

**Public-Private Partnerships in Urban Redevelopment and Renewal
projects: a study on the profitability of the investment with a focus
on the CityLife case**

Ai miei genitori, perché mi avete insegnato a volare. Vi sono immensamente grata, vi
voglio bene.

A Francesco, che sei cresciuto insieme a me, che sei una parte di me, perché sei la mia
ancora di salvezza, il mio rifugio più bello e molto, molto di più.

A Caterina, perché tu sei qui da sempre e per sempre.

A Condominio Bligny, perché abbiamo attraversato tante tempeste, ma anche preso il
sole nelle spiagge più belle.

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INTRODUCTION

The following work is focused on the topic of urban renewal and redevelopment projects. In particular, they will be analysed in the light of Public-Private Partnerships (PPPs). The study of the profitability, both in social and economic terms, of these investments for the stakeholders involved will be the aim of this thesis.

This topic is very relevant for everyone who lives in big to medium sized cities, which are nowadays undergoing different, important changes. These changes are especially pushed by the shift in all modern societies of most social classes towards becoming creative classes. This means that, in the urban space, the final result will be the creation of groups of individuals who are highly skilled and professional. Consequently, the population and governments are increasingly more interested in addressing issues that once were not at the core of urban development, such as sustainability. In fact, in modern urban projects, green spaces are at the centre of the discussion, as well as sustainable building, social housing, etc. Nonetheless, profitability remains the other core aspect of an urban regeneration and when two very different parties like a private and a public one interact in this context, it may be very difficult to balance everything.

In particular, the research question for this thesis is the following: Are urban redevelopment projects involving a private and public partnership profitable? Are they beneficial for the city they are developed for? These questions have partially been addressed in the literature, but there is no precise framework to address the topic as described above. The aim of this study is therefore to perform a scenario analysis on a relevant business case, the CityLife project in Milan, to demonstrate that the method and

conclusions that are generated can be generalized to the broader scope of these type of urban mega projects.

This work will therefore be developed starting from an analysis of the literature regarding the creative class and creative urban planning, which are the ideological basis of the changes that permeate the modern city and permit urban renewal projects and the urbanization process to have the characteristics that will be described in this work. Subsequently, the definition of PPPs and their main features will be displayed for an overview of the political and economic instrument through which the urbanization process will be analysed later in the work. At the end of this part, a brief insight into previous literature will be provided, following the conclusion that there is a lack of studies focused on the analysis of PPPs in the light of urban renewal projects and especially of ones characterised by a more quantitative view. This is the result of big limitations that can be encountered in the definition of a precise mathematical model for these projects, which should be case-specific. Therefore, this work might be of high use for the filling of a knowledge gap that is practically present.

The second and third chapter are the Methodology and Data Analysis ones, thus uniquely related to the development of the business case which has been chosen for the purpose of this study. At the beginning of the Methodology chapter, the reasons behind the choice of the specific business case of the CityLife neighbourhood have been explained, along with its main characteristics. In the second part of the chapter, the Methodology applied for the Data Analysis part, meaning the application of the scenario case-by-case analysis, has been explained. Regarding instead the Data Analysis chapter, first it has been explained which are the data sources that have been used. Subsequently, the scenario analysis has been developed and explained along with all the related variations in the data.

The fourth chapter is the Discussion one. Here all the scenarios have been evaluated, both from a quantitative and qualitative point of view. In fact, as it will be explained later during the development of this study, it is important for this kind of analysis to be discussed in both these ways to be actually complete. Therefore, in this chapter, a comparison among the scenarios and an acknowledgment of the limitations of the study will be offered. In particular, a deep dive analysis on the different interests and roles the two parties of the PPP have has been performed, as this is a key point for the understanding of PPPs in urban renewal/redevelopment.

The fifth chapter, the Conclusion one, provides for a final observation of all the findings coming from the business case, with the purpose of giving a final answer to the research question. Here the results are generalized and it is concluded that this study is relevant for the purpose of the initial research question, as it provides, through the scenario analysis developed, the possibility to have a general profitability profile of the business case's project. Moreover, even if the scenarios can change case by case, it is possible to conclude that, given the absence in the literature of a more precise model to apply, by changing the numbers and the variables as needed, this framework can be applied to any other case in which a PPP is developed for an urban renewal project in a big to medium sized city. This method of analysis surely provides the developers with a broad overview on the possible balance points they can find between profitability and more social measures. In fact, assuming that they have the capabilities to do so, by developing the scenarios they need and after analysing them, members of a PPP can choose the best deal for them and the city in a tactical and strategical way.

1.LITERATURE REVIEW

1.1 Urban renewal in the Creative City

1.1.1 The Creative class

According to Krueger and Buckingham (2012), people in powerful positions in the government of cities have always tried to attract talent and investment in multiple ways. Cities are nowadays facing huge periods of transition, because according to Landry and Bianchini (1995), "old industries are disappearing, as value-added is created less through what we manufacture and more through the application of new knowledge". What is therefore valued more in the modern world is a certain set of soft skills, flexibility, networking... all of this can be summarized by the word "creativity", which is the building block of innovation. In this context, knowledge, creativity and innovation are fundamental for the development of the world economy and for the development of a city in particular.

The American economist Richard Florida first created the concept of "creative class" as a driver of regional economic growth. The main idea for him is that diversity and creativity are the bases of innovation and regional and national growth. Looking in particular at cities, since the old ages they have been centres of diversity, creativity and innovation. However, scholars before Florida generally believed that the drivers of these centre's development were only clusters of firms and industries, as Porter and Marshall's theories on clusters used to indicate. On the contrary of what these previous scholars assert, Florida states that it is fundamentally true that the concentration of a community in a certain specific place is an important factor, but this becomes a more social, rather than economical aspect. Consequently, he believes that the clustering of firms happens

according to and following the location of talented people, rather than the presence of infrastructures, raw materials, resources... A Nobel-prize-winning economist, Robert Lucas, also stated that the clustering of human capital was fundamental for regional economic development and called this a "Jane Jacobs effect". Moreover, he stated that "a city is simply a collection of factors of production – capital people and land".

In fact, according to the studies conducted by Florida and especially the different focus groups he made, people were not choosing their jobs location according to where jobs were present in relevant number and quality. Rather, they were deciding to locate in places in which they perceived inclusiveness, tolerance and diverseness in the social and economic life of the region. These individuals can be considered part of the so-called "creative class" and are defined by Florida (2003) as people who "engage in work whose function is to create meaningful new forms [...] Members of this super-creative core produce new forms or designs that are readily transferable and broadly useful, such as designing a product that can be widely made, sold and used; coming up with a theorem or strategy that can be applied in many cases or composing music that can be performed again and again". Examples of these types of professionals are: professors, engineers, artists, architects, editors, opinion-makers... Along with this core groups there is the one of the "creative professionals", who perform knowledge-based works, such as financial services, management, the high-tech legal and health-care industry. All these occupations allow people to think a lot during their daily tasks and therefore by definition usually require workers who have a higher education diploma.

The relevant consequence of this theory is that the creation of a pool of talented people and becoming a creative centre will for sure be a strong competitive advantage base for a city that wants to grow and prosper. In

fact, “the creative centre enables the creative class to reflect and reinforce their identity as creative people, pursue working achievements that they choose, and have access to their lifestyle amenities” (Krueger and Buckingham, 2012). Moreover, according to scholars, there is a general world movement of all classes towards becoming creative ones. Therefore, cities should become Creative Cities, which, as defined by Landry (1995), are urban centres that are permeated with a culture of creativity, have their own personality and brand and aim at creating satisfying life conditions for their citizens. In particular, the ‘authenticity’ of a city is very important, because it is the branding factor which will attract people. In conclusion, on a more theoretical point of view, a creative city should possess Florida’s 3T – Technology, Talent, Tolerance – to truly attract the creative class and consequently power economic growth. On a practical point of view instead, a city should engage in creative planning to reach these goals.

1.1.2 Creative Planning

According to Krueger and Buckingham (2012), “creative planning is horizontal, people-centred and draws upon local distinctiveness”. Through creative planning a city can practically show its levels of creativity and innovation by addressing urban problems in a new, integrated and profitable way. Landry and Bianchini (1995) further develop these ideas by listing some pre-conditions for a city to become a creative one. These include:

- Set indicators of cost-efficiency which are suitable for assessing investment decisions in urban projects;
- Incentivize people to become more creative by encouraging experimentation;
- Believe in the contribution of immigrants;

- Use events or organizations to create the opportunity for creative people to meet and share knowledge;
- Balance a cosmopolitan attitude with the attachment to local cultural roots;
- Develop creative spaces which can be owned and lived by the creative class;
- Rethink how leadership in the urban context is exercised and by whom;
- Rethink the city in a greener way;

The points raised by these two scholars seem the most obvious, but it is actually very difficult for a city to practically exercise all of this and more at the same time. Two very important observations for the scope of this project regard the sustainable/green city topic and the rethinking urban leadership/management one, which will be discussed in the next section 1.2. Another fundamental point is related to setting the correct indicators of cost-efficiency. In fact, this is the main issue that will be discussed in the Methodology chapter for the development of the Data Analysis part for the business case that will be presented in this work.

In particular, coming back to the management of cities topic, it can be assumed from what explained until now that creative cities prosper because creative people attracted by the social and working environment decide to establish there and work in private companies. Nonetheless, usually it is the public sector's job to actively manage the city and therefore in this case attract private sector parties, who could stimulate capital accumulation. In fact, companies and firms may for sure have an interest in establishing permanently in a city with a good pool of human capital and thus may want to collaborate with the public sector to be able to access this resource. Collaborations between these two very different types of players in the

development of urban projects of renewal is known as Public-Private-Partnership (PPP).

1.2 Urban Renewal projects and the urbanization process

The reorganization and modification of urban spaces - especially old and misused ones - is one of the most common tools used by creative cities trying to gain authenticity and branding. In particular, these projects mostly aim at inverting the process of industrialization of the urban space which has characterised most cities in the last decades. In particular, urban renewal can be defined in different ways, but for the purpose of this study, it is useful to address the idea given by Oregon City's website:

"It is a method of economically revitalizing areas of 'blight' through public investments that stimulate private development. Examples of blight include buildings that are unsafe or unfit for occupancy, inadequate streets, or environmentally contaminated areas. Due to these conditions, private real estate developers, property owners or business owners are unable to generate a sufficient profit on potential development in the area. As a result, private investment stalls and the blighted conditions remain"

Urban renewal is often confused with urban regeneration, which is instead defined by the Guardian as: "the attempt to reverse that decline by both improving the physical structure, and, more importantly and elusively, the economy of those areas. In all regeneration programmes, public money is used as an attempt to pump prime private investment into an area". It is therefore clear that urban regeneration has a broader scope than urban renewal, which is instead more focused on the mere improvement of an area from the physical point of view. Of course this does not mean that one excludes the other and often projects only having an urban renewal

intervention in scope are also seeking in the long term, if the project proves successful, the advantages of urban regeneration which can easily be prompted.

In general, the entire urbanistic mechanism relies completely on the Public Administration (PA) which is the party having the exclusive right to build in the city. This holds almost everywhere in the world. In fact, the private party must always ask for the public one's permission to access this right in the context of one precise project. Therefore, the PA has the power to provide with a building permit or not. This building permit can be considered as a controlling mechanism used by the PA to make sure the private party respects some constraints on the project which may be fundamental for its final definition. In Italy for example, these constraints can be found in the Integrated Intervention Plan or PII (*Piano Integrato di Intervento*) which is a very powerful instrument for the PA and will be described in detail in Chapter 2. In general, the PII is the core of a renewal project and the tool through which the PA grants some of its powers momentarily. Therefore, this document dictates the main guidelines and constraints to the project. Some of them are: intended use of the land, maximum volumes to be built, urbanization taxes to be paid to the Municipality... Both the private party's project idea and execution of the project may respect all of these to be correctly forwarded.

As soon as the project is approved and started, the private party pays urbanization taxes (in Italy they are called *oneri di urbanizzazione*) to the Municipality, according to what is defined in the PII. These taxes are calculated according to some fixed basis defined by the Municipality itself and then used as investment basis by the PA for the financialization of other public projects, such as building new schools, renovation of public streets, lighting infrastructure... It can be easily deducted that urbanization taxes

are very important for the development of a city and therefore may be an important incentive for the Municipality to engage in these projects. As anticipated, a deeper overview on PIIs and their characteristics will be provided during the study of the case.

1.3 Public-Private-Partnerships

1.3.1 Definition

Usually the collaboration between public and private actors in urban renewal projects happens in the form of partnerships typically known in the literature as Public-Private-Partnerships (PPPs). There is no precise definition of Public Private Partnerships in the literature, but Poggesi (2007) provides a good general description of them: “ ‘Public-private partnership’ (PPP) is generally used with reference to any type of operational agreement based on mutual commitments and responsibilities between public bodies and partners that operate outside the public sectors”.

In particular, it is very interesting the point of view of Taşan-Kok (2009), who believes that PPPs can even be considered as new forms of governance. In these regards, the scholar defines governance as “a process of coordinating political decision-making as well as the actors in a particular institutional context to attain appropriate goals that have been discussed and collectively defined”. In this particular case, PPPs are representative of ‘governance beyond the state’, meaning that not only the public party is involved, but also the private one, which has a relevant role in the relationship too. The need for cities to involve in this type of governance form is rooted in the spreading suspect, reported by Stephenson (1991), that the issues a city must face can not be solved by the public government on its own. Moreover, Taşan-Kok’s idea perfectly combines with what

Krueger and Buckingham (2012) state about creative planning. In fact, according to the scholars, “creative city planning requires a form of governance that is inclusive and breaks down the silos constraining innovative thinking and action”.

Stephenson (1991) takes a more practical point of view for the definition of PPPs and states that they usually have been used in cities belonging to communities facing the strong impact of different trends of the time in which they were living. In fact, one of the most secure methods to solve a deteriorating situation is the attraction of new capital and in cities the easiest way to do so is to tempt the private sector into investing. Public-Private Partnerships are a way to institutionalize such an involvement. In general, coming back at what has been reported in Poggesi (2007), the European Commission in 2004 has defined four main characteristics for PPPs to be defined as such:

- Long-term relationship;
- Funding of the project through mainly private channels, although public ones may be used to help as well;
- Important role of the economic, thus the private, party;
- Shift of the risks usually proper of the public sector party to the private sector one.

1.3.2 Motives

The reasons behind the creation of PPPs should be explored by deep diving the different points of view of the two parties involved.

