



**ΟΙΚΟΝΟΜΙΚΟ ΠΑΝΕΠΙΣΤΗΜΙΟ  
ΑΘΗΝΩΝ**

**ΤΜΗΜΑ ΣΤΑΤΙΣΤΙΚΗΣ**

**FEASIBILITY STUDY  
FOR RESIDENTIAL COMPLEX IN ROMANIA**

Βασιλική Γεωργίου Ανδρεσάκη

ΕΡΓΑΣΙΑ

Που υποβλήθηκε στο Τμήμα Στατιστικής  
του Οικονομικού Πανεπιστημίου Αθηνών  
ως μέρος των απαιτήσεων για την απόκτηση  
Μεταπτυχιακού Διπλώματος

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## **ΑΦΙΕΡΩΣΗ**

Στη μητέρα μου.



## **ΕΥΧΑΡΙΣΤΙΕΣ**

Ευχαριστώ τον επιβλέποντα καθηγητή κ. Μπήτρο Κωνσταντίνο, καθώς επίσης και την εταιρία SECURE MANAGEMENT LTD για την πολύτιμη συνεισφορά τους κατά την εκπόνηση της παρούσης διπλωματικής εργασίας.



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## **FEASIBILITY STUDY FOR RESIDENTIAL COMPLEX**

July 2010

From 2003 to 2008 Romania has experienced high levels of economic growth, which turned to a recession in 2009. Today, the country remains one of the EU Member States with one of the highest growth potential managing to overcome the adverse global economic crisis. Romania is a raw materials rich country, located at the intersection of some main European roads and railways

Despite the slowdown of 2009, the real estate market in Romania has strong fundamentals and good potential for future growth stimulated by the strong underlying demand. Unlike other markets, the Romanian market is characterized by an extended imbalance of supply and demand. Overall population in Romania is ~21.300.000 inhabitants with Bucharest being the most densely populated municipality in Romania with ~1.944.000 inhabitants.

The existence of the middle-class, coupled with the poor condition of the available communist-era accommodation in which its majority still resides, has created a fundamental demand for modern housing. This demand remains strong and will continue to drive the markets once the global economy recovers. The middle class home buyers market is considered a very active market.

Middle class projects are described by high rise structures, with high residential unit density while offering a minimum of facilities (green areas, enclosed within the compound commercial spaces). It consists mainly of young families with one or two children and professionals looking forward to upgrade their quality of life by moving to a cleaner, quieter and healthier environment. This market segment is boosted by professional marketing, which contributes to a better conveyance of necessary information to potential clients.



Although an important number of residential projects has already been announced on the market, these projects are developed in stages, so that the number of units available for sale would not grow spectacularly each year.

The current crisis has resulted in a 20-40% price correction, as well as in the cancellation of certain high quality projects. As a result, financially strong developers with quality projects who are able to survive the crisis will have the opportunity to increase their market share by benefitting from the less intense competition and take-over opportunities.

The Project analyzed in this feasibility study is located on the shores of Lebada lake, in the heavily populated neighborhood of Pantelimon which is approximately 10km from downtown Bucharest. The landscape, next to a forest, makes it attractive for residential development. The project foresees ten (10) separate residential buildings of three distinctive types which allows for the optimized distribution of the apartment sizes to fit the target clientele profile of the middle to upper class.

As regards the construction quality of the apartments it will be classified as medium to high. The apartments shall be carefully and properly equipped with all the necessary electromechanical installations. A retail area will be also be developed within the complex in order to meet target clients requests and enhance the marketability of the project.

With a total investment cost of €19.905.000, the developer estimates a net profit after tax (NPAT) for Phase 1 of €4,14 mil, which results in a ROE of 44% and an IRR of 13% over a 5 year development.



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# **CHAPTER 1**

## **INTRODUCTION**

In the 1<sup>st</sup> chapter a short description of the Company and its activities, is presented together with a description of the project.

Several demographic and macroeconomic data which led to the selection of the project country are presented throughout 2<sup>nd</sup> chapter. Apart from the regional overview and the main data for the residential market of Romania and Bucharest, is provided also a critical view of the global crisis and its effects on the development of Romanian residential market.

