of the natural resources to create landscaping and waterscape, so that it can be very good for screening and photographing. Because Wushan Village is one part of Jiuan town, the water supply pipes and electricity cables are all ready for this area. And the drainage systems, telecommunication are also be ready for the base constructing. The main pollution source in this area will mostly be the waste from screening and visiting, such as the plastic and film waste. The pollution sources disposal will be taken by the district waste pipes and waste collect disposal. The local government provides special policies in order to accelerate the construction, including tax-free policies, reduce land cost, and provide subsidies.

2.2 Market Potential

Because Huaxi District is one of the cultural area also a tourist area of Guiyang city, and there are more than 80 sights around it such as Huaxi Park, Qingyan Ancient County. And there are some universities such as Guizhou University, Guizhou Minority College and the people who live there are also multiracial. It has the advantages of cultural, so it is very good to develop the tourism. And in China there are three "Golden Week" holidays in one year, those people will come to Huaxi to see natural scenery. During the last "National Golden Week" holiday, the number of people visiting Huaxi up to all was over 100 thousand in one week and the total income was about 600 thousand RMB (*Jinqian Online newspaper, October, 8th*)

Approximate Estimate the Market Potential

Introducing the statistical data in to the following formula:

$$M = N \times Q \times P \text{ (Isaac. D, 1998, p46)}$$

N --- Potential visitors per year: 350,000 ($3 \times 100,000 + 50,000$)

Q --- Per person's ticket: 1 time (*each person will buy his/her own ticket*)

P --- Average Selling Price of the gate (estimate):
 ¥10/person (nowadays the price for Huaxi Park is ¥6/person)

Total is: $M = 350,000 \times ¥10 = ¥3,500,000$

And follow the development of the project and the whole tourism of Huaxi, there are more and more people who will come to visit those places of interests here and pay their “bills”. (*Jinqian Online newspaper, 2001: 50 thousand; 2003:80 thousand; 2005: 100 thousand. The rise ratio is 15% per year*)

3. Investment Appraisal.

The first period of construction will be contain basal building such as the ground, the virescence and some main buildings. And the total year will be 2, the first period will take about 1 year to build them.

Table 1. GANTT CHART

No	Tasks	2005					2006						
		Aug	Sep	Oct	Nov	Dec	Jan	Feb	Apr	May	Aug	Dec	
1	Detailed Planning	■											
2	Project Approved		■										
3	Financing		■										
4	Site Procurement				■								
5	Ground and Virescence				■								
6	Construct main Buildings					■							
7	Finish the first period's construction									■			
8	Check and accept										■		
9	Continuous construction											■	■

3.1 Investment and income estimate

The total investment of the project is estimated about ¥370,000,000

The total visiting flux per year is estimated about 350,000

The income per year of the project is estimated about ¥3,500,000 (*according to those three “Golden Week” Holidays’ income*)

Table 2. IMCOME FORECAST 1

	Golden Week 1	Golden Week 2	Golden Week 3	Others
Visiting flux	100,000	100,000	100,000	50,000
Tickets (per person)	¥10	¥10	¥10	¥10
Total (per)	¥1,000,000	¥1,000,000	¥1,000,000	¥500,000
Total (all)	¥3,500,000			

According to the “rise ratio” each golden week per year that mentioned before, then here we can forecast the second income to this project.

Table 3. IMCOME FORECAST 2

	Golden Week 1	Golden Week 2	Golden Week 3	Others
Visiting flux	100,000×15%	100,000×15%	100,000×15%	50,000
Tickets (per person)	¥10	¥10	¥10	¥10
Total (per)	¥1,150,000	¥1,150,000	¥1,150,000	¥500,000
Total (all)	¥3,950,000			

3.2 Cash Flow Analysis

Darlow (1988) uses printouts from bespoke computer programs. This is all very well but although one can develop elaborate answers relating to changes in inputs it is not possible to analyze changes as they occur; a spreadsheet is needed for this. The argument of using discounted cash flows (DCF) approaches against traditional valuations is extensive (*William, B. 2003*). Cash flows can assist in the calculation of costs over the development period. The basis residual method is unaltered but the cashflow approach gives a more detailed calculation of the scheme's total costs and thus the finance costs.

The development costs include all the costs to complete the development such as the building costs and ancillary costs related to landscaping and servicing. In addition, costs of the fees, funding costs and the developers' profit will also need to be included. The sum available for land acquisition is at the completion of the development as contained in the residual valuation and includes the costs of borrowing the amount for acquisition and throughout the development period. (PDF, 2005, Chapter 4)

To this project, we can get very clear picture according to the cash flow analysis.