First of all, the public party, which in this case is usually the Municipality of the City, may wish not to pursue such a type of project alone. In fact, local governments may want to create a capital accumulation occasion, which in turn may result in positive, cascading effects on the entire urban area. One

of these effects is the branding one: a successful renewal project involving prestigious private partners and having an international voice can be a perfect marketing campaign for the city. This aspect, as previously noted, in turn may be very important in the creative city process. The ending result can therefore be the creation of a strong and permanent competitive advantage.

While the public actors' motives seem to be very clear and immediate to understand, the ones of the private player are sometimes more subtle and variously defined. The biggest motive behind the involvement of a private party in renewal projects is the fact that she is working in the real estate industry. This for obvious reasons requires her to involve in these types of transactions. The second, biggest motive that can be identified is financialization. In Mosciaro (2020) financialization is defined as "transformations reliant on financial intermediation and engineering, assuming the infiltration of finance-led practices in the most varied sectors". The real estate sector is among the ones which have been mostly hit by financialization. In this case according to the scholar, there are three patterns this trend can assume:

- 1) The financialization of construction companies, meaning in a non-financial sector;
- 2) Financialization of everyday life as closely connected to financial markets;
- 3) Direct involvement of finance/insurance companies in the real estate sector.

The second and the third trends were born because businessman during the past decades understood that real estate is worth a lot as a financial asset and nowadays this practice has reached its peak. However, for its nature, this type of investment requires large amounts of money and

involves an immobile asset. Moreover, being pure financial assets, real estate assets are the first ones suffering and failing during times of financial crisis like the 2008 one. The consequence is that companies often involve in these projects because they foresee short-term future profitability by generation of cash flows or want to invest some spare money they have left. In fact, according to Theurillat and Crevoisier (2012) "this allows a first-degree investor to avoid owning physical objects, so to have the ability to transform the assets in financial one which becomes tradable in the market", therefore "urban property becomes liquid and mobile in space". The authors also underline in their paper the risk that "the power of financial centres to take decisions and engage in spatial arbitrage in the built environment is being strengthened". This is one of the risks that, by their nature, PPPs should address as moderation mechanisms. At the same time financialization promotes internationalization and the result is that it often is investors' not customers', which are the final users, demand which is being answered. This aspect will be further analysed in the discussion of the business case.

1.3.3 Benefits and critical aspects

There are different opinions on PPPs among scholars. In fact, they embed characteristics of both the public sector and private markets, meaning both their strengths and their weaknesses. Consequently, according to Stephenson it is not sure at all that this instrument will be successful for the purpose of urban redevelopment projects.

In fact, the first and most common critic is that PPPs result into a system of privatization of the public action in urban renewal, thus they are a non-democratic, elite-driven governance mode, which can easily help gentrification arise. In fact, being the public actor influenced by and also

obliged to satisfy in a specific way its private partner to keep their relationship alive, some social and less profitable aspects which may be important for the citizens are sometimes ignored as it will be shown later in the development of the case.

Another second important problem is the general lack of consistent or structured systems and mechanisms to connect the public to the private actor and facilitate their relationship. In fact, Theurillat and Crevoisier (2012) stated that "it is important to negotiate properly with the city council in order to avoid delays and problems. This way one can find a compromise between the commercial logic of the development, private company and the political and administrative logics of the City". Taşan-Kok (2009) further analyses the critical aspects of large urban renewal projects and also thinks that the main problems are related to imbalances and lack of coordination between private and public interests: lack of comprehensive planning, lack of mechanisms to address accountability, to measure how project goals are met, to assess rewards, lack of co-ordination, institutional complexity... The scholar notes that there is also a scarce incentive to compromise and find a balance among stakeholders, because it is costly for both parties in terms of money, energy and time. This is further hindered by the widespread institutional rigidity mentioned above. Moreover, the two main actors have a relative knowledge of the risks and the challenges the other bears during her daily operations, thus distributing correctly the rents coming from risk becomes even more difficult. Moreover, disagreements and the constantly changing conditions of the market can also mean that the PPP often has to face changing and non-stable conditions.

Taşan-Kok (2009) also suggests some solutions to solve these conflicts. First of all, he believes an innovation of the institutional structure is needed and is the main alternative to failure, but since this is very difficult to realize,

he suggests adopting some "tailor-made planning instruments" for each single project. This for example means the presence of a board or a commission which is dedicated to connecting and coordinating the action of the Municipality with the firm and is composed by members of both parts. From this action it will result a more explicit role definition and therefore a lot of issues will be faced more easily by both parts.

PIIs are another potential instrument for the solution of the problems arising in PPPs, even if they are typical of the Italian environment only. In fact, they are for the Municipality a canva on which the most specific aspects of the project are displayed and therefore can help practically define the roles of the two actors. At the same time they provide with broad flexibility as they can be updated anytime as the project goes on with its life.

There are also scholars who have a more positive view on PPPs. In *Evaluation approach on public-private partnership (PPP) urban redevelopments*, Leung and Hui underline the fact that PPPs can bring together the expertise of both public and private actors creating a strong value added. This is also due to the fact that it is possible to choose case by case different levels of involvement for the parties and different levels of responsibilities to be assigned: "this way public sectors can transfer specific risks to private sectors and the private sectors can receive rewards accordingly to the risk taken". There is also evidence according to the authors that these projects usually manage to achieve a higher quality level.

However, the good number of advantages that can be achieved through PPPs is endangered by the market-led nature that urban redevelopment projects tend to have since the 80s. There are two main problems that this approach can cause for a PPP: dominance of business interests over the negotiation process and the fact that the methods to measure the final performance of the project are not completely appropriate for the typology

of investment analysed. A common solution can be the selection and/or creation of a proper appraisal method. In the end, an important success factor to take in consideration is to always maintain some operational flexibility to let the project adapt to the changing strategic environment. This is easily and practically solved, as explained above, by using governance instruments such as PIIs.

In conclusion, it is clear from the studies made in these regards and here analysed, that projects with PPPs features have an important potential for modern cities which want to attract a creative population to prosper both economically and socially. In fact, to be a creative city is a desirable goal for any place which focuses on becoming a pleasant one to live in for its citizens. If this goal is reached, different positive externalities can arise, especially on in a sustainable and social point of view.

Therefore, given the fact that any modern city may theoretically wish to follow this type of development pattern and given the fact that urban redevelopment is what is needed for a city to change and adapt to the new needs of its inhabitants, an analysis on the profitability and sustainability of PPPs investments is very important to take in consideration. In fact, as seen in the previous paragraph, cities can not engage in urban redevelopment alone, neither can private enterprises: their collaboration is mandatory for success. Nonetheless, being these parties very different in their nature, it is very difficult to assess costs/benefits for both as well as to coordinate and organise their work properly, moreover scholars have contrasting opinions regarding if these projects are overall efficient or not. Therefore, my research question is:

Are urban redevelopment projects involving a private and public partnership profitable? Are they beneficial for the city they are developed for?

In this thesis I will attempt to assess these questions focusing on a particular business case, which is strictly related to PPPs and urban renewal/redevelopment megaprojects, which is the residential, commercial and business district of CityLife in Milan.

1.4 Previous Research

Scholars have conducted different studies connecting PPPs with urban regeneration and renewal, citing different business cases. However, none of them precisely concentrates on finding a method to assess the profitability of the PPP in a quantitative way. In fact, Landry (1995) says that there is no literature existing with respect to risk assessment for socially oriented projects, so no precise and specific cost-efficiency indicator for these cases.

The most complete paper on the topic is the 2005 Leung and Hui's one called *Evaluation approach on public-private partnership (PPP) urban redevelopments*, which has already been partially cited in the previous section. According to the scholars, PPPs have the big advantage of bringing together at the same time the best skills of the private and the public sector with flexible levels of involvement and responsibility for both. Moreover, there is evidence that most of times this marriage results effective, but the appraisal methods used for their evaluation have some flaws. In fact, since a market-led approach is applied due to the involvement of the private party, business interests are often prevalent and methods of evaluation of the final project do not take into consideration both social costs and benefits

in a proper manner. It is therefore not possible to understand if a mitigation effect by the public actor has been played or not. Moreover, these evaluations do not take into consideration the specific characteristics of real estate which is the true subject of the project. In fact, investments in property are for their nature irreversible, thus very sensible to uncertainty. As previously mentioned, they are a good way to invest spare cash for firms, thus are a very common asset nowadays, but they are also the first ones to be hit in periods of crisis, as the 2008 one.

Leung and Hui affirm that the most popular appraisal method applied for public projects evaluations is CBA (Cost-Benefit Analysis), because it makes it possible to account for different variables, given the fact that these should be quantifiable in monetary terms in some way. However, they believe that there is a flaw in this method, which is the underestimation of costs. To solve this, they suggest using a hybrid model of CBA which is embedded with some features of Option Pricing. In fact, Option Pricing allows to account for different flexibilities and uncertainties which can arise during the development of the project using real options.

These theories are interesting, but difficult to apply in practice for what regards especially the Option Pricing part of the model. In fact, the author develops this through the explanation of a case, the London Docklands, but in a completely qualitative way, therefore providing no precise guidelines for a more analytical application of his findings. Therefore, since the purpose of this study is to develop a more quantitative and generalizable model, the suggestion made in the above mentioned paper might be too broad.

2.METHODOLOGY

2.1 CityLife neighbourhood

2.1.1 Business case choice

The following analysis aims at understanding the profitability of PPPs and the extent to which they are beneficial or not for the city in which the project they refer to is developed. It will be conducted with the help of a practical case study: the CityLife project in the city of Milan.

This project has been chosen as the defining one for the development of this thesis for different reasons. First of all, as previously mentioned in the literature chapter, the projects in scope for this PPP study are urban renewal mega-projects and this one can be classified as such. In fact, the goal of the policy makers was to take the area where the Milano Fair has been placed from 1920, when it was founded, to 2005, when it was moved to the actual site, Rho neighbourhood outside Milan, and convert it into a liveable and enjoyable district. Therefore, CityLife is one of the major renewal projects in Europe also due to the area of coverage of the intervention, which is of about 366.000 sqm.

Moreover, the CityLife neighbourhood is placed in Milan, which is one of the most innovative cities in Europe and for sure the most innovative one in Italy, especially with regards to urbanistic projects and renewal. Milan is a creative city which over the years has developed a unique brand for itself, that makes it recognizable and famous all over the world, mostly for its iconic fashion and design identity. It is in this branding view that the CityLife project was developed, as Milan's Municipality wished to build something which could become relevant and unforgettable for both tourists and inhabitants. In fact, nowadays, together with the skyscrapers of Porta

Nuova, a very similar project that became very famous too, the ones of CityLife are a constant and fundamental part of the skyline of the city.

The masterplan has been developed by three major Archistars, Zaha Hadid, Arata Isozaki and Daniel Libeskind. This has given prestige to the project and results in a high quality final product with a strong attention to design, which is completely in line with the characteristics of the city of Milan. In fact, since the beginning, the objective clearly stated in the call for tenders (*Bando di Gara*) was to create an area which had to be outstanding and immediately recognizable for everyone. In these regards, it is important to remember that Milan hosts every year a Design Week fair, is home of a lot of top class Universities focusing on design and is among the vibrant hearts of the design culture in Europe.

For all the reasons stated above, the characteristics for the attraction of the creative class through the CityLife project are all set.

2.1.2 The CityLife's PPP

The CityLife project has also been chosen for the scope of this study because it covers all the characteristics of a Public-Private-Partnership.

The area in scope for the project was property of the Milano Fair Foundation (FFM), which, when it was born as International Milan's Fair in 1923, bought the land from the State. After a long history becoming one of the biggest international players in the Fair market, in 2000 FFM became a private entity with public participation. The first decision taken in that year was to expand the area in which is placed and to move outside the city to have more possibility to grow also in the future. In fact, when the Fair was born, the city centre was far away from the actual CityLife location, but after 100 years Milan has expanded a lot and in this historical moment that original area can be fully considered as part of the central districts. Of course, it is

better for a Fair to be outside the city for different reasons, such as the amount of people coming to the exhibitions, which can block up car traffic and therefore raise air pollution, or the fact that it may be easier for visitors to reach the periphery rather than the city centre, especially in peak hours.

In the CityLife case the call for tenders issued by FFM was addressed to private actors, therefore the public actor, meaning the Municipality of Milan, came into action only after the name of the winner of the tender was decided. The winner, which is the actual private actor involved in the PPP, is CityLife SpA, which is controlled by Generali Group, one of the biggest European insurance companies. Moreover, there is also a minority participation of Allianz, another big European insurance company. After the tender, CityLife SpA bought the land from FFM and the two entities worked together towards creating the Integrated Intervention Plan (PII) (*Piano Integrato di Intervento*) to present to the Municipality since, as explained in paragraph 1.2, the Public Administration is the party having the exclusive right to build in the city. It is already clear at this point that, in this project, as it should be for all PPPs, the main role of the public actor is that of coordination and supervision.

In particular, PIIs are fundamental documents for the urbanisation process in Italy and are negotiated between the Municipality and the private party. They define the economic and technical characteristics of the project which must be respected by the private party to be granted the permission to conclude the work. Therefore, these documents make the rules regulating the cooperation between the two parties practical and actionable. PIIs exist along with other documents, like the Governance Plan of the Land (*Piano di Governo del Territorio*), which are however less flexible. In fact, being the PII an agreement among two parts, it is very flexible in its nature. This is very important for big urbanisation projects as different problems can arise

during the realisation of the project, which usually is completed in many years, during which both economic and social conditions can change radically. For example, regarding CityLife, the project was launched before the 2008 Global Economic Crisis and at the beginning the number of housing units foreseen was higher. After the crisis, the real estate market crashed everywhere and the PII was changed accordingly to change strategy and reduce the percentage of residences over the total use of land.

To make sure that the CityLife project can be considered as an example of PPP, it is also possible to analyse it in the light of the main characteristics of PPPs redacted by the European Commission and reported in paragraph 1.3:

Long-term relationship

The first interaction between CityLife SpA and the Municipality dates back to 16 December 2005. In this day, the first version of the PII presented by the private party and FFM was analysed and approved by the Municipality. The 23rd of June of 2006 the Municipality approved another document (*Convenzione Attuativa*) which definitively confirmed that the project was feasible. In January 2007 the coordinating team composed by people from both the Municipality and CityLife SpA was set for the first time. This is a very important step for the creation of a PPP and also a best practice as the role of this team is to discuss together and approve all the changes which could and should be made to the PII, thus to the project, during its development. Over the years five official modifying acts have been approved and applied to the PII, plus some minor changes, therefore the work of this team has been continuous and fundamental for the realization of the project. Nowadays, this coordinating table is still existing, as there are some small parts of CityLife which are not finished yet.

Funding of the project

The project has been entirely funded by CityLife SpA, thus via private channels and without the help of public ones. In fact, the group asked for a funding of 1,67 billion euros, more or less 65% of the total final cost of the project, to a pool of banks which granted it.