3<sup>rd</sup> chapter refers to the strategy and its implementation for the development project. A detailed analysis of the apartments and their construction standards is presented, as well as the target group for which these apartments are ideal. Reference is also made to the risk management aspects of the project, as well as to its timeline.

4<sup>th</sup> chapter presents the economic viability of the project. Key financial data and the main economic assumptions for the development of the project are presented in this chapter. The project will be financed through equity and debt and presales and sales income will be used also for developing the project.



## CHAPTER 2

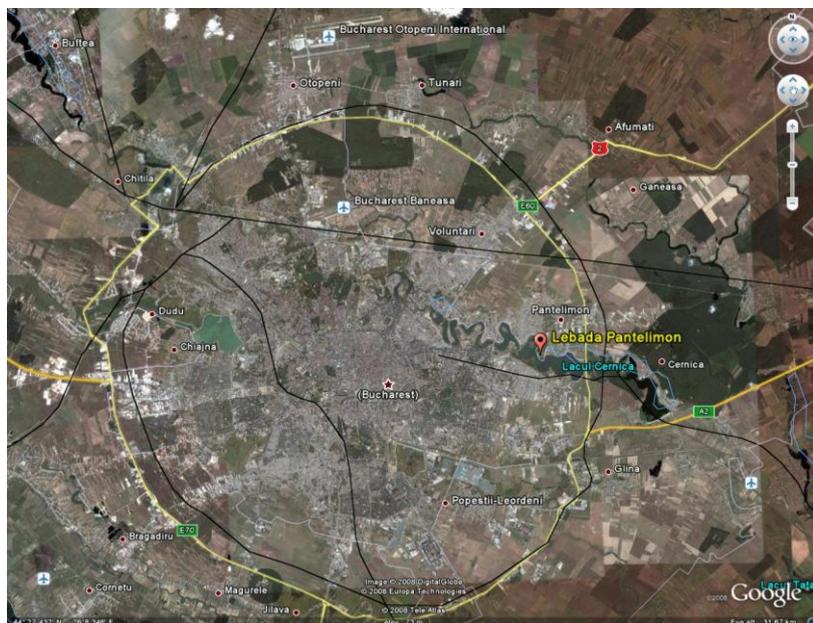
### COMPANY SUMMARY

In this chapter a short description of the Company and its activities, is presented together with a description of the project.

#### 2.1 Company Overview

The Company XYZ (the 'Company'), is a Romanian entity, an investment vehicle targeting residential real estate development opportunities in Romania.

The Company considers the residential development of ~ 54.600 sqm of apartment units (the 'Project') located in the suburb of Pantelimon in Bucharest. This Project requires debt financing to be added to the equity participation for the completion of the Development in two or three Phases.



**Image 2.1** Project location - Google earth

#### 2.2 Project Description

The property, on which the project will be developed, consists of a 40.000m sqm land parcel situated in Pantelimon City, and features a 400m

frontage on Pantelimon Lake (270o lake view), as well as to the Pantelimon Forest. The site is regulated for Residential use (Certificate of Urbanism) and according to the PUZ (Zonal Urban Plan) achieved, the allowable site coverage is 30% (maximum construction at ground floor level is 12.032 sqm) and the maximum building co-efficient is 1,5).

One of the sides of the plot has a view to the neighboring forest. This allows for added flexibility in the architectural design in terms of the view of the residential units, the majority of which will have either the lake or the forest as their main view. Note that the plot has a south-southwest orientation which makes it attractive for residential development.

The Company decided not to exhaust the allowable buildable area, so that the residential complex built will enjoy ample free & green spaces and the buildings will be at a substantial distance from each-other. Consequently the development will be as follows:

<b>Building</b>	<b>A1;</b>	<b>A3; A4; A5</b>	<b>B1; B2;</b>	<b>C1 - C2</b>	<b>TOTAL</b>
Number of Apartments	102	153	154	104	513
Parking spaces interior	74	126	175	112	487
Parking spaces exterior	14	20	44	15	93
Apartment area	9.276	13.915	13.384	8.858	45.433
Below ground area	2.440	4.088	5.121	3.700	15.349
Common spaces area	2.671	3.595	3.294	1793	11.353
Commercial spaces			2.726		2.726
Technical spaces			492		492
Terraces	692	1.038	1.797	1.222	4.749
Balconies	3.489	5.233	3.379	2.017	14.118
<b>Area total (with balconies)</b>	<b>17.877</b>	<b>26.830</b>	<b>28.397</b>	<b>16.367</b>	<b>89.471</b>
Building Coefficient area	10.648	15.972	18.067	9.907	<b>54.594</b>

**Table 2.1** Development parameters of the project

There will be ten (10) separate residential buildings of three distinctive types (A, B and C). This allows for the optimized distribution of the apartment sizes to fit the target clientele profile (“Target Market”), namely young families with one or two children, professionals, or expatriates looking to upgrade their quality of life by moving to a cleaner, quieter, healthier and at the same time affordable lakefront environment on the outskirts of the Pantelimon neighborhood.

Phase 1 of the Project (for which financing is being requested) consists of buildings A3, A4, and A5 (type A). It will include the development of 153 apartments and 126 underground parking spaces.



**Image 2.2** Buildings design

The A type buildings will span up to 7 levels and offer magnificent views to the lake or the forest. The buildings are all oriented towards Pantelimon Lake and will be surrounded by a uniquely landscaped environment with trees, green areas, beautiful walkways, amenity lighting and children's playgrounds. The whole complex will be a secure (gated) environment, with residents having access to private underground parking spaces and visitors' designated parking areas on the complex's perimeter.

The buildings' structure will be monolithic, concretely reinforced, with excellent hydro-thermal insulation; thus, minimizing heat losses in addition to plastered external façades carrying large windows to enhance the effect of the lake experience.

The construction quality of the apartments will be medium to high, with similar quality finishing materials, be it wooden parquets and branded tiles, or modern casings. The material selection process will adhere to strict evaluation and quality control and assurance processes to ensure the end-product specifications (highest possible quality/cost ratio).

Every care shall be taken to properly equip the apartments with all necessary electromechanical installations that will extend the residents' comfort. Each apartment shall have autonomous gas heating, as well as the possibility of air conditioning installation. Each apartment shall have a heating installation which consists of floor embedded poly propylene (PEX) pipes and steel radiators, with individual meter for thermal energy consumption measurement. Separate electrical circuits will ensure an adequate and safe power supply to every room, which will be fitted out with a sufficient number of sockets and switches so that the functionality and the comfort are fully satisfied. The internal lighting is ensured by fluorcompact lighting lamps of 2x18 W, in the kitchens and in the bathrooms, with ceiling lamps with incandescent sources in the living rooms and in the bedrooms, the number of them being calculated in accordance with the room's size. Also, structural cabling, data-voice sockets and TV sockets will be available in living rooms and in bedrooms. Preparatory works will be provided in order to allow the possibility of air conditioning installation. In each kitchen will be available a natural gas supply installation and individual gas meters will be installed for each apartment.

### 2.3 Location

The Project is located in the Lebada area of the heavily populated neighborhood of Pantelimon and near the town of Cernica, in the eastern section of Bucharest. It is approximately 10km from downtown Bucharest and around 1,5km from the city's ring road, which connects directly to the Otopeni International Airport approximately 15 km away (and close to the proposed new airport at Novo), as well as to the Bucharest-Costanta motorway. Cernica is a well known destination, mainly for the Cernica Monastery and the Lebada Hotel which is destined to become a 5star hotel. Close to the site (< 1 km) there is a CORA hypermarket together with a METRO, as well as a commercial area. Next to those there is an underground station.



**Image 2.3** Aerophoto of location

The access time to either the center of Bucharest or to Otopeni airport is less than in other areas of the North and North East Bucharest suburbs.



## **CHAPTER 3**

### **MARKET ANALYSIS SUMMARY**

Several demographic and macroeconomic data which led to the selection of the project country are presented throughout this chapter. Apart from the regional overview and the main data for the residential market of Romania and Bucharest, is provided also a critical view of the global crisis and its effects on the development of residential market.