Table 4. CASH FLOW FORECAST FOR PROFIT

<i>DEVELOPMENT ANALYSIS</i>					
Expenditure					
Gross Construction Area	3000 m ²				
1. Development costs					
2. Ground unkmit	36000m ² @ ¥10/m ²				¥360,000
3. Building Costs	3000m ² @ ¥482/m ²				¥1,446,000
Fees: Architect @ 15.00% of cost				¥216,900	
Local authority @ 3.0% of cost				¥43,380	
Contingencies @ 5.0% of cost				¥72,300	
Virescence	20000m ² @ ¥5/m ²				¥100,000
Total expenditure					¥2,238,580
Income					
	<i>G Week 1</i>	<i>G Week 2</i>	<i>G Week 3</i>	<i>Others</i>	TOTAL
Sale tickets	¥1,000,000	¥1,000,000	¥1,000,000	¥500,000	
Sale Tax 0.03	¥30,000	¥30,000	¥30,000	¥15,000	
Total Net Income	¥970,000	¥970,000	¥970,000	¥485,000	¥3,395,000
Balance Developer's Profit					¥1,156,420
Balance available for profit at the end of the project					¥1,156,420

Financial Index Analysis

NPV of the project

Total Costs	2,238,580
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Total Income	3,395,000
Total Income – Total Costs	1,156,420
Discount Rate	5.17%
NPV	¥1,096,633.09

Profitability Index of the Project

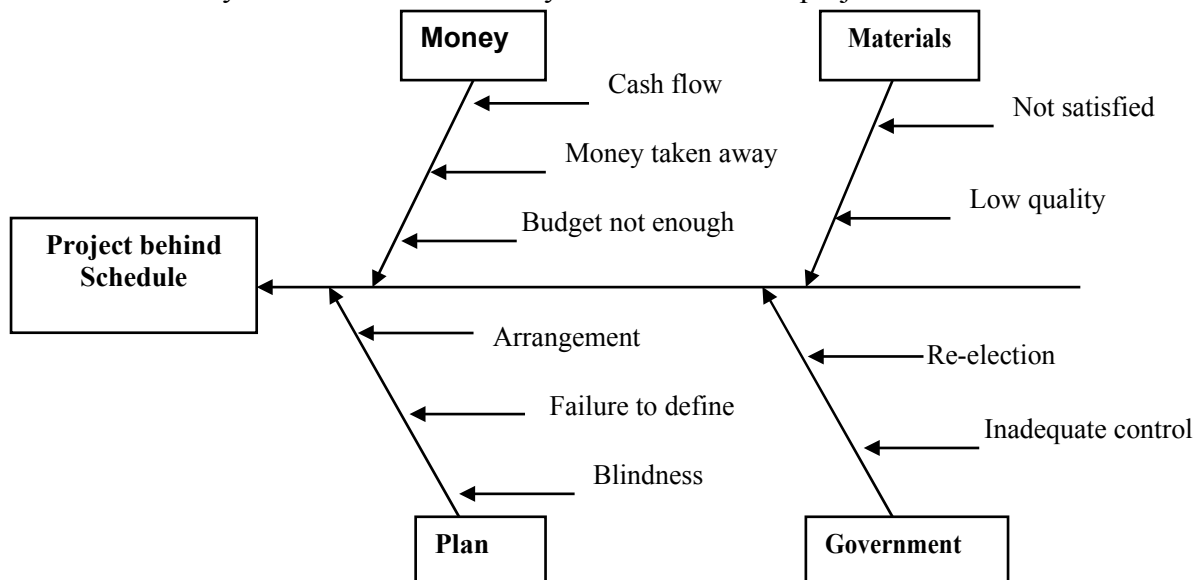
NPV	1,096,633
Total Costs	2,238,580
PI	104.1%

Since the NPV>0, PI >1, the site is rewarding and the project is available for investment.

IRR of this project	
Total Costs	-2,238,580
Total Income	3,395,000
IRR	51.7%

4. Risk Analysis

Before took this project, Huaxi government also did some projects about construction, and there was one failed because of many reasons, the most important one was they do not do the risks analysis when took that project.



From this diagram we can see there are many reasons may cause a project behind schedule. Project risk management plays a very important role in a project. And there are many risk sources in a project, meanwhile they are not making an effect isolated, of course they are interlinked with each other. So, before we start a project, we should

make a good project plan, and in this plan, we should identify the risks that could affect the whole project and then to define a framework, then we should evaluate the risks and set the acceptable levels of a risk, then take our advantages to avoid or minimize the loss. (*Analysis about the project failures of Huaxi Public Square, Henry, 2004*)

And to this project, it is a very distinct one that different from others. It is a **design and build** instead of the **design then build** one. This kind of construction will cost more money during construction so that it will let the risk be increased.