Important role of the economic party

It has been previously mentioned that CityLife SpA, the private party involved in this PPP, is the actual owner of the land on which the project has been developed. Moreover, the SpA has financed everything that has been created and thus is the owner of all the connected risks (see next point). It is also undeniable that, without the initiative of Milan's Fair Foundation deciding to move to a different location uptown and selling the land to another buyer, the project would not have been started from the beginning, thus the importance of this party is also high.

Shift of the risks usually proper of the public sector party to the private sector one

The public sector bears different risks in developing urban renewal projects. According to the World Bank, the most important ones among the others are:

- Political risk (e.g. political instability, corruption, disagreement on the technicalities of the project);
- Economic risk (e.g. changing inflation and exchange rates, economic crises);
- Technical risk: how much the project is constrained to some specific technology?
- Environmental risk: is the future impact of the project positive or negative? Is there any hazard taken? Who is going to be considered liable?

- Stakeholders risk: there are many different stakeholders (e.g. investors, neighbours) who may have very different ideas which can clash;
- Commercial risk: there is the risk that the new area will not be sold completely at the end of the project and this can result in waste of money and further degradation of the place.

As the private sector party involves in the project and especially in its financing, most of these risks shift on her. It is important at this point that the public sector, which is free from a lot of risks now, ensures that there is coordination and enough confidence among the stakeholders that the project is going to be successful and worth the risk.

According to this analysis we can conclude that the CityLife project has all the characteristics to be considered a PPP, especially for the purpose of the analysis that will follow.

2.2 Methodology for data analysis

The methodology applied for the study of the case in this thesis has different constraints to face. The first and most important one is explained by Codecasa and Ponzini (2011), who affirm that PPPs and the projects for which they are applied often lack proper information to work on, because it is usually very difficult to access the data. In fact, involved actors rarely make them public and the available records are often incomplete and/or do not completely cover the policy making process in scope. Moreover, they also state that "PPP's actually occur as displays of a social and political exchange and there is no means to assess their convenience". In fact, as explained in Chapter 1, it is very difficult to assess the different accountabilities for failures and without doing this it is very hard to

understand what should be corrected and done better. Moreover, as previously explained, Laundry (1995) stated that there is no cost-efficiency analysis that considers the specifics of these kind of projects and their various features.

However, given the research question that has been developed for this thesis, meaning if urban redevelopment projects involving a PPP are profitable and beneficial for the city, it is more suitable to perform the analysis of the data in a Cost-Benefit view. This has been used different times in the literature related to PPPs (see Leung and Hui), even for projects not connected to urban regeneration/renewal. However, as mentioned in section 1.3, this method is incomplete. For this reason and to dig deeper in the analysis of the case, a scenario analysis will be performed along with the CBA one, based on the available data. In fact, by developing different scenarios according to the specifics of the project and especially by comparing them, it is possible for the two actors in the PPP to understand which can be the different costs and benefits they must bear and what are the ending results of the project development. This way a broader overview is possible with respect to the mere study of one set of assumptions and the calculation of the CBA on them only.

First, an *as is* scenario will be taken into consideration by looking at the costs and revenues that both parties have incurred during the development of the actual plan. This scenario and the numbers that sum up to the final costs especially are the result of correlations among very different factors, which mainly are:

- volumes which have been agreed and built;
- different intended uses of these volumes;
- taxes paid on the project realization to the Municipality by the private party;

- costs incurred (e.g. building costs).

All these factors interact among them: for example, as the volumes built change, the costs incurred by CityLife SpA change accordingly and the same happens to the taxes paid to the Municipality. In fact, these costs and especially taxes are obtained by multiplying a monetary amount, which in the second case is calculated by the Municipality itself, for the squared meters of the area in scope. Revenues instead are already provided by the data source used in this study, in the form of their total monetary amount. Moreover, all the data reported is what has been incurred and gained by the private party, except for taxes. More details on this will be provided in the Data Analysis chapter; moreover, an in-depth analysis on the ownership of the costs/revenues by one of the two parties will be provided in the Discussion chapter. Therefore, by studying the changes in the correlations between the different elements of the project caused by varying assumptions, it is possible to understand if the two parties could have benefitted more or less from this renewal intervention.

The first scenario that will be analysed after the *as is* one, is the *Green* one, aimed at understanding if the allocation of the project's green areas was in fact profitable or not. Looking at this aspect is important to analyse if the urbanization project has a proper focus on sustainability, which is one of the main issues of the century. This scenario is divided into two micro ones, which both assume an increase in the Green Public spaces for the project. The first one is the *Green Scenario – Real Estate non reduced*, which takes into consideration only the mentioned rise in Green sqm. Instead, the second one is the *Green Scenario – Real Estate reduced*, in which also a reduction in the Real Estate surface is applied, in order not to have an overstated measure of the total sqm of the area in scope, which can result in an unrealistic scenario.

The third scenario presented is the *Residences Scenario*, aimed at understanding how changes in the Residences, the most important component of the project, may affect the rest of the data. Also in this case two micro-scenarios have been considered, according to the same rationale: increase/decrease of the total sqm related to the Residences function, along with an adjustment of the other functions' area to maintain the same surface of the *as is* scenario. Therefore, the first is the *Residences reduced* one, while the second is the *Residences increased* one.

The fourth and last scenario is the *Social scenario*. This analysis has been performed with the aim of exploring an other important aspect of urban projects, which in this case is also very relevant for Milan, meaning the gentrification effect caused by revitalizing a depressed area. In fact, in this case, by assuming the introduction of some policy for keeping the prices of some Residential units below a specific cap, it is explored how the profitability of the project changes.

Each scenario will be compared to the *as is* one, which is used as a base case. Moreover, in the subsequent Discussion chapter all the scenarios are compared among them. In fact, the relevance of an analysis like the proposed one comes from the possibility of comparison. In this case, being the project already developed almost entirely, a base case exists, but in other situations in which this does not hold, it is possible to create a base case scenario which is the expected most desirable one and compare all the others with this, and then among them.

3.DATA ANALYSIS

3.1 Data sources

For the development of this analysis, the sources from which data has been collected have been primary ones. In particular, these are of two types.

The hard, quantitative data has been collected from one document only, which is the 2013 Economic Feasibility Report (*Relazione Economica di Fattibilità*). This is an official document, signed both by the Municipality of Milan and CityLife SpA, and has been produced along with the newest existing version of the PII (Integrated Intervention Plan, see section 2.1.1), which is the 3rd variant of 2013. The Economic Feasibility Report is usually published in attachment to the PII and provides the details of the different costs that have been occurred as well as the revenues, in the form of a small income statement. In particular, it provides the details of the costs for each element of the project, along with the taxes that this has produced. In this document it is possible to view in details the volumes built, how they have been distributed (residences, commercial, offices...), how many public areas have been requested by the Municipality and how many where actually built as such.

There is another version of the PII upcoming in 2021 with some changes to the project, but the most relevant ones have been made within the 2013 document. Moreover, during that period most of the buildings and areas where practically unbuilt, while now even if the project is still not officially closed, as some small changes are still to be made, most of it is concluded. These are the reasons why the following analysis has been based on a seemingly old version of the PII.

Most of the qualitative data used for the scope of this work has been collected through two interviews. The first one has been performed with a person working in the Land and Urbanistic Development Area of the Municipality of Milan. This person has worked with the project CityLife Spa from the beginning and was very knowledgeable of the aspects of the collaboration between the Municipality and the private party. She was the one who suggested to take as reference data the one contained in the 2013 PII and its Economic Report, stating that no significant change in the numbers of the project has happened since that year. The second interview has been performed with a person working for CityLife SpA instead. This person also has been working with the Municipality and has been part of that “bridge” team among the two parties that was created especially for the purpose of making the PPP work more properly.

These two interviews have been conducted with a more qualitative focus as the goal was to have a precise idea of the timeline of the project and its development over time. Moreover, thanks to the collaboration of these two people, it has been possible to have a clearer overview of the intentions of the parties and goals of this project. The data collected during these conversations will not be included in the scenario analysis, as this is a purely quantitative method of evaluation. Instead, this information has been used in the previous chapters for the explanation of the CityLife project characteristics and timeline and it will be used in the Discussion part especially for the provision of the necessary qualitative insights to complete the mathematical model.

3.2 Data Analysis

As mentioned in the Methodology chapter, the data that will be analysed for the scope of this study will be looked at in a “scenario” fashion.

The first scenario that will be displayed is the *as is* one, which shows what is the current situation in which the CityLife project actually is and what is the current equilibrium between costs, revenues, taxes and destination of use of the volumes that have been built.

After this overview of data, some assumptions will be changed and the resulting differences in the overall picture will be shown in the other three scenarios: the *Green scenario*, the *Residences scenario* and the *Social scenario*.

3.2.1 As is scenario

The first, base scenario is the *as is* one. It is important to underline that the 2013 Economic Feasibility Report data is updated to the last version of the PII, consequently the most important numbers related to the volumes built or the taxes paid to the municipality did not change much after the creation of this document.

3.2.1.1 Surface in scope

The first data to analyse for the creation of the scenario are the volumes and surfaces which are in scope for the project, as all the other numbers are based on them. According to the Economic Feasibility Report, the Buildable Surface in scope for the project is 292.910 square meters (sqm) [Figure 3.1] . This number is obtained by multiplying the territorial surface in scope for the transformation activities of the PII for the buildability index, which is a number that assesses mathematically how much it is possible to

build in a given territory and therefore what is the impact of the human presence in that precise place.

Territorial surface for the trasformation area of the PII	254.704
Buildability index	1,15
Buildable surface	292.910

Figure 3.1

The Buildable Surface obtained this way can be subsequently divided in the three different destinations of use for which it has been devolved, meaning the Residence, Tertiary and Commercial function. This is a relevant part of the analysis as different costs and other variables depend on this subdivision of the Buildable Space. In Figure 3.2 it has been displayed the total project surface in scope: these 288.879 sqm are in fact the square meters that are practically in scope for building and thus will be divided among the three functions. The remaining 4.030 sqm are part of Palazzine Orafi, which is an historical building which only needs restructuring, thus interventions on it do not generate taxes etc.

The Buildable Surface is divided in:	
Residence	148.407
Tertiary	120.472
Commercial	20.000
Total project surface in scope	288.879
Existing surface	
Palazzine Orafi	4.030
Total surface	292.909

Figure 3.2

Among the three functions' surfaces, the Residence's one is very important, because it is used in the Economic Feasibility report to calculate the expected number of inhabitants of the area. In fact, according to Formula 1.1 provided by the document:

$$\text{Number of inhabitants expected} = (\text{Residence surface} * 3) / 100$$

It is therefore projected that 148.407 sqm of residence will be enough for 4.452 people to live.

Coming back to the Buildable Surface, remember it is the product of the Territorial Surface for the transformation area of the PII, which as shown is 254.704 sqm, for an index. It is therefore relevant to look also at the composition of these 254.704 sqm in detail, as the Green Spaces for the project are here displayed [Figure 3.3]:

Check of the surfaces and their end use	
Transformation area of PII	254.704
Estate surface	114.620
Public use ramp to access the underground system	1.600
Private use ramp to access the underground system	385
Public green space	100.468
Squares and pedestrian paths	28.442
Collective services	8.400
Primary urbanization areas	789
Total	254.704

In the scenario analysed, there are some guidelines on how much areas to devolve to the public use and interest. More precisely, in the Economic Feasibility Report it is reported the proportion that according to the Municipality must be respected between the areas dedicated to the residential use and the ones dedicated to the public one, such as green spaces, schools, etc and the same holds for the other two functions. These public areas are a fundamental requirement in Italy for urbanization projects and are called *a Standard* areas. They are calculated in a different way according to the different destination of use to which they are connected [Figure 3.4]. In particular, for the Residences' related ones, the *a Standard* areas must be at least equal to 44 sqm for inhabitant. In order to perform this calculation, the number of expected inhabitants for the CityLife area (4.452) has been multiplied by 44sqm. For the other functions

instead¹, the requested areas must be at least 80% of the Buildable Surface.

Requested areas for public services and of public and general interest	
Residence (44mq/inhanbitants)	195.897
Other functions (tertiary, commercial, services) (80% Buildable surface)	234.328
Total	430.225

Figure 3.4

According to the regional rules holding for Milan, it is not mandatory for the private party, thus CityLife SpA, to build all the requested areas, it is only mandatory to at least make sure that the sum of the green spaces and squares is at least equal to the transformation area in scope for the PII. In this case [Figure 3.5] the sum of these two surfaces is 138.910 sqm, which is higher than 127.352 sqm, which is exactly the half of 254.704 sqm, the transformation area.

Standard project areas	
Public parking lots	27.000
Standard areas	
Squares and public places + horizontal projection of the above ground part of the buildings	38.442
Park and green areas	100.468
Total	165.910
Standard areas requested	430.225
Difference between the ones realized	264.315

Figure 3.4

In the end, as shown in Figure 3.4, the *a Standard* areas actually built for the CityLife project are 264.315 sqm less than the ones requested according

¹ In the document it is written, with regards to the “Other functions” requested public areas, that these are 115.602 sqm, while on the description of the calculation of the measure it is written that this number should be 80% of the Buildable Surface (234.328 sqm). Since there is no explanation for the insertion of such a different number, it has been decided for the sake of the coherence of the analysis to keep the result coming from the mathematical formula.

to the indications given by the Municipality in Figure 3.3. This means that the realized areas are 38,56% of the requested ones.

3.2.1.2 Costs and Taxes

The Economic Feasibility Report has a specific focus on the costs of the project, which are completely dependent on the destination of use of the Buildable Surface [Figure 3.5]. The document includes also the construction costs of the parking lots, as they are directly correlated to each of the three different functions and have been an important part of the project structure. In fact, they have been built completely underground in order to leave more space above for the construction of public and green spaces. At the same time their presence is really important for the comfort of the inhabitants of the zone, the people who work there and the ones who come to shop and visit.

Construction costs for private functions			
Private functions	S.l.p	mq costs	Total
Free residence (including adjacent lots and external areas)	148.407	1.050 €	155.827.350 €
Underground private parking lots (4500 lots)	146.000	400 €	58.400.000 €
Tertiary	120.472	1.454 €	175.133.761 €
Underground private parking lots (1150 lots)	36.142	375 €	13.553.250 €
Commercial	20.000	900 €	18.000.000 €
Underground private parking lots (650 lots)	20.000	375 €	7.500.000 €
		Total	428.414.361 €
Total construction costs of private functions			
Buildings			348.961.111 €
Parking lots			79.453.250 €
		Total	428.414.361 €

Figure 3.5

These costs are only owned by CityLife SpA, as they regard the creation of private functions, and are important to analyse because the Municipality makes the private party pay some taxes on these building activities. These taxes depend completely on the Buildable Surface by function and the

parking lots' surface is not comprehended in this count, following the Economic Feasibility Report guideline [Figure 3.6].