#### **3.1 Regional Overview**

Romania is located in the South-Eastern part of Central Europe and is bordered by Moldova, Ukraine, Bulgaria, Serbia, Hungary, and the Black Sea. Romania's total surface is of 237.500 sq km. As a consequence of its location and history Romania is a mix of cultures, diverse ethnics and varied geography.

Romania's total population is of 21,53 million (as of 1st of July 2007). The population has decreased in the last years with approximately 0,2% every year. Probable causes for this decrease of population are: intense foreign migration, a drop in birth rate and a rise of mortality rate. The total population of Bucharest as of 1st of January 2009 was of 1.943.981 inhabitants. Bucharest's population is significantly larger than several advanced retail markets in Central Europe.

Population density in Romania is 90,8 people per sq km, which is below the average for Central and Eastern Europe (106 people per sq km). Bucharest is, by far, the most densely populated municipality in Romania, with 8,114 people per sq km. Romania is one of the most populated countries in the area, ranked three behind Turkey and Poland.

Romania remains one of the EU Member States with one of the highest growth potential. The lowest mortgage penetration is commensurate to the high savings ratio (23% over GDP, is more than double of the region's average), adding to the continuous convergence of living standards, the growth of the middle class, and the strong demographic factors. Note that the

discrepancy in potential demand and supply is evident from the evolution of marriages towards completions of new apartments which are the highest and lowest in region respectively.

<b>Macroeconomic data and forecasts</b>					
	<b>2007</b>	<b>2008</b>	<b>2009e</b>	<b>2010f</b>	<b>2011f</b>
GDP(EUR bn)	123,7	136,9	118,4	124,1	144,2
Population (mn)	21,5	21,4	21,3	21,2	21,2
GDP (constant prices y-o-y %)	6,3	7,1	-7,0	1,0	3,5
CPI (average, y-o-y %)	4,8	5,7	5,6	3,6	3,5
Unemployment rate (%)	4,0	4,4	6,3	8,5	7,0
Net FDI (EUR bn)	7,3	9,5	4,9	5,0	5,8
FDI % GDP	5,8	6,6	4,1	4,0	4,0

Sources : Unicredit Bank, Eurobank EFG

**Table 3.1** Macroeconomic data and forecasts for Romania

The land market was one of the first affected by the current crisis, and it is estimated that is on the recovery path. As ever, the evolution of the land market will be strongly related to that of other markets and the demand for their finite products.

As evidence of credit flow starting to flow back into the market during Q3 2009, the residential market is likely to gather steam in the course of 2010, a sign of which will be the decreasing housing stock. By 2011, Romania may resume back to an annual growth of over 5% which will entail strong demand for residential units.

As the construction cost in 2009 - 2010 has decreased considerably, investments made in 2009 - 2010 will significantly outperform profit wise those achieved before crisis. This is clearly a window of opportunity provided that one has in place the necessary funding.

2009				
	Demand	Prices /Rents	Supply	Vacancy Rate
Office Market	↓	↓	↓	↑
Retail Market	↓	↓	↓	↑
Residential Market	↓	↓	↓	
2010				
	Demand	Prices /Rents	Supply	Vacancy Rate
Office Market	↑	↑	↑	↓
Retail Market	↑	↑	↑	↓
Residential Market	↑	↑	↑	

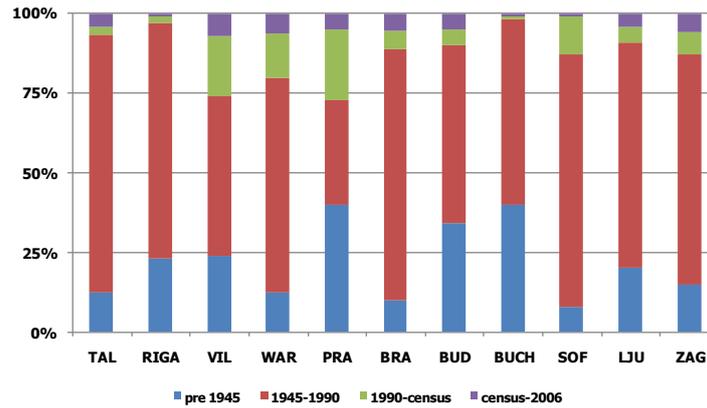
↓ Decline , ↓ Slight Decline , ↓ Increase , ↓ Slight Increase

**Table 3.2** Macroeconomic data per market for Romania

### 3.2 Real Estate Market Overview

Between 2003-2008, Romania experienced very high levels of economic growth which has been fuelled by Foreign Direct Investment, infrastructure investment, and deregulation of the services and financial sectors. This economic growth led to the creation and growth of a middle-class which has acquired consumer habits similar to those of its western European counterparts.