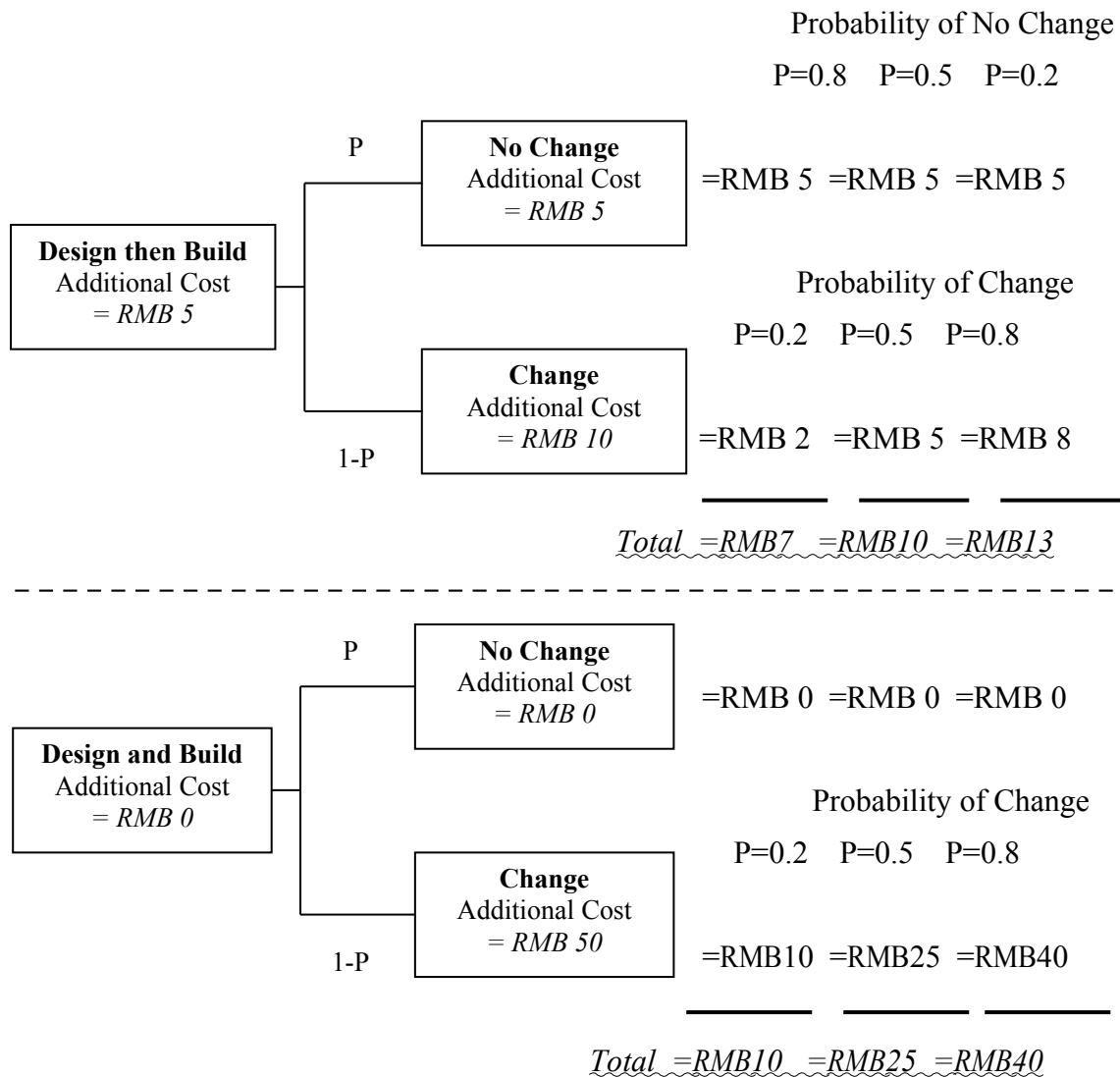


Table 5 Decision Tree

From these two diagrams we can see, if we take the **design then build** construction type, then the additional cost will be quite low, from the first diagram, if we change the original design (P=0.8, 1-P=0.2), then the additional cost will be RMB 2, and the whole budget will be 2+5=RMB 7. On the contrary, if we change one project from design then build to **design and build**, the additional cost will be more

higher, from the second diagram, if we change the original design ($P=0.8$, $1-P=0.2$), then the additional cost will be RMB 10, and the whole budget will be $0+10=\text{RMB } 10$. And Huaxi government should do the risks analysis to low down those risks when operating this construction otherwise it will bring another failure to the financial and even to the whole citizens.