Tax on the construction costs			
Functions	S.l.p.	tax/mq	Total
Free residence	148.407	60 €	8.904.420 €
Tertiary	120.472	173,4 €	20.889.844,8 €
Commercial	20.000	90 €	1.800.000 €
		Total	31.594.264,8 €

Figure 3.6

These are not the only taxes due to the Municipality for the development of this project. In fact, there are also urbanization taxes, which are linked both to destination of use of the Buildable surface and the type of urbanization intervention, of primary or of secondary type, that is in scope [Figure 3.7]. To the urbanization tax, it should be added, for each function, an extraordinary tax, which is correlated to some interventions, that for their nature are highly taxed according to the Italian legislation, and has been part of some agreement between the two parties at the beginning of the project. In particular, the total sum of this extraordinary tax has been reduced by € 2.000.000, so it is € 35.953.969 instead of € 37.953.969. In fact, it is indicated in the document that it has been subject to some discount by the Municipality because of the sustainability efforts made during the implementation of the project. Before calculating the total tax a reduction factor has been applied both to the total tax amount per function and to the extraordinary tax per function, which were discounted by 30% each, as CityLife SpA was granted some other discount on the taxes because of the sustainability standards it has applied through all the project for all the buildings and the interventions made.

Urbanization taxes according to the last update 21.12.2007				
Urbanization taxes in force	Residence (mc)	Tertiary (mq)	Commercial (mq)	Total
Surfaces S.l.p. (mc for residence)	445.221	120.472	20.000	288.879
Taxes primary (mc)	23,97 €	193,97 €	193,97 €	
Taxes secondary (mc)	38,02 €	152,43 €	152,43 €	
Overall taxes primary	10.671.947,37 €	23.367.953,84 €	3.879.400 €	37.919.301,21 €
Overall taxes secondary	16.927.302,42 €	18.363.546,96 €	3.048.600 €	38.339.449,38 €
			Total	76.258.750,59 €
Taxes additional duty				
Extraordinary duty	11.851.783,02 €	20.670.585,76 €	5.431.600 €	35.953.969 €
			Total	112.212.719 €
Reduction factor for the urbanization taxes 0,70				
Total urbanization taxes	19.319.474,85 €	29.212.050,56 €	4.849.600 €	53.381.125,41 €
Extraordinary duty	11.851.783,02 €	20.670.585,76 €	5.431.600 €	35.953.969 €
	Total 31.171.257,87 €	49.882.636,32 €	10.281.200 €	89.335.094,19 €

Figure 3.7

Another focus of the document regards urbanization works (*opere di urbanizzazione*), which are defined as the different types of equipment needed for a specific territory to become suitable for urban settlement. There are two types of urbanization works, as cited above. The first type is primary urbanization works, which are the technical infrastructures needed to make buildings usable by their inhabitants, such as the sewer net, water supply, public lighting... The second type is secondary urbanization works, which are the infrastructures needed to make the area functional, meaning that they favour and ease the life of inhabitants of the area. Some examples in this case are: churches, sport facilities, parks and green areas... In Figure 3.8 it is possible to see how much it has been spent for each of these urbanization works, divided by category.

Primary Urbanization works	
Drain pipes net	3.188.950 €
Dumping of ground water	1.410.889 €
Drinkable water pipes	1.317.053 €
Gas pipes	272.564 €
External Streets	8.905.499 €
Street drainage	400.362 €
Traffic Lights	1.100.000 €
Street lighting	910.529 €
Traffic mobility arrangement	475.200 €
Flowerbeds for traffic mobility	202.576 €
Cable network for internet and electric energy	2.052.662 €
M5	15.406.572 €
Total	35.642.856 €
Secondary Urbanization works	
Park	10.012.750 €
Fountain - Giulio Cesare Square	600.000 €
Park zip area	4.317.300 €
Green areas	555.300 €
Police Station	3.982.650 €
Video surveillance system for the park	233.000 €
Irrigation system for the park	715.000 €
Lighting system for the park	966.650 €
Upgrading interiors of Pavilion 3	21.000.000 €
Upgrading facade of Pavilion 3	6.600.000 €
Pedestrian areas in public ones	1.000.000 €
Total	49.982.650 €
Valuable works requiring an additional duty	
Equipment of public interest	10.000.000 €
Creation of new equipment	5.000.000 €
Demolition work	5.000.000 €
Total	20.000.000 €
Monetization	
Standard Monetization	43.493.213 €
M5 tax	14.342.056 €
Vigorelli	18.000.000 €
Public functions of general interes	11.151.157 €
Total	43.493.213 €
Non-deductible works of general interest	
Public underground parking lots	13.500.000 €
Works in public areas	8.063.155 €
Total	21.563.155 €
TOTAL	170.681.874 €

Figure 3.8

It is possible to notice that along with the primary and secondary urbanization works there are also other costs displayed. The first ones are related to valuable works requiring an additional duty, because due to the regional law a higher tax should be paid for the realization of some specific interventions, like demolition works. The second additional cost displayed is the so-called monetization one. Monetization is a payment made to the Municipality by the private party of an amount of money which substitutes the actual transfer of the land from the public to the private. It is called Standard Monetization because it is usually applied to areas which are a *Standard*. The last cost displayed in the document is the cost of creation of the works for which no tax payment is due. In the end, all of these costs have been displayed together, because the sum of the taxes they generate, the total tax [Figure 3.9], is given according to the document, by Formula 1.2:

$$\begin{aligned}
 \text{Total tax} = & (\text{primary urbanization work tax} + \text{secondary urbanization work tax} \\
 & + \text{extraordinary duties} + \text{standard monetization} \\
 & + \text{non deductible works} + \text{additional duty}
 \end{aligned}$$

Primary Urbanization works	37.919.301 €
Secondary Urbanization works	38.339.449 €
Total	76.258.750 €
Extraordinary duties	35.953.969 €
Total	112.212.719 €
Standard Monetization	43.493.213 €
Legal interests	1.848.164 €
Non-deductible works	21.563.155 €
Additional duty	20.000.000 €
Total tax	199.117.251 €

3.2.1.3 Income Statement

In the end, a small income statement summarizing the most important economic measures of the project can be provided for the conclusion of the scenario [Figure 3.10].

Economic aspects of the PII proposition	
Building surface (S.l.p.)	288.879
Garage and box surface	202.142
General costs	
Cost of the area	523.000.000 €
Total tax (maximum amount obtained from taxes and extraordinary duties + monetization + non-deductible works)	199.117.251 €
Additional duties	20.000.000 €
Maintenance of green areas	1.750.000 €
Duty on the construction cost	31.594.265 €
<i>Structural costs</i>	
Planning	109.355.706 €
Commercialization and marketing expenses	55.650.000 €
Demolition and preparatory works expenses	35.000.000 €
Other costs (structure, insurance, consulting..)	52.159.559 €
Total	1.027.626.781 €
Specific costs	
Construction costs of buildings	348.961.111 €
Constriction costs of parking lots	79.453.250 €
Unexpected events	60.753.170 €
Total	489.167.531 €
Total project costs	1.516.794.312 €
Revenues from sale of buildings	1.715.000.000 €
Revenues from sale of parking lots	140.000.000 €
Total revenues	1.855.000.000 €
Net Income	338.205.688 €
% on revenues	18%

Costs are here divided in two macro categories, which are General and Specific costs. Among the General ones, the biggest one is the cost of the area. In fact, CityLife SpA paid the area €523.000.000 to Milan Fair Foundation. The second biggest cost has been the total tax which has been analysed in detail above. The specific costs instead are made up by the

construction costs and the unexpected events costs. The biggest part of the construction costs has been the realization of buildings. This goes in accordance with the fact that these costs have created the highest taxes for CityLife SpA to pay and, as displayed in the table in Figure 3.10, the highest revenues. With a total cost of € 1.516.794.312 and a total revenues of € 1.855.000.000, the figure of 2013 results in a net income for the project of € 338.205.688, which is in total the 18% of revenues.

3.2.2 Green Scenario

The second scenario is the *Green scenario*. In this case, by varying the green spaces built for the project it is possible to assess which will be the differences with the *as is* scenario. More specifically, the CityLife's total green space will be increased by half of its *as is* measure, which means that it will go from 100.468 sqm to 150.702 sqm. This has been decided not to widen the green area too much, but at the same time to enlarge it to a significant proportion to have significant effects on the other data.

The green scenario will be divided in two sub-scenarios: the first one will keep the Estate surface, which is part of the transformation area of the PII, the same as the *as is* scenario, while the second one will reduce it by 1/3. It has been decided to reduce the Estate by 1/3 only in order not to take away too much of the core part of this project.

3.2.2.1 Green Scenario – Estate unchanged

As mentioned, in this scenario the only variable that changes with respect to the *as is* one is the surface of the Green Spaces, which becomes 1,5 of the original measure, thus 150.702 sqm. This implies a change of the Transformation area of the PII from 254.704 sqm to 304.938 sqm [Figure 3.11].

Check of the surfaces and their end use	
Transformation area of PII	304.938
Estate surface	114.620
Public use ramp to access the underground system	1.600
Private use ramp to access the underground system	385
Public green space	150.702
Squares and pedestrian paths	28.442
Collective services	8.400
Primary urbanization areas	789
Total	304.938

Figure 3.11²

Consequentially, the Buildable Surface increases from 292.910 sqm to 350.679 sqm [Figure 3.12].

Territorial surface for the transformation area of the PII	304.938
Buildability index	1,15
Buildable surface	350.679

Figure 3.12

This change in the overall Buildable Surface affects different things. The first one is the requested areas for public services, which become 476.440 sqm instead of 430.225 sqm [Figure 3.13]. This happens because the “Other functions” measure increases from 234.328 sqm to 280.543 sqm due to the increase in the Buildable Surface. In Figure 3.14 it is possible to view the change also in the difference between the *a Standard Areas* requested and the ones realized. While in the *as is* scenario the *a Standard* areas which have been realized were 38,56% of the requested ones, in this scenario they are 45,37%.

Requested areas for public services and of public and general interest	
Residence (44mq/inhanbitants)	195.897
Other functions (tertiary, commercial, services) (80% Buildable surface)	280.543
Total	476.440

Figure 3.13

² In this scenario, as well as the next ones, the numbers in red present in the Figures are the ones changing with respect to the *as is* scenario, because of the different assumptions made case by case.

Standard project areas	
Public parking lots	27.000
Standard areas	
Squares and public places + horizontal projection of the above ground part of the buildings	38.442
Park and green areas	150.702
Total	216.144
Standard areas requested	476.440
Difference between the ones realized	260.296

Figure 3.14

The change in the overall Buildable Surface is of course reflected also in the different functions. The Green Space can not be considered as part of the Residences (thus no change in the forecasted number of inhabitants for the area will happen with respect to the *as is* scenario), neither of the Commercial function, thus it will be considered as part of the Tertiary function. The Tertiary surface is therefore affected by its change. More specifically, considering that the Buildable Surface is the product of the Transformation Area of the PII by the Buildability Index (1,15) and that the Transformation area has increased by 50.234 sqm due to the increase in the Green Areas, the Tertiary Surface, being a fraction of the Buildable Surface and being composed by the Green Areas and other areas, must now increase by $50.234 \text{ sqm} * 1,15$. Therefore, as shown in Figure 3.15 the Tertiary surface becomes 178.241 sqm instead of 120.472 sqm and the total project surface in scope increases too.

The Buildable Surface is divided in:	
Residence	148.407
Tertiary	178.241
Commercial	20.000
Total project surface in scope	346.648
Existing surface	
Palazzine Orafi	4.030
Total surface	350.679

Figure 3.15

The change in the Tertiary function surface has the most interesting results as it has impacts on the costs and taxes paid to the Municipality. First of all, it has been assumed that the parking lots remain unchanged as their use should not be impacted by an increased Green surface. Then, it has been assumed that the building costs for all the components of this function are constant and equal. Consequently, being the construction costs directly proportional to the surface in scope, they increase from an initial € 175.133.761 to € 259.114.434. This boosts the total construction costs from € 428.414.361 to € 512.395.034 [Figure 3.16].

Construction costs for private functions			
Private functions	S.l.p	mq costs	Total
Free residence (including adjacent lots and external areas)	148.407	1.050 €	155.827.350 €
Underground private parking lots (4500 lots)	146.000	400 €	58.400.000 €
Tertiary	178.241	1.454 €	259.114.434 €
Underground private parking lots (1150 lots)	36.142	375 €	13.553.250 €
Commercial	20.000	900 €	18.000.000 €
Underground private parking lots (650 lots)	20.000	375 €	7.500.000 €
		Total	512.395.034 €
Total construction costs of private functions			
Buildings			432.941.784 €
Parking lots			79.453.250 €
		Total	512.395.034 €

Figure 3.16

As mentioned in paragraph 3.2.1 there are some taxes directly correlated to these costs, which are increased accordingly from € 20.889.844,8 to €30.907.006,7 [Figure 3.17], causing an increase in the total tax on the construction costs from € 31.594.264,8 to € 41.611.426,7.

Tax on the construction costs			
Functions	S.l.p.	tax/mq	Total
Free residence	148.407	60 €	8.904.420 €
Tertiary	178.241	173,4 €	30.907.006,7 €
Commercial	20.000	90 €	1.800.000 €
		Total	41.611.426,7 €

Figure 3.18

The other important tranche of taxes analysed in the *as is* scenario are the urbanization ones. Also in this case, being these taxes proportional to the Tertiary function surface, there is an increase in the tax paid as shown in Figure 3.19. In particular, taxes paid for primary urbanization works for this function increase from € 23.367.953,84 to € 34.573.426,17, while the ones paid for secondary urbanization works go from € 18.363.546,96 to € 27.169.290,87. Moreover, extraordinary taxes do not have any kind of relationship with the surface in scope, thus do not change according to that. Therefore, the grand total goes from a base case of € 89.335.094,19 to € 103.342.945,56.