The existence of this middle-class, coupled with the poor condition of the available communist-era accommodation in which its majority still resides, has created a fundamental demand for modern housing whose momentum, we believe, remains strong and will continue to drive the markets once the global economy recovers. These fundamentals relate to demographics, to an ageing housing stock which is not commensurate with the lifestyle expectations of an increasing in size and purchasing power middle class, and to a supply of modern housing which is far from catching up with demand. This is shown in the below chart which illustrates that new housing stock is a very small percentage of Bucharest's entire housing stock.



**Chart 3.1** Dwelling stock per 1.000 inhabitants per city

The supply of modern housing, on the other hand, is relatively weak and is further weakening due to the effects of the global economic slowdown, as residential projects are being delayed or cancelled. As a result, there exists a gap between supply and demand which in Bucharest is estimated to exceed 100.000 units. Several developers who were planning project launches by the end of 2008 announced the delay of any further development; while there is no universal freeze of all projects, we estimate that the overall balance of new supply is negative compared to last year.

The global financial crisis and economic downturn has created a clearly recognizable effect on the property market of Romania. At the peak of the financial crisis, the residential market experienced a period of virtually zero transactions due to the freeze in financing availability that was imposed by lending institutions. After the initial market freeze, the effects of the global economic downturn became evident in the real economy and this led to potential buyers becoming very cautious and adopting a wait-and-see attitude due to growing expectations of decreases in asset prices. Following global efforts to provide and/or support liquidity in the international financial system, the Romanian government's initiatives, such as the 'Prima Casa' First Home Buyers program (loans up to €60.000 are guaranteed by the state, VAT is reduced to 5% and lower transaction costs), and the support of the Romanian Central Bank (by reducing the requirements for reserves), debt financing has

once again become available and the market has started to show signs of activity.

A positive consequence of the financial crisis is that construction costs have fallen considerably. This downward trend is expected to continue in the near future as the demand for construction works has decreased since a number of projects have been delayed or cancelled and few projects are expected to break ground in 2010, forcing contractors to reduce their excessive margins.

### 3.3 Market Segmentation

Demand for new units developed within residential compounds may be segmented according to 3 class types and to available budgets, as follows:

- The middle class is represented by families earning 2.000 to 3.000 EUR per month.
- The upper middle class is represented by families with income between 3.000 and 5.000 EUR per month.
- The luxury class is represented by families acquiring incomes of over 5.000 EUR per month.

The amounts considered originate from salaries, management contracts, copyrights, liberal professions, rents, dividends, etc. While the top class requires turn-key offers, the middle class purchases habitations in the project phase (off-plan), in order to benefit from a more attractive price. The top offers are addressed to well informed customers, who are familiar with the market and have specific expectations regarding the quality of construction and finishing. Unlike these, the middle offers involve certain risks owing to off-plan acquisition (e.g., the alteration of the surroundings, construction delays, etc).

A classification of the demand may be accomplished in view of the purpose of the purchase. Approximately 25% of the actual customers are at their first dwelling, 35% have upgraded their condition (or are "upgraded"), namely they sell an old apartment and buy a new one, with more rooms and better adapted to their needs, while the remaining 40% buy for investment purposes. The last

category includes investment funds, as well as small Romanian and foreign investors.

### 3.4 Competition Analysis

In the specific lakefront area, a number of other residential projects have been announced during 2008. Currently, some of them are at different stages of development, while some others have been postponed / stopped. All of them have inferior view to the lake (certainly no panoramic view) which is the most prominent element of the specific development project.

As can be seen from the table below, most of the projects announced in 2008 have been currently postponed.