There are a great number of risks during the construction of one project. To this project, there are some such as the business risks, financing risks, law risks, environmental risks and so on. The total investment will be highly up to 37 million RMB, it is the biggest one till now operated in Huaxi. The financing risks will be the most important. And another one will be the laws, which will be the ticket price making process. If the price is too low, then the developer will not get their investment back within the time, on the contrary, if the price is too high, then few people will pay those bills to visit or filming.

5. Sensitivity Analysis

The so-called sensitivity analysis is to realize the incidence that caused by one or more uncertain elements. And then make the financial adjustment according to those external changes (Lin, 2001).

The following estimate is calculated with a variable combination of ‘total cost’ and ‘total income’.

Table 6 Sensitivity Testing

Variable	Optimistic		Expected		Pessimistic	
Total Cost	2,014,722	-10%	2,126,651	-5%	2,350,509	5%
Total Income	3,734,500	10%	3,564,750	5%	3,225,250	-5%
<i>EFFECT To</i>						
IRR	85.30%		67.62%		37.21%	

Probability analysis of total cost and total income

Probability of Total Cost

	Optimistic	Expected	Pessimistic
Total Costs (a)	-10.00%	-5.00%	5.00%
Probability (b%)	15%	65%	35%
Chance (b)	0.15	0.65	0.35
Expected Outcome (a x b)	-1.50%	-3.25%	1.75%

The weighted probability of total cost:

$$= -1.50\% + (-3.25\%) + 1.75\% = -3.00\%$$

Probability of Total Income

	Optimistic	Expected	Pessimistic
Total Income (a)	10.00%	5.00%	-5.00%
Probability (b%)	15%	65%	35%

Chance	(b)	0.15	0.65	0.35
Expected Outcome	(a x b)	1.50%	3.25%	-1.75%

The weighted probability of total income

$$= 1.50\% + 3.25\% + (-1.75\%) = + 3.00\%$$

bring those numbers to:

$$\text{Probability of Total Cost} = -3.00\%$$

$$\text{Probability of Total Income} = + 3.00\%$$

Go back to the testing table:

Testing After Probability Estimate		
Variable		
Total Costs	2,171,423	-3.00%
Total Income	3,496,850	+3.00%
EFFECT To		
IRR	61.03%	

The accuracy of testing has improved by the probability estimate; the results show a relative concentrative point that the change most likely occurs.

6. Conclusion

From above, researches which concerned with qualitative and quantitative has been proved that the project's advantages for investment and for constructing. The site of Huaxi has been named as the cultural and art district of Guiyang city, and there will hold at least 2 national festivals every year. Another issue will be those three "Golden Week" holiday, people all over the country and even all over the world will come to visit Huaxi increasingly. The traffic is very convenient from Guiyang to Huaxi, the public traffic system; the tourism system will be more perfect according to the policies made by government. Since that, more and more people will come to this place, and those 80 sights can be connected by a line and the market of tourism will be huger than before.

But there are still some problems should be pay more attention. First will be the financing risks. When doing the property development and finance, government should play an important role during the process, use the financial lever to control it. Although the cash flow analysis and the sensitivity analysis can offer some information to this project, people still should pay attention the contingencies may happen during the process of construction, and then project management theories will be very useful.

Second will be the government. When changing government officers, people should pay more attention to avoid the risks which bring from those actions. And after the first construction period was finished, tickets fare will be another important issue.

It should be made according to the market investigation and the people who intend to visit the base. Higher or lower may cause great disadvantages to the whole running of this base.

Property development is the process by which buildings are erected for occupation or for sale or investment. It is much like any other economic activity, it acts to satisfy wants with the application of scarce resources. And the investment management study is very important and useful. Following the development of Chinese economies and especially the entered into WTO of China, master new ideas of property development and finance, borrow the advanced experience to guide the financial work, it will be much more key point to make sure project's success, especially about the financial, and also to improve the abilities to be competed. To those projects which are in west of China, it is even more important to pay attention during the policy of developing the west China.

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资产评估可行性分析—花溪摄影基地项目

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摘要： 地产开发资产评估分析是指在建设项目融资或销售或投资之前进行的一个评估过程。它与其他经济活动一样，其目的是为了有限的资金得到满意的应用，发挥其最大能动性。所以资产评估可行性分析是很重要的。在一个项目建造过程期间，或多或少将出现资金方面的风险。在我们开始项目之前，应该要更多注意到对资产可行性研究的分析上，使我们能够辨认清整体项目的资产情况。本文作者以“花溪摄影基地”项目进行资产可行性分析。知晓地产开发和资产知识，我们可以有效地使用他们为我们提供项目可行性参考，以确保一个项目的成功。

关键词： 项目，资产评估，资产分析，融资

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