Urbanization taxes according to the last update 21.12.2007					
Urbanization taxes in force	Residence (mc)	Tertiary (mq)	Commercial (m)	Total	
Surfaces S.l.p.	445.221	178.241	20.000		
Taxes primary	23,97 €	193,97 €	193,97 €		
Taxes secondary	38,02 €	152,43 €	152,43 €		
Overall taxes primary	10.671.947,37 €	34.573.426,17 €	3.879.400 €	49.124.773,54 €	
Overall taxes secondary	16.927.302,42 €	27.169.290,87 €	3.048.600 €	47.145.193,29 €	
			Total	96.269.966,83 €	
Taxes additional duty					
Extraordinary duty	11.851.783,02 €	20.670.585,76 €	5.431.600 €	35.953.969 €	
			Total	132.223.936 €	
Reduction factor for the urbanization taxes		0,70			
Total urbanization taxes	19.319.474,85 €	43.219.901,93 €	4.849.600 €	67.388.976,78 €	
Extraordinary duty	11.851.783,02 €	20.670.585,76 €	5.431.600 €	35.953.969 €	
	Total	31.171.257,87 €	63.890.487,69 €	10.281.200 €	103.342.945,56 €

Figure 3.19

As previously noticed this is not the final grand total tax, as Formula 1.2 reported in the Economic Feasibility Report indicates. This is now shown, with all the due changes in Figure 3.20, in which it is possible to see that the gran total tax goes from the *as is* € 199.117.251 to € 219.128.468.

Primary Urbanization works	49.124.774 €
Secondary Urbanization works	47.145.193 €
Total	96.269.967 €
Extraordinary duties	35.953.969 €
Total	132.223.936 €
Standard Monetization	43.493.213 €
Legal interests	1.848.164 €
Non-deductible works	21.563.155 €
Additional duty	20.000.000 €
Total tax	219.128.468 €

Figure 3.20

In the end, the effect of the different assumptions made on the ending income statement is the last thing to observe for this scenario [Figure 3.21]. All the variables that change have been previously described except for the Maintenance of Green areas one. It has been assumed that, since these areas have been increased by half of their previous surface, these costs must have increased according to the same logic, considering the fact that they are directly proportional to the Green sqm. The other assumption is that all the rest remains unchanged, comprehending the revenues. In fact, as they only come from the sale of buildings and parking lots and since Green Areas can not be considered as a source of revenues in either of these senses, it has been decided to keep them unchanged. The overall result is an increase in the total project costs from € 1.516.794.312 to € 1.631.678.364 and a reduction of the net income from € 338.205.688 (18% of revenues) to €222.321.636 (12% of revenues).

Economic aspects of the PII proposition	
Building surface (S.l.p.)	346.648
Garage and box surface	202.142
General costs	
Cost of the area	523.000.000 €
Total tax (maximum amount obtained from taxes and extraordinary duties + monetization + non-deductible works)	219.128.468 €
Additional duties	20.000.000 €
Maintenance of green areas	2.625.000 €
Duty on the construction cost	41.611.427 €
<i>Structural costs</i>	
Planning	109.355.706 €
Commercialization and marketing expenses	55.650.000 €
Demolition and preparatory works expenses	35.000.000 €
Other costs (structure, insurance, consulting..)	52.159.559 €
Total	1.058.530.159 €
Specific costs	
Construction costs of buildings	432.941.784 €
Constriction costs of parking lots	79.453.250 €
Unexpected events	60.753.170 €
Total	573.148.204 €
Total project costs	1.631.678.364 €
Revenues from sale of buildings	1.715.000.000 €
Revenues from sale of parking lots	140.000.000 €
Total revenues	1.855.000.000 €
Net income	223.321.636 €
% on revenues	12%

Figure 3.21

3.2.2.2 Green Scenario – Estate reduced

As mentioned, it is possible to make the Green scenario even more complete by introducing a reduction in the Estate areas along with the increase in the Green ones.

The Estate part, especially the Residences one, of the CityLife project is really important for the investors as well as core for the concept of the project itself, therefore it is not possible to assume a huge reduction of it. In the *as is* scenario, this surface is 114.620 sqm, therefore for the sake of this analysis it has been reduced by 1/3 (76.143 sqm) in order not to

increase the overall surface of the project too much, as the increase in the Green areas has already been big enough.

Following the same order of scenario analysis that has been followed before and comparing the results to the *as is* scenario again, the first thing that changes according to the new assumption is the Transformation Area, which becomes 266.731 sqm instead of 254.704 sqm [Figure 3.22] and increases the Buildable Surface from 292.910 sqm to 306.741 sqm.

Check of the surfaces and their end use	
Transformation area of PII	266.731
Estate surface	76.413
Public use ramp to access the underground system	1.600
Private use ramp to access the underground system	385
Public green space	150.702
Squares and pedestrian paths	28.442
Collective services	8.400
Primary urbanization areas	789
Total	266.731

Figure 3.22

Territorial surface for the transformation area of the PII	266.731
Buildability index	1,15
Buildable surface	306.741

Figure 3.23

The Real Estate surface is of course part of the Residence function of the Buildable surface, consequently, the logic explained before for the calculation of the new value of the Tertiary function is followed to calculate its new surface value, which is now 104.469 sqm [Figure 3.24].

The Buildable Surface is divided in:	
Residence	104.469
Tertiary	178.241
Commercial	20.000
Total project surface in scope	302.710
Existing surface	
Palazzine Orafi	4.030
Total surface	306.741

Figure 3.24

This brings on a change in the forecasted number of inhabitants of the area. In fact, it has been explained in the *as is* scenario that this is usually calculated through Formula 1.1, which relates this number to the Residences function's surface. Therefore, the inhabitants projected decrease from 4.452 to 3.134. This has a direct impact, together with the change in the Buildable surface, in the Requested areas for public services, which with respect to the *as is* case are of course reduced for the Residences and increased for the Other Functions (see Figure 3.4). The overall effect is a total reduction of the requested areas which now are 383.282 sqm with respect to the previous 430.225 sqm [Figure 3.25].

Requested areas for public services and of public and general interest	
Residence (44mq/inhanbitants)	137.900
Other functions (tertiary, commercial, services) (80% Buildable surface)	245.393
Total	383.292

Figure 3.25

This has a beneficial effect on the realization of the standard project areas as the difference between the ones realized and the ones requested decreases a lot with respect to the base case [Figure 3.26]. In fact, now the percentage of standard areas realized becomes 56,39%, with respect to the *as is* 38,56%.

Standard project areas	
Public parking lots	27.000
Standard areas	
Squares and public places + horizontal projection of the above ground part of the buildings	38.442
Park and green areas	150.702
Total	216.144
Standard areas requested	383.292
Difference between the ones realized	167.148

Figure 3.26

Looking at the costs and related taxes, the increase in Green areas and the reduction in Estate ones, have contrasting effects [Figure 3.27]. In fact, it has been assumed that the parking lots for the Residences are directly proportional to their function’s surface, thus they are reduced by 30% of their surface and of their *as is* lots, as the new Residence surface is corresponding to 70% of the original *as is* measure. As a consequence, both free residence total costs and underground private parking lots total costs are reduced with respect to the base scenario. The Free residence goes from € 155.827.350 to € 109.692.800, while the underground private parking lots go from 4500 lots costing € 58.400.000 to 3150 lots costing € 40.880.000. Even if this reduction in costs is quite big, the rise due to the increase in Green Areas in the Tertiary function, which as presented in Figure 3.16 has been from € 175.133.761 to € 259.114.434, is enough to increase the grand total Construction costs from € 428.414.361 to € 448.740.484.

Construction costs for private functions			
Private functions	S.l.p	mq costs	Total
Free residence (including adjacent lots and external areas)	104.469	1.050 €	109.692.800 €
Underground private parking lots (3150 lots)	102.200	400 €	40.880.000 €
Tertiary	178.241	1.454 €	259.114.434 €
Underground private parking lots (1150 lots)	36.142	375 €	13.553.250 €
Commercial	20.000	900 €	18.000.000 €
Underground private parking lots (650 lots)	20.000	375 €	7.500.000 €
		Total	448.740.484 €
Total construction costs of private functions			
Buildings			386.807.234 €
Parking lots			61.933.250 €
		Total	448.740.484 €

Figure 3.27

There are of course consequences on the taxes on the construction costs, which have the same behaviour of the grand total costs [Figure 3.28]: a decrease in the taxes for the Free Residence function and an increase for

the Tertiary function ones creates a grand total increase from € 31.594.264,8 to € 38.975.166,7.

Tax on the construction costs			
Functions	S.l.p.	tax/mq	Total
Free residence	104.469	60 €	6.268.160 €
Tertiary	178.241	173,4 €	30.907.006,7 €
Commercial	20.000	90 €	1.800.000 €
		Total	38.975.166,7 €

Figure 3.28

With regards to the remaining taxes which have been presented, the same situation is presented: the ones for the single functions are respectively reduced and increased according to the decrease/increase of the surfaces. As well as it happened for the construction taxes, the overall tax is increased from € 89.335.094,19 to € 97.623.184,05 [Figure 3.29].

Urbanization taxes according to the last update 21.12.2007				
Urbanization taxes in force	Residence (mc)	Tertiary (mq)	Commercial (m)	Total
Surfaces S.l.p.	313.408	178.241	20.000	288.879
Taxes primary	23,97 €	193,97 €	193,97 €	
Taxes secondary	38,02 €	152,43 €	152,43 €	
Overall taxes primary	7.512.389,76 €	34.573.426,17 €	3.879.400 €	45.965.215,93 €
Overall taxes secondary	11.915.772,16 €	27.169.290,87 €	3.048.600 €	42.133.663,03 €
			Total	88.098.878,96 €
Taxes additional duty				
Extraordinary duty	11.851.783,02 €	20.670.585,76 €	5.431.600 €	35.953.969 €
			Total	124.052.848 €
Reduction factor for the urbanization taxes		0,70		
Total urbanization taxes	13.599.713,34 €	43.219.901,93 €	4.849.600 €	61.669.215,27 €
Extraordinary duty	11.851.783,02 €	20.670.585,76 €	5.431.600 €	35.953.969 €
	Total	25.451.496,36 €	63.890.487,69 €	10.281.200 €
				97.623.184,05 €

Figure 3.29

Consequently, for what regards the overall grand total tax [Figure 3.30], all the measures are increased. Therefore, the overall total goes from € 199.117.251 to € 210.957.380.

Primary Urbanization works	45.965.216 €
Secondary Urbanization works	42.133.663 €
Total	88.098.879 €
Extraordinary duties	35.953.969 €
Total	124.052.848 €
Standard Monetization	43.493.213 €
Legal interests	1.848.164 €
Non-deductible works	21.563.155 €
Additional duty	20.000.000 €
Total tax	210.957.380 €

Figure 3.30

In conclusion, when looking at the final income statement [Figure 3.31], the total costs, raised for all the project, have been increased from € 1.516.794.312 to € 1.558.091.466. It has been assumed, for this scenario and the others to come, that all the buildings and parking lots have respectively the same price for squared meter for the final customer, thus getting the same revenue amount for CityLife SpA. In particular, in this case it has been said that the Estate surface has been reduced by 1/3, thus the revenues coming from the sale of buildings, assuming that are directly proportional to the surface of the buildings and all costs the same, are reduced by 1/3. Considering the parking lots instead, the overall surface for their development has been reduced from 202.142 sqm to 158.342 sqm, which is more or less 78% of the original amount. Consequentially, taking into consideration the same logic that has been applied to the residences revenues, the revenues for parking lots sale have been reduced by 22%. The overall result is that the overall revenue for the project is reduced from € 1.855.000.000 to € 1.252.533.333. Therefore, the net income of the project is decreased from € 388.205.688, being the 18% of revenues, to € -305.558.132.

Economic aspects of the PII proposition	
Building surface (S.l.p.)	302.710
Garage and box surface	158.342
General costs	
Cost of the area	523.000.000 €
Total tax (maximum amount obtained from taxes and extraordinary duties + monetization + non-deductible works)	210.957.380 €
Additional duties	20.000.000 €
Maintenance of green areas	3.500.000 €
Duty on the construction cost	38.975.167 €
<i>Structural costs</i>	
Planning	109.355.706 €
Commercialization and marketing expenses	55.650.000 €
Demolition and preparatory works expenses	35.000.000 €
Other costs (structure, insurance, consulting..)	52.159.559 €
Total	1.048.597.811 €
Specific costs	
Construction costs of buildings	386.807.234 €
Constriction costs of parking lots	61.933.250 €
Unexpected events	60.753.170 €
Total	509.493.654 €
Total project costs	1.558.091.466 €
Revenues from sale of buildings	1.143.333.333 €
Revenues from sale of parking lots	109.200.000 €
Total revenues	1.252.533.333 €
Net income	-305.558.132 €
% on revenues	-24%

Figure 3.31

3.2.3 Residences scenario

The third analysis regards the Residences function. This part of the Estate area is one of the cores of the project and also the main revenue stream of the project. Moreover, this is the Buildable Surface's function with the largest coverage and the biggest impact on costs and therefore taxes.

Consequently, it is interesting to look at the impact on the data of a reduction and an increase of this function within the same Building Surface as the one that has been defined in the *as is* scenario. This will allow to

keep the overall surfaces for each function controlled and avoid changes which are too unrealistic.

Therefore, this macro scenario will be divided as the Green one in two smaller ones which will be compared to the *as is* figures. In both micro scenarios the Residences function will be reduced or increased by half of its original *as is* measure. This amount has been decided in order to obtain a significant change in the numbers that would make it easier to have a discussion on them.

3.2.3.1 Residences surface - Reduced

The starting assumption of this scenario is that the Residences function, which is part of the Buildable Surface, is reduced by half of its *as is* measure. The consequence is that a remaining 74.204 sqm are missing to reach the original 292.910 sqm again. Since in the *as is* scenario the Commercial function is 20.000 sqm, while the Tertiary one is 120.472 sqm, this means that the Commercial function is more or less 1/6 of the Tertiary one. Therefore, the redistribution of the missing 74.204 sqm in the new scenario has been assigned dividing this number by six and putting 1/6 (12.138 sqm) to the Commercial function and 5/6 to the Tertiary function (61.836 sqm). The rationale behind this logic is to keep the proportions between the functions stable. The result is that the Residences function has been reduced from 148.407 sqm to 74.204 sqm, while the Tertiary one has increased from 120.472 sqm to 182.308 sqm and the Commercial one from 20.000 sqm to 32.368 sqm [Figure 3.31].

The Buildable Surface is divided in:	
Residence	74.204
Tertiary	182.308
Commercial	32.368
Total project surface in scope	288.880
Existing surface	
Palazzine Orafi	4.030
Total surface	292.910

Figure 3.31

This consequently has a first, direct impact on the number of inhabitants expected, which is reduced from 4.452 to 2.226, and on the requested areas for public services and of public interest. In fact, the residences requested are reduced by more or less 100.000 sqm and therefore the connected requested areas are reduced from 430.225 sqm to 332.276 sqm [Figure 3.32].