No.	Project Name	Location	Number of apts	Type of Apartments	Asking Price	Project Status
1	<b>Cernica Residential I Park</b>	Pantelimon, Cernica Rd	1.000			Announced in 2008 but project <b>currently postponed</b>
2	<b>Atlantis Residence</b>	7 Dobroesti Rd & Fundeni Rd	134	2 bedroom apartments and 2 penthouse	Reduced from 1.640 €/built sqm to 1.250 €/built sqm + VAT	4 blocks of GF+11F 3 of 4 blocks completed. 52 out of 103 apartments sold.
3	<b>Swan Lake Village</b>	Pantelimon, Cernica Rd	58 villas		1.400 €/built sqm + VAT	Completed. 8 villas left to be sold.
4	<b>Ansamblul rezidential Cernica</b>	Near Cernica Monastery	26 villas		1.100 €/built sqm + VAT	Early stages of construction.
5	<b>Lebada Park</b>	Pantelimon - Lebada area	450	1,2,3,4 bedroom apartments, duplex, penthouses, apartments with garden	When announced, starting at 1.200 Euro/sqm + VAT. The construction was due to begin in March 2009	Announced in 2008 but project <b>currently postponed</b> .
6	<b>Summa Project</b>	near Pantelimon Lake	Villas			Announced in 2008 but project <b>currently postponed</b> .

**Table 3.3** Competitive projects

## **CHAPTER 4**

### **STRATEGY AND IMPLEMENTATION SUMMARY**

This chapter refers to the strategy and its implementation for the development project. A detailed analysis of the apartments and their construction standards is presented, as well as the target group for which these apartments are ideal. Reference is also made to the risk management aspects of the project, as well as to its timeline.

#### **4.1 Detailed Project Description- Product Specification**

All apartments will be delivered to the buyers fully finished and fitted. The complex will be maintained and managed by a professional property management company to take care of the security, cleaning, gardening and lighting of the common areas, as well as facility management of all building systems.

The apartments (depending on the number of bedrooms), are designed with living rooms, bedrooms, open or separate kitchen, wardrobe and dressing room, bathrooms and WC. They all have balconies and/or terraces with ornamental flower pots and parapets with handrail at 90/110 cm height. Detailed apartment description is as follows:

- **Indoor partitions**

The interior partitioning will be made by 25 cm thick BCA walls, for apartments' separation walls (Note: too thick for internal walls), and by double-plated soundproof gypsum board walls of 10-12,5 cm thickness for internal partitions.

- **Exterior walls**

The exterior walls will be made by BCA bricks masonry, of 25 cm in thickness, on which a thermal system consisting of 10 cm thick EPS polystyrene plates will be applied.

- **Interior finishing**

The brick walls and reinforced concrete walls will have a polishing plaster coat; the ceilings will be made by gypsum board, with embedded lighting bodies; the walls and ceilings will be painted on acryl paint; the interior doors will be wooden made, cell structure; the walls in the bathrooms and kitchens will be coated with ceramic tiles; the flooring of each apartment will be made of natural stone tiles, treated against slipping, in the staircases, of laminated parquet in the living rooms and in the bedrooms and of ceramic tiles in the halls, kitchens and bathrooms; the stairs handrails will be made of stainless steel; security doors will be installed at the apartment entrance, the exterior joinery will be made of aluminum, white color, with double glazed windows.

- **Indoor electromechanical installations**

Each apartment will be fitted out with high standard quality materials, carefully selected. The power supply cabling will be made of copper conductors; the model of the electrical appliances (sockets, switches, lighting bodies) will be procured from a reknowned supplier; the heating system will consists of PEX pipes and steel radiators; the sanitary objects will be of superior quality, porcelain or poly acryl; structural cabling will be on Cat 5e cables; the elevators which will be installed will be with fitted out cabins of six persons.

The outdoor space will include alleys and sidewalks made by decorative pavement. On the open spaces between blocks, flower gardens are to be arranged and trees are to be planted, while playgrounds for children will also be constructed. Outdoor decorative lighting for the entire residential complex is also included in the design.

There will also be a retail area to accommodate retail and leisure premises such as a small supermarket, a beauty salon, a café, gym with a wellness center, a day care, a medical center, a swimming pool, tennis courts etc.