Requested areas for public services and of public and general interest	
Residence (44mq/inhanbitants)	97.949
Other functions (tertiary, commercial, services) (80% Buildable surface)	234.328
Total	332.276

Figure 3.32

As a consequence, in Figure 3.33 it is possible to see the evolution in the difference between the standard areas requested and the ones realized, considering that originally the percentage of the realized ones was 38,56% and now it is 49,93%.

Standard project areas	
Public parking lots	27.000
Standard areas	
Squares and public places + horizontal projection of the above ground part of the buildings	38.442
Park and green areas	100.468
Total	165.910
Standard areas requested	332.276
Difference between the ones realized	166.366

Figure 3.33

The next step to look at is the costs and the taxes. In Figure 3.34 it is shown the variation of the Construction costs with respect to the base *as is* case. The rationale for the adaptation of the parking lots dimension with respect to their function has been to respect the change that has been made for the surface of their function of reference. This means that for the residences for example, since they have been halved, the lots themselves have been halved and therefore the surface covered by the parking lots for this function has been halved. For the Tertiary function instead, it has been explained at the beginning of this scenario that its surface has been increased by 61.386 sqm, which corresponds to more or less half of its original surface measure (120.472 sqm), therefore the surface for the parking lots has been increased by 0,5 and the lots themselves have been increased by the same logic. In the end, for the Commercial function, the increase that has been assigned to it at the beginning of this scenario has been of 12.138 sqm, which corresponds to more or less 60% of the original surface measure (20.000 sqm). This means that the lots assigned to this function have been increased by their 0,6, as well as the surface on which they are built. The overall result is that the total costs are increased from € 428.414.361 to € 433.605.109.

Construction costs for private functions			
Private functions	S.l.p	mq costs	Total
Free residence (including adjacent lots and external areas)	74.204	1.050 €	77.913.675 €
Underground private parking lots (2250 lots)	73.000	400 €	29.200.000 €
Tertiary	182.308	1.454 €	265.026.609 €
Underground private parking lots (1725 lots)	54.223	375 €	20.333.625 €
Commercial	32.368	900 €	29.131.200 €
Underground private parking lots (1040 lots)	32.000	375 €	12.000.000 €
		Total	433.605.109 €
Total construction costs of private functions			
Buildings			372.071.484 €
Parking lots			61.533.625 €
		Total	433.605.109 €

Figure 3.34

Consequently, the tax on the construction costs is increased from € 31.594.264,8 to € 38.977.537,2 [Figure 3.35].

Tax on the construction costs			
Functions	S.l.p.	tax/mq	Total
Free residence	74.204	60 €	4.452.210 €
Tertiary	182.308	173,4 €	31.612.207,2 €
Commercial	32.368	90 €	2.913.120 €
		Total	38.977.537,2 €

Figure 3.35

The other taxes, the urbanization ones, are increased as well [Figure 3.36]. In particular, the primary urbanization ones are increased from € 37.919.301,21 to € 44.577.656,45. The overall effect is an increase in the overall urbanization tax from € 89.335.094,19 to € 94.669.350,05.

Urbanization taxes according to the last update 21.12.2007				
Urbanization taxes in force	Residence (mc)	Tertiary (mq)	Commercial (mq)	Total
Surfaces S.l.p. (mc for residence)	222.611	182.308	32.368	
Taxes primary (mc)	23,97 €	193,97 €	193,97 €	
Taxes secondary (mc)	38,02 €	152,43 €	152,43 €	
Overall taxes primary	5.335.973,69 €	35.362.282,76 €	3.879.400 €	44.577.656,45 €
Overall taxes secondary	8.463.651,21 €	27.789.208,44 €	3.048.600 €	39.301.459,65 €
			Total	83.879.116,10 €
Taxes additional duty				
Extraordinary duty	11.851.783,02 €	20.670.585,76 €	5.431.600 €	35.953.969 €
			Total	119.833.085 €
Reduction factor for the urbanization taxes		0,70		
Total urbanization taxes	9.659.737,43 €	44.206.043,84 €	4.849.600 €	58.715.381,27 €
Extraordinary duty	11.851.783,02 €	20.670.585,76 €	5.431.600 €	35.953.969 €
	Total	21.511.520,45 €	64.876.629,60 €	10.281.200 €
				94.669.350,05 €

Figure 3.36

Consequently, the overall grand total tax, as shown in Figure 3.37, increases from € 199.117.251 to € 206.737.617 [Figure 3.37].

Primary Urbanization works	44.577.656 €
Secondary Urbanization works	39.301.460 €
Total	83.879.116 €
Extraordinary duties	35.953.969 €
Total	119.833.085 €
Standard Monetization	43.493.213 €
Legal interests	1.848.164 €
Non-deductible works	21.563.155 €
Additional duty	20.000.000 €
Total tax	206.737.617 €

Figure 3.37

In the end, looking at the Income Statement [Figure 3.38], it is possible to see that, as assumed in the beginning, the Building Surface has not changed with respect to the *as is* scenario, while the Garage and Box Surface, meaning the parking lots' one, has been reduced from 202.142 sqm to 159.223. The already discussed changes in the construction costs and consequently the taxes, increase both the General and Specific costs, generating an increase in the overall project costs from € 1.516.794.312 to € 1.536.988.698. With regards to the revenues instead, it has been assumed that the revenues from sale of buildings remain unchanged. In fact, according to the changes made to redistribute the project surface in order to keep the Building one unchanged, it holds that the overall buildings remain the same as the *as is* scenario, they just have different ending use. On the contrary, revenues coming from sale of parking lots change. In fact, the overall surface for the parking lots in this scenario is more or less 80% of the *as is* one, therefore, assuming a direct proportionality between the revenues and the surface and also that all the parking lots cost the same, the revenues have been reduced by 20% of the original amount, so from € 140.000.000 to € 112.000.000. The result is that the overall revenues for the project are reduced from € 1.855.000.000 to € 1.827.000.000.

In conclusion, the project net income is reduced from € 338.205.688 to € 290.011.302. Consequently, the percentage of net income on revenues decreases from 18% to 16%.

Economic aspects of the PII proposition	
Building surface (S.l.p.)	288.880
Garage and box surface	159.223
General costs	
Cost of the area	523.000.000 €
Total tax (maximum amount obtained from taxes and extraordinary duties + monetization + non-deductible works)	206.737.617 €
Additional duties	20.000.000 €
Maintenance of green areas	1.750.000 €
Duty on the construction cost	38.977.537 €
<i>Structural costs</i>	
Planning	109.355.706 €
Commercialization and marketing expenses	55.650.000 €
Demolition and preparatory works expenses	35.000.000 €
Other costs (structure, insurance, consulting..)	52.159.559 €
Total	1.042.630.419 €
Specific costs	
Construction costs of buildings	372.071.484 €
Constriction costs of parking lots	61.533.625 €
Unexpected events	60.753.170 €
Total	494.358.279 €
Total project costs	1.536.988.698 €
Revenues from sale of buildings	1.715.000.000 €
Revenues from sale of parking lots	112.000.000 €
Total revenues	1.827.000.000 €
Net Income	290.011.302 €
% on revenues	16%

Figure 3.38

3.2.3.2 Residences surface - Increased

The second part of the Residences scenario, as anticipated, has as main assumption the fact that the surface for the Residence function is doubled and the other two functions, the Tertiary and Commercial one, are adjusted accordingly in order to keep the Building surface unchanged.

Therefore, as displayed in Figure 3.39, the Residences become 222.611 sqm instead of their initial *as is* 148.407 sqm. For what regards the other two functions, the rationale for their adjustment is the same that has been followed in paragraph 3.2.3.1 for the *reduced* scenario. In fact, after the calculation of the new Residence surface it is possible to see that keeping the other surfaces with their *as is* parameters, the *as is* Buildable Surface (292.910 sqm) is overcome by 74.203 sqm. This means that these sqm must be subtracted from the other two remaining functions. As explained, the *as is* Commercial function surface is more or less 1/6 of the Tertiary one, so to keep the balance between the functions unchanged, 1/6 of these 74.203 sqm are subtracted from the Commercial function (meaning 12.367 sqm), while the remaining 5/6 from the Tertiary one (meaning 61.836 sqm). The ending result is that the Tertiary function now is 58.636 sqm instead of 120.472 sqm and the Commercial one is 7.633 sqm instead of 20.000 sqm.

The Buildable Surface is divided in:	
Residence	222.611
Tertiary	58.636
Commercial	7.633
Total project surface in scope	288.880
Existing surface	
Palazzine Orafi	4.030
Total surface	292.910

Figure 3.39

A consequence of the increase of the Residences area is the increase in the number of inhabitants forecasted for the neighbourhood which goes from 4.452 to 6.678. Therefore, the requested areas for public services go from 430.225 sqm to 528.174 sqm due to the huge increase in the requested areas for the residences, which is dependent on the number of inhabitants expected [Figure 3.40].

Requested areas for public services and of public and general interest	
Residence (44mq/inhanbitants)	293.846
Other functions (tertiary, commercial, services) (80% Buildable surface)	234.328
Total	528.174

Figure 3.40

The result is that the difference between the *a Standard* areas requested and the ones realized is of 362.264 sqm [Figure 3.41]. In this case the percentage of *a Standard* areas which have not been realized is 31,41% with respect to the 38,56% initial one.

Standard project areas	
Public parking lots	27.000
Standard areas	
Squares and public places + horizontal projection of the above ground part of the buildings	38.442
Park and green areas	100.468
Total	165.910
Standard areas requested	528.174
Difference between the ones realized	362.264

Figure 3.41

Looking now at the costs and taxes, for this scenario the increase in the Residence function and the related parking lots, which have been both doubled in the regards of the surface and lots number, has been practically offset by the reduction in the other two functions' surfaces [Figure 3.42]. In fact, following again the same logic as the one applied to Figure 3.34 in the previous micro scenario, since the increase in the Tertiary function has been of 61.836 sqm, which corresponds to more or less half of its original *as is* surface (120.472 sqm), the corresponding parking lots have been halved both in their surface measure and in the number of lots. The same holds for the Commercial function, which has been reduced by an amount (12.367 sqm) which corresponds to 1/6 of its *as is* one. Therefore, the corresponding parking lots are decreased by 60% as well as the number of the lots itself.

The ending result is that the total construction costs are reduced from € 428.414.361 to € 423.228.262.

Construction costs for private functions			
Private functions	S.l.p	mq costs	Total
Free residence (including adjacent lots and external areas)	222.611	1.050 €	233.741.025 €
Underground private parking lots (6750 lots)	219.000	400 €	87.600.000 €
Tertiary	58.636	1.454 €	85.240.912 €
Underground private parking lots (575 lots)	18.071	375 €	6.776.625 €
Commercial	7.633	900 €	6.869.700 €
Underground private parking lots (260 lots)	8.000	375 €	3.000.000 €
		Total	423.228.262 €
Total construction costs of private functions			
Buildings			325.851.637 €
Parking lots			97.376.625 €
		Total	423.228.262 €

Figure 3.42

Consequently, the corresponding tax is decreased as displayed in Figure 3.43 from an original € 31.594.264,8 to € 24.211.082,4.

Tax on the construction costs			
Functions	S.l.p.	tax/mq	Total
Free residence	222.611	60 €	13.356.630 €
Tertiary	58.636	173,4 €	10.167.482,4 €
Commercial	7.633	90 €	686.970 €
		Total	24.211.082,4 €

Figure 3.43

With regards to Urbanization taxes, the same holds. The Residence function has a total urbanization tax increased, while the others functions' decreased. The overall result is that, keeping as usual the extraordinary tax unchanged, the total urbanization tax is decreased from € 89.335.094,19 to € 84.000.838,34 as seen in Figure 3.44.

Urbanization taxes according to the last update 21.12.2007				
Urbanization taxes in force	Residence (mc)	Tertiary (mq)	Commercial (mq)	Total
Surfaces S.l.p. (mc for residence)	667.832	58.636	7.633	
Taxes primary (mc)	23,97 €	193,97 €	193,97 €	
Taxes secondary (mc)	38,02 €	152,43 €	152,43 €	
Overall taxes primary	16.007.921,06 €	11.373.624,92 €	3.879.400 €	31.260.945,98 €
Overall taxes secondary	25.390.953,63 €	8.937.885,48 €	3.048.600 €	37.377.439,11 €
			Total	68.638.385,09 €
Taxes additional duty				
Extraordinary duty	11.851.783,02 €	20.670.585,76 €	5.431.600 €	35.953.969 €
			Total	104.592.354 €
Reduction factor for the urbanization taxes 0,70				
Total urbanization taxes	28.979.212,28 €	14.218.057,28 €	4.849.600 €	48.046.869,56 €
Extraordinary duty	11.851.783,02 €	20.670.585,76 €	5.431.600 €	35.953.969 €
	Total	40.830.995,30 €	34.888.643,04 €	10.281.200 €
				84.000.838,34 €

Figure 3.44

The ending result, collecting all the data from the taxes paid, is that the overall grand tax is reduced from € 199.117.251 to € 191.496.886 [Figure 3.45].

Primary Urbanization works	31.260.946 €
Secondary Urbanization works	37.377.439 €
Total	68.638.385 €
Extraordinary duties	35.953.969 €
Total	104.592.354 €
Standard Monetization	43.493.213 €
Legal interests	1.848.164 €
Non-deductible works	21.563.155 €
Additional duty	20.000.000 €
Total tax	191.496.886 €

Figure 3.45

In the end, the final table to analyse is, as with the other scenarios, the Income statement one. It is possible to see in Figure 3.46 that the Building Surface is kept unchanged, while the Garage and Box one (parking lots) is increased from 202.142 sqm to 245.071 sqm. After the already discussed changes in costs and taxes, the total project costs are decreased from € 1.516.794.312 to € 1.496.604.666. With regards to the revenues, the ones coming from the sale of buildings are kept unchanged following the same logic of the previous micro scenario, meaning that being the Buildable

Surface unchanged, it has been assumed that an unchanged surface will be sold to third parties, therefore the same revenues will be collected by CityLife SpA with regards to the *as is* scenario. For the revenues coming from the sale of parking lots, the new surface dedicated to this use is 1,2 times the *as is* one, therefore, the revenues, assuming that they are proportional to the surface and all the lots cost the same, are increased by 1,2 of their original *as is* amount. The overall number is consequently increased from € 1.855.000.000 to € 1.883.000.000.

In the end, the net income of the project is increased from € 338.205.688 to € 386.395.334: its percentage on revenues increases from 18% to 21%.

Economic aspects of the PII proposition	
Building surface (S.l.p.)	288.880
Garage and box surface	245.071
General costs	
Cost of the area	523.000.000 €
Total tax (maximum amount obtained from taxes and extraordinary duties + monetization + non-deductible works)	191.496.886 €
Additional duties	20.000.000 €
Maintenance of green areas	1.750.000 €
Duty on the construction cost	24.211.082 €
<i>Structural costs</i>	
Planning	109.355.706 €
Commercialization and marketing expenses	55.650.000 €
Demolition and preparatory works expenses	35.000.000 €
Other costs (structure, insurance, consulting..)	52.159.559 €
Total	1.012.623.233 €
Specific costs	
Construction costs of buildings	325.851.637 €
Constriction costs of parking lots	97.376.625 €
Unexpected events	60.753.170 €
Total	483.981.432 €
Total project costs	1.496.604.666 €
Revenues from sale of buildings	1.715.000.000 €
Revenues from sale of parking lots	168.000.000 €
Total revenues	1.883.000.000 €
Net Income	386.395.334 €
% on revenues	21%

Figure 3.46

3.2.4 Social Scenario

The last scenario that will be presented in this chapter is the *Social Scenario*. With respect to the others presented, this scenario does not include any change in the surfaces built. The data of interest here is only the price of the residences present in the project.

More precisely, until this moment, for all the scenarios the constant assumption has been that the final prices at which the residences are sold are equal for all of them. In this scenario instead, it is assumed that 35% of the existing residence surface is sold at *controlled prices*. This means that prices to the final customer are reduced in order to allow people with lower income (e.g. young families, young people...) to join the neighbourhood that otherwise would be inaccessible due to the high prices.

Taking again as base case the *as is* scenario, the only two measures that change are the revenues in the Income Statement. In this case, as displayed in Figure 3.47, the calculation considered for the revenues of both the residences and the related parking lots at *controlled prices*, for which the same logic has been applied, has been made based on a simplified version of the formula that the Municipality of Milan usually applies for this type of residences, which is a certain percentage of construction costs plus 20% of the non-controlled price. Therefore, since it has been assumed that for this scenario 35% of the residences of the project are sold with *controlled prices* and 65% with market ones, the overall revenues have been respectively calculated by summing up three elements. The first part of the formula is the 65% of the initial gains amount which represents the residences at market prices: it has been assumed that the revenues are directly proportional to the surface considered and in this case it has been taken 65% of its total. Then, this value is summed with the 35% of

residence surface multiplied by the 35% of the construction costs, plus the 20% of the initial revenues measure, which represent the Municipality formula for the calculation of the revenues coming from *controlled* priced residences sales. In the second part of the formula, it has been used 35% as it has been assumed, along with the rest of the scenarios, that the costs are directly proportional to the surface in scope, thus if the surface for the *controlled* price residences is the 35% of the original one, the costs will be 35% of the original one, plus the 20% as the Municipality formula says.

The result is that the revenues from the sale of buildings decrease from € 1.715.000.00 to € 1.476.838.850, while the ones from the sale of parking lots decrease from € 140.000.000 to € 126.154.000. Therefore, the overall revenues decrease from € 1.855.000.000 to € 1.602.992.850. This, by keeping the costs unchanged, results in a total net income of € 86.198.539, being 5% of the revenues.

Economic aspects of the PII proposition	
Building surface (S.l.p.)	288.879
Garage and box surface	202.142
General costs	
Cost of the area	523.000.000 €
Total tax (maximum amount obtained from taxes and extraordinary duties + monetization + non-deductible works)	199.117.251 €
Additional duties	20.000.000 €
Maintenance of green areas	1.750.000 €
Duty on the construction cost	31.594.265 €
<i>Structural costs</i>	
Planning	109.355.706 €
Commercialization and marketing expenses	55.650.000 €
Demolition and preparatory works expenses	35.000.000 €
Other costs (structure, insurance, consulting..)	52.159.559 €
Total	1.027.626.781 €
Specific costs	
Construction costs of buildings	348.961.111 €
Constriction costs of parking lots	79.453.250 €
Unexpected events	60.753.170 €
Total	489.167.531 €
Total project costs	1.516.794.312 €
Revenues from sale of buildings	1.476.838.850 €
Revenues from sale of parking lots	126.154.000 €
Total revenues	1.602.992.850 €
Net Income	86.198.539 €
% on revenues	5%

Figure 3.47

3.2.5 Summary of the four scenarios

In the following table [Figure 3.48] a summary of the main differences with regards to the assumptions and most important numbers presented for each scenario is presented for an easier comparison among them:

	As is scenario	Green Scenario		Residences Scenario		Social Scenario
		Estate unchanged	Estate reduced	Residences reduced	Residences increased	
Buildable Surface	292.910	350.679	306.741	292.910	292.910	292.910
Residence	148.407	148.407	104.469	74.204	222.611	148.407
Tertiary	120.472	178.241	178.241	182.308	58.636	120.472
Commercial	20.000	20.000	20.000	32.368	7.633	20.000
Expected inhabitants	4.452	4.452	3.134	2.226	6.678	4.452
Green spaces	100.468	150.702	150.702	100.468	100.468	100.468
Estate surface	114.620	114.620	76.413	114.620	114.620	114.620
Realized areas over requested areas	38,56%	45,37%	56,39%	49,93%	31,41%	38,56%
Construction costs	428.414.361 €	512.395.034 €	448.740.484 €	433.605.109 €	423.228.262 €	428.414.361 €
Tax on construction costs	31.594.264,8 €	41.611.426,7 €	38.975.166,7 €	38.977.537,2 €	24.211.082,4 €	31.594.264,8 €
Urbanization taxes	89.335.094,19 €	103.342.945,56 €	97.623.184,05 €	94.669.350,05 €	84.000.838,34 €	89.335.094,19 €
Total tax	119.117.251 €	219.128.468 €	210.957.380 €	206.737.617 €	191.496.886 €	119.117.251 €
Total project costs	1.516.794.312 €	1.631.678.364 €	1.558.091.466 €	1.536.988.698 €	1.496.604.666 €	1.516.794.312 €
Total project revenues	1.855.000.000 €	1.855.000.000 €	1.252.533.333 €	1.827.000.000 €	1.883.000.000 €	1.602.992.850 €
Net Income	338.205.688 €	223.321.636 €	- 305.558.132 €	290.011.302 €	386.395.334 €	86.198.539 €
% on revenues	18%	12%	-24%	16%	21%	5%

Figure 3.48

4.DISCUSSION

The Data Analysis chapter has shed a light on different interesting features of the CityLife project and the aspects that characterize it. Starting from the *as is* scenario, the one referring to the actual, real situation of the project, going then to the Green scenario, the Residences and the Social ones, there are numerous discussion points that can be explored by looking at the data. In fact, as mentioned in the previous chapter, the Scenario model that has been developed for the analysis of the case is itself not enough to capture the complexity and the nature of the PPP, in the case of a Urban redevelopment project. The conclusion is that a qualitative, case-by-case discussion on the data may be presented along with the mathematical part to have a truly complete model.

4.1 As is scenario

According to the analysis of the *as is* scenario, the project is structured in such a way that its surfaces are mainly distributed to the Residences function, then to the Tertiary function and in the end, to a much smaller amount, to the Commercial function. Thanks to this distribution of the total space, the total revenues gained by CityLife SpA from the sale of the Residences and the related parking lots are high enough to completely cover for the taxes and costs paid for the development of the entire project, causing the total final net income to be positive overall. In this case, as in all the other scenarios that have been presented, the Municipality gains on its side only the total amount of taxes paid by the private party and has no cost to bear. In fact, by yielding to the private party its right to build and all the consequent rights connected to the development of the urbanization

project, the Municipality loses its privilege to gain any other revenue from the project development other than the taxes, but at the same time avoids sustaining any cost.

4.2 Green Scenario

The first scenario that has been developed by manipulating the *as is* data is the Green one. The choice has fallen on this macro topic, because of the ongoing discussion on the lack of green spaces in Milan, which is usually considered as a city which still needs to work a lot on its green and sustainable development. In fact, as reported in the paper by Sanesi et al (2017), “the Metropolitan Area of Milan is represented by (i) high levels of urbanisation; (ii) high levels of soil sealing; [...] and (iv) climate change impacts”.

As previously explained, this scenario has been developed in two parts, thus following two different hypotheses. In the first, *Estate unchanged* scenario, the real estate surface remains stable, while the green surfaces are increased by half of their *as is* measure. The result is an increase of the overall Buildable Surface, on which the taxes and costs are calculated, and therefore a consequent increase of these last two measures. Here, construction costs have been calculated on Green spaces too, because the creation of these areas requires the implementation of different interventions, which are not of a strictly building type. In fact, when they are created starting from an area like the CityLife one is, meaning part of the city centre and therefore highly urbanized, the developer may need to perform a reclamation of the area, the creation of an irrigation plant and other facilities like this that make a park suitable for the public use. However, since the green spaces considered in this project are mainly public

ones and normally for their nature do not provide any revenues to their developer, the raise in costs and taxes paid by CityLife SpA to create them has not been counterbalanced by a raise in revenues.

The second scenario instead, called *Estate reduced*, implies a reduction of the Estate surface by 1/3 along with the same increase performed in the other scenario for the Green spaces. This change in the data implies again an increase in taxes and costs, which results precisely from the fact that the Residences function is reduced by less than what the Tertiary surface has been increased (this is in fact the surface in which the Green spaces have been included for the sake of the model). As previously mentioned, there is no additional revenues gained by CityLife SpA in this context and the fact that the Residences are decreased even reduces their surface, creating a negative net income for the project. It is also interesting to notice that the reduction in the Residences surface implies a decrease in the number of inhabitants projected for the area, which goes in contrast with the fact that the Green public areas are in this scenario increased. It is in fact clear that these areas are available to every citizen who wants to use them, but of course the most direct use comes from the very inhabitants of CityLife. Then, it is also important to highlight that this scenario among all the others has scored, with respect to the requested *a Standard* areas, the highest percentage of realized areas among all scenarios which are 56% with respect to the requested ones.

The main result that can be inferred from this analysis is that either way, meaning with a reduction or not of the Residential area, which as mentioned in Chapter 3 is the core of the CityLife project and its main component, the introduction of more Green Areas is not convenient for the private party. In particular, in the *non-reduction* case the result may only be a decrease of the Net Income of the project, which however remains positive in the end,

while in the *reduction* case this even becomes a negative number. As it seems straightforward to understand, the private party can only bear costs from this type of intervention, while the public party can only gain the increased taxes coming from the boosted project surface. At the same time, the Municipality gains also a less material reward here, as an increase in the Green Areas of the city is highly beneficial in the long term for the population.

Overall, it can be stated that for example a focus in the project's marketing campaign about the high number of Green Areas may result in a positive impression among the public and investors for both the two parties involved. However, this may not be enough for the private one to agree on building more green spaces than what is profitable for her. Therefore, since for the reasons which have already been explained, for urban projects it is highly preferred not to have underrepresented Green Spaces, the conclusion is that the Municipality must find more convincing ways to involve the private party in such interventions.

For example, there already exists for the CityLife project, thus it should exist for the entire Milan's region (see Chapter 3), a discount on taxes for the private party based on if some intervention in the regards of energy savings and bioclimatic building has been introduced in the project development. A discount on taxes of this type, based instead on the proportion of green spaces with respect to other surfaces developed, can be a good incentive for the private party to collaborate more in this sense. The Municipality may also try to involve into a negotiation in this sense by introducing in the PII a compulsory percentage of Green Areas to build under the promise that it will contribute for a certain amount or proportion to the construction costs of those areas. This action may come along with the discount in the taxes.

Another suggestion may be to consider the *a Standard* areas, that have been presented in Chapter 3, Figure 3.4, which are some public areas requested by the Municipality and not fully mandatory. In fact, they are made by Green spaces and squares mainly and their sum has to be at least equal to the transformation area in scope for the PII. Therefore, considering that the *a Standard* areas are in fact, public squares and green areas, a new rule may be introduced to make sure that more of the requested surface is built. In fact, it can be noted that in all the scenarios that have been analysed the areas that have been realized in practice are always between only 31% to 56% of the requested ones. Therefore, for example, a penalty may be introduced if at least a certain percentage of the requested areas, considering a minimum percentage of Green spaces, is not built. This way the private party may prefer to lose something in profitability, like for the first Green scenario, instead of paying the penalty, if this is high enough. However, this intervention may be dangerous, because if instead the proportion of Green Spaces requested is too high for the project to be profitable in the end, the result may be that the private party decides to give up.

Nonetheless, it should be noted that the CityLife project has actually made different efforts towards green spaces and their development. For example, all the parking lots and the streets that were once in the area of development of the project have been brought underground in order to give more space to the development of the CityLife park and the public squares. In fact, the green areas are central to the project and the CityLife park is well distributed, as it can be seen in the planimetry³ in Figure 4.1

³ Taken from the *Preliminary Document to the Planning* (Documento Preliminare alla Progettazione – DPP) redacted by the joint table between CityLife SpA and Milan Municipality teams



Figure 4.1

More precisely, there have been some key guidelines on which the park's project has been developed: safeguard of bio-diversity, use only of local species, reduction of both acoustic and atmospheric pollution and CO2 emissions, use of as much as possible renewable energy sources. The CityLife park is the second biggest public one in the city centre of Milan.

4.3 Residences scenario

This second scenario case has been chosen both for the centrality of the role of the surfaces covered by the Residences in the CityLife project and the stream of revenues that they are able to generate. It has been interesting here to see both the effect of a 50% reduction and increase in the surface of this core function. The second important assumption of this scenario has been to keep the overall Building Surface of the project stable, thus varying also the surface of the other functions, in order to keep all the proportions stable.

For the *Residences reduced* micro scenario, the Tertiary and Commercial functions' surfaces have been increased according to the reduction of the Residences one and the expected inhabitants have been halved. The percentage of standard areas built with respect to the ones requested is worsened in this case, as the requested ones are augmented due to the increase in the Residences surface. Moreover, the increase in the Tertiary and Commercial function needed to offset the Residences decrease is so big that both the costs and taxes are increased. However, because of the redistribution in the parking lot surface (remember from the Data Analysis chapter that the buildings' one remains unchanged), revenues are reduced too, leading to a total reduction of the net income with respect to the *as is* one.

Regarding the *Residences scenario increased* instead, the exact contrary with respect to the other scenario holds. What it is interesting to notice here is that, for what regards the proportion between the *a Standard* areas requested and the ones realized, among all the scenario analysed this is the one which has scored the lowest percentage of realized areas, which are 31,41% of the requested ones. In fact, the increase in the residence's surface without any other change in the overall surface, has only increased the requested areas.

From the analysis of these two scenarios it can be inferred that the Residence function leads the way for economic profitability for both the private and the public party. In fact, both the revenues from their sale, the CityLife's profits, and the taxes paid by the SpA, which are the Municipality's profits, are strictly related and directly proportional to the surface of this function. As a consequence, any change in this measure, without an offsetting change in other elements of the project, may be of great impact. However, in neither analysed cases the net income of the project decreases

so much that it becomes negative, but this is mainly thanks to the fact that the overall Building Surface has been kept unchanged, therefore the revenues did not have the chance to drop too much with respect to the initial amount. This aspect of the project may be dangerous because there is a high incentive for both parties to invest more in the Residence function than in the others, since it is the most lucrative, and this may cause the neglect of other aspects for the project. For example, it may go to the disadvantage of the creation of Green Spaces, or of useful infrastructures such as public schools, sport centres... In fact they can also generate a stream of revenues, but it will always be lower than the one started by the sale of apartments.

In this context, it has often been contested to the CityLife project that it has become an example of high financialization of the real estate sector. As explained in Chapter 1.3, according to Mosciaro (2020), financialization is the practice of introducing “finance led practices in the most varied sectors”. In fact, the CityLife project was announced in 2004, which was a booming period for the real estate market and therefore for companies like Generali, which are not directly involved in their core business in this industry, it seemed like an interesting option to invest some spare cash in such an asset. The problem is that the first CityLife’s buildings began to be marketed in 2009 when the effects of the 2008 crisis hit for the first time the real estate sector. In fact, this is among the ones that in times of crises usually perish the most, mainly because of its large dependence on bank loans. That is why so many variations of the PII have been made during the years and the proportions allocated to the different functions have been adjusted overtime. For example, one of the biggest changes that has been made with respect to the initial project idea has been the decision to rent the three towers Isozaki, Libeskind and Hadid to the occupiers instead of directly

selling them. The aim of this action seems to create a constant financial stream as the rest of the project was not profitable as expected at the beginning. This poses an issue on the data analysis presented as the revenues presented in the Economic Feasibility Report only come from Sale of buildings and parking lots, thus it may not have been considered the rent of the three skyscrapers in the data. Nonetheless, not knowing the characteristics of this rent such as the time period for which it has been stabilised and the monetary amount of it, it would have been difficult to actualize the payment and insert it among the other revenues. It is sure that adding this measure, profitability would have increased for the overall project, but it would have not changed significantly the ending results and consequent discussion on the analysis, if it is again assumed that it directly depends on the surface measure.

In conclusion, according to Mosciaro (2020) "The CityLife project mobilised the idea of land as a financial asset [...] the built environment is just being produced for revenue-generating purposes". Indeed, especially in this case, the biggest critiques to the project have been made with regards to the wide freedom the private party had in developing the urban space. According to many, it seemed that the interests of the city and its broad public/citizens went straight after the ones of the stakeholders and especially the investors of CityLife SpA. In fact, CityLife is often perceived as an excluding neighbourhood, characterised by high prices for living, accessible only to a small part of the population. Due to the introduction of high residential prices and standards, as most of the residences offered in the CityLife are luxurious ones, high prices will be introduced and everything will become more exclusive in time in the neighbourhood. It also has been perceived that the Municipality has had no interest over the years in mitigating this involuntary effect of the project implementation, but instead

has been more occupied in keeping the private party involved as much as possible. In fact, the year 2008/2009 was a period of crisis also for the city of Milan, which did not have a lot of money itself and was in need of a strong financial partner, thus could not afford to let CityLife SpA loose even more of the ending profitability of the project. Some may also argue that this increasing elitization of the area has been a necessary prerequisite to create the iconic and unique neighbourhood the CityLife was meant to become since the beginning. Moreover, without the introduction of such high-end prices, especially for the residences, probably the project costs would never have been at least equalized because of the hit of the crisis.

4.4 Social scenario

The last scenario, that has been called the *Social scenario*, is strictly connected to the discussion in the end of paragraph 4.3 about the critiques on the elitization of the CityLife neighbourhood.

In fact, according to Diappi and Bolchi (2006), "the centre of Milan is assisting to the transformation of already gentrified prosperous and solid upper-middle class neighbourhoods into much more exclusive and expensive enclaves. This intensified gentrification is happening in few selected areas that have become the focus of intense and conspicuous consumption by a new generation of very rich 'financiers'". The time in which the scholars were writing about this topic seems far away, but it is a fact that the gentrification problem during the years worsened for the city. Indeed, according to the model developed in the cited paper to understand the evolution of the gentrification phenomenon along with the growth of the neighbourhoods of the city, "social benchmarks are continuously moving upward producing new waves of neighbourhoods gentrification" and

especially “when the new wave of demand emerges, the centre of the city is the first to be involved; here the prices increase at higher rate than in the rest of the urban area”.

One of the most popular interventions applied to mitigate the increasing gentrification of the city and especially certain areas usually is the introduction of a percentage of “*Conventioned building*” or housing based on Municipality agreement (*edilizia convenzionata*). This means that, some part of the total housing planned for the urbanization project in scope should be sold to the final owner at a price which is lower than the market one. In Milan, this usually is a certain percentage of the construction cost (usually related to the percentage to *controlled* price residences that will be considered in the project), plus 20% of the market price, but this calculation in Italy can vary from Municipality to Municipality and from region to region. The aim is to provide access to otherwise inaccessible areas to families with lower income, young people at the beginning of their career path... It is important to notice that this concept is different from the one of council houses and many constraints are applied in these cases, especially on the possibility of selling/renting or not the house in future years.

Therefore, by applying a percentage of *Conventioned building* to the *as is* scenario numbers in the Social one, it can be noticed that the overall result is a smaller net income, and no other effect is detected on the rest of the data. This means that for the Municipality the introduction of such a measure does not implies any reduction in the profits, as taxes are not decreased. Therefore, as for the Green scenario, the private party must receive some form of incentive from the public one to perform such a social measure. The suggestions here are the same as the ones given in paragraph 4.2 for the Green scenario, in particular a discount on the taxes connected

and directly correlated to the Residences surface which will be sold at the Conventioned price.

Usually, for almost all urbanization projects of this type, a percentage of Conventioned building is taken in consideration in the project realization. For the CityLife instead, it has been decided not to introduce any, and this has been the basis for most of the critiques that have been reported at the beginning of this discussion paragraph. Again, the reasons behind this choice may be found in the crisis period during which the project started to be marketed, the high need for money the Municipality had in that timeframe and the goal they had of creating an exclusive, branding neighbourhood.

4.5 Limitations

The development of this model has different limitations. First of all, it is based on one single business case. In fact, this limits the broadness of the findings and thus their applicability. Therefore, the study of one or more alternative cases, especially from different countries would have been beneficial in this sense.

Subsequently, the model will never be complete without a qualitative discussion, thus limiting its generalizability. This is limited also by the fact that urban renewal and redevelopment projects usually are highly dependent on national laws and standards. These flaws in the analysis of the case have been anticipated in Chapter 2, where it has been explained that unluckily the scope of urban renewal projects is so broad that it is very difficult to only perform a costs-benefit analysis and be complete in the discussion of the case.

Another limit of this study regards the availability of data. In fact, it is very difficult to quantify all the costs and revenues for all the parties involved, especially the two main ones, and often these data, if present, are not made available.

Furthermore, the model has been based on one single document data, which especially for the revenues stream did not take into consideration a very broad array of factors. It is clear from the data analysis chapter that the Economic Feasibility Report is highly centred on the costs the private party has bear and lacks a deeper overview on the public party side. Therefore, there might be an underestimation of two aspects: first of the overall revenues gained by the public party, second of the costs incurred by the Municipality and the less monetary gains it earned. In fact, the Municipality has no direct costs to bear, but for the sake of completeness, it can be stated that some indirect ones are for sure encountered. For example, it has been stated that there is a joint table made up by people working for CityLife SpA and the Municipality of Milan. The development and continuous work of this institution can be considered as a cost for the Municipality in the wage of the employees who dedicated their working hours to this activity, for example. It has also been stated in Chapter 1 that this is a common instrument used in PPPs for coordination and governance, thus it is not proper only of the CityLife reality and can be considered as a costs for all Municipalities involved in PPPs. However, it has been decided not to insert this measure in the analysis as it would have been not significant with respect to the rest of the costs that have been analysed, thus not providing any meaningful insight in the development of the scenarios in terms of data changes. Nonetheless, it is something important to remind in the qualitative discussion of the case. The second important aspect to highlight regarding the Municipality concerns the gains it collected

from the project development. In fact, the merely monetary ones have been perfectly stated in the analysis through the display of the taxes paid by the private party, but there is a less monetary part that can be potentially explored. These taxes are indeed used by Municipalities to develop public infrastructures for public use, such as streets, public schools, public transportation improvements... Actions like these are not quantifiable in currency terms but may be very beneficial for a city and its inhabitants in the long term.

In the end, the costs and revenues showed in the document have been decided by the Municipality of Milan alone or in accordance with CityLife SpA. Therefore, these numbers have been taken as given and no insight on the rationale on the establishment of the price per squared meter for example is present in this work.

Due to these limitations, this scenario model is aimed at creating a base case for other scholars or parties involved in PPPs to analyse projects of interest according to the variables they have, taking into consideration not only the numbers and the mere profitability in terms of net income of the project and making comparisons among different possible assumptions.

5.CONCLUSION

It is now possible, after the discussion of the business case, to answer to the research question that is at the basis of this study: are urban redevelopment projects involving a private and public partnership profitable? Are they beneficial for the city they are developed for?

Referring to the first part of the research question, it should be considered that these type of projects are usually volatile in profitability. In fact, as demonstrated by the scenario analysis, the private investor performances, which usually are of an economic type, and the ones of the public party, which usually are of a social, urbanistic and environmental type, differ a lot from case to case due to the different assumptions made. Small changes in volumes, especially their destination of use, and other variables can cause big changes in the performance mix, breaking the point of equilibrium among the PPP parties very easily. Therefore, the profitability of the project highly depends, as stated by Stephenson (1991), on the relationship the two partners have. This means that, on one side, in order to choose among the scenarios it is necessary to understand which is the best equilibrium situation among the parties, in which wins are well balanced, making the investment sustainable and profitable for both. In fact, it is very difficult in practice to be able to conduct the right negotiation process and then closing it with the best side-by-side agreement. However for this goal to be achieved with highest probability, both parties should have at least the following characteristics:

- Strong technical and analytical expertise to create, understand and analyse different scenarios;
- Understanding of the other party core features and reasons in action;

- Ability and willingness to compromise, if necessary.

Another element to take into account, as explained in Chapter 1 where PPPs are described, is that everything depends on the degree of freedom and the number of responsibilities given by the public actor to the private one. As a general rule, following the performed analysis, it can be confirmed that, for the private party, profitability is usually more volatile because of the higher risks it takes, while for the public one usually these projects are a sure stream of revenues. In fact, this is perfectly in line with the features of PPPs listed in paragraph 1.3.1. Profitability also clearly depends on the very characteristics of the project. For example, it has been analysed that the introduction of features of less direct economic interest, such as increased green areas or social housing, in certain circumstances and without a counterbalancing effect given by the introduction of other more profitable ones, could lead to negative profitability overall for the private party and decrease Municipality's one too (sometimes it even stays unchanged).

In conclusion, on one hand the business entity involved in the project should be able to have an insight on its mission in general but also in the specific case in scope. This is fundamental to understand what in her opinion is the tolerable equilibrium between the economic profit that can be made out of the project and the social role she has in operating in urban renewal and requalification. In fact, there is the possibility for a broader scope of action and application of Corporate Social Responsibility principles for every private party involved in these PPPs. On the other hand, the Municipality has to draw the line between too much profitability coming for the project and social value that can be gained for the city. In fact, as shown, social measures are often scarce of revenue returns and a choice must be struck among these two factors. Here the key word is again balance, as both parties should aim at finding one among their often clashing position.

Without the willingness to compromise, nothing can be achieved, as in these projects neither of the two parties can act or decide or maximise its objective function on its own. Thus, a paralysis happens when partners hold on their radicalized positions, while if the private firm has a strong social responsibility mission/conscience and the PA is aware of the fact that investors want to be involved in a profitable project, this situation can be avoided.

Referring instead to the second part of the research question, it is difficult to assess if renewal projects are actually beneficial for the city in which they are developed. In fact, as explained, there is often the risk that the most “social” aspects are ignored to the benefit of other, more profitable ones. Moreover, as seen in the Discussion chapter, it is easier than expected to start the renewal of a neighbourhood which is in decline and end with a new area which is completely gentrified, even if this was not programmed. In fact, in Diappi and Bolchi (2006) it is explained how urban renewal is naturally connected with gentrification and it is very difficult to disentangle the two.

However, some other aspects may be taken into consideration. For example, it may be noted that the renewal of a neighbourhood, that would otherwise have been left in a degradation and abandoned status, attracts new capital and investment in the city, which is a benefit that in the long term and in indirect ways affects the entire population. Moreover, when these projects are implemented, infrastructures are improved not only in the renewed area, but also in the adjacent ones. There is of course a negative effect reflected in increased prices for living and renting houses, but this usually comes with better living conditions and offering for the inhabitants of that zone. Furthermore, reconnecting to the initial topic of the creative city, the components of the creative class are usually attracted

by these type of projects and may come to live in the area. Also, the creation of a neighbourhood that becomes iconic contributes to the rebranding of the city and may boost different phenomena like tourism, that then affect the entire city.

Therefore, there are different and opposing aspects of these projects that may at the same time benefit and damage the city. In fact, it may be stated that probably urban renewal and redevelopment interventions have some long term indirect effects on the overall city well-being and population that may make them more beneficial than harmful in the end. However, it is of course recommended for the public parties involved in such PPPs to always take into consideration the social aspects and the needs of their population. In fact, according to what has been analysed, it is quite easy to do so and help the private party to be more thoughtful through for example discounts on taxes and more efforts in the joint tables of collaboration between the two parties.

In conclusion, the findings of this study can be considered relevant for the topic of PPPs in urban renewal mega projects. In fact, there are no other significant studies focused on developing a deep analysis of profitability and benefits of such interventions, both from a quantitative and qualitative point of view, as the difficulties in the mathematical assessment of PPPs have not been completely overcome by a specific model. Moreover, an analysis of this type is very useful as there is an ongoing process of renewal in cities, especially in a more sustainable and social point of view. In fact, Municipalities are nowadays trying to consider in their urban planning strategies aspects that were once neglected and not central in the public debate. In particular, the scenarios that have been developed in this work are useful instruments for both research and practical applications, as every PPP has its own characteristics and this methodology takes into

consideration a great deal of flexibility, thus it could be applied to any project with any type of features. Moreover, it provides PPPs' actors with the possibility to compare different assumptions and aspects of what they intend to develop or have already developed. This way, better deals can be struck and if any changes are due to be made to projects which have been concluded previously, there is a higher possibility for improvement for all stakeholders.

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