**Image 4.1** Buildings design

Note also that extra care has been put into the master plan so that the distance between the buildings provides a feeling of open space and suburban life style. Furthermore, the shape of the plot and the master plan warrant that 50% of the apartments will have panoramic lake view while 30% will have partial lake and forest view.



**Image 4.2** Buildings design

## 4.2 Marketing Data

### 4.2.1 Main Target Group

Middle to Upper income professionals and business owners over 30-year-old, looking for a family home. They would be able to afford EUR 100.000-150.000 for the average-sized apartments. Part of the buyers will be well-off and will purchase without borrowing from a bank. This group will be attracted by the location and the quality level of finishing vis-a-vis the cost. Another part could borrow from banks up to 70% of the sales price. If an interest rate of 7,5% is assumed, they would need to be paying approximately EUR1.000-1.400 per month, i.e. the family monthly income would have to be at least EUR2.500-3.000.

The middle class segment is considered a very active market, for the new projects of 'bedroom neighborhoods' (Tei, Colentina, Obor, Pantelimon, Titan, Vitan, Mihai Bravu, Dristor, Tineretului, Militari). We can safely assert that this type of projects was truly launched in the year 2007, as the majority of those previously emerged targeted the upper-middle class. The middle class projects are described by high structures, high density and a minimum of facilities (green areas, enclosed compound). The new residential projects are boosted by professional marketing, which contributes to a better conveyance of necessary information to potential clients. Another element for attracting increasing numbers of clients (especially in the middle class) consists in the payment method, the favorite being that of the advance payment of 25%, upon the signing of the reservation contract, followed by the 75% balance, on the turn-key delivery of the apartment.

### 4.2.2 Development Service Providers and Subcontractors

The Development Company plans to use a number of local and international service providers and subcontractors with a view to blend the local expertise with the international standards and experience. All such

providers will be selected via a bidding process, and will be retained with international standard contractual agreements.

A well respected Romanian **architectural firm** has been selected as the general designer on the basis of its wide experience in residential and commercial projects in Romania, such as a Residential Complexes (400 apartments) & Sport Facilities in major cities of Romania and shopping centers and Offices in Bucharest. The architectural company has already executed the concept and preliminary design for the project and is now in the final stage of obtaining the building permit.

The **civil engineering** company selected for the project is a Greek one, which during the last decade has designed and supervised industrial projects in Greece, office buildings in Athens and Bucharest, educational buildings, hotels, residences, villas of special architecture, holiday houses, and logistic centers.

In order to supervise the execution the project the Company will hire an experienced **Project Manager** who will coordinate all construction related functions.

In order to **supervise the development process** and the various contractors on behalf of the shareholders, the Company has put together a team of professionals that for the last four years has supervised developments such as an office building and a medium-size residential project in Bucharest, as well as a logistic project in Pantelimon. The team has more than 20 years of experience in developing mainly residential projects in Greece.

The **General Contractor** shall be selected also through a tender process among pre-selected and competent Romanian and international contractors. The Successful Bidder shall provide a Performance Guarantee in the form of a Bank Guarantee for the Construction and Defects Period of the Project. The Construction Contract shall be in the Lump Sum format, to mitigate Owner's risks in the construction cost. The tender process shall only commence after detailed design has been completed, thus minimizing or eliminating the potential for change orders or variations.

The **marketing agent** will co-ordinate the marketing and public relations campaign.

**Sales** will be coordinated by a sales agent with proven track record in the local market. After a tender process the Company has selected and is currently in negotiations with one of the largest Romanian real estate services providers, which has successfully advised numerous projects by providing tailor made full real estate solutions including, brokerage, marketing, investments valuation, market research and property management, focusing mainly on the residential sector.

#### 4.3 Risk Management Aspects

In view of the evolving economic and market conditions, the Developer has re-aligned the project development plan in the following aspects:

- a) The project development itself has been divided in 3 phases so as to reduce the construction cost per phase and consequently to reduce financing requirements. Even within each phase the execution timeline has been scheduled in such a way that proceeding with the latter development stages depends on the sales success of the earlier ones.
- b) An additional benefit of the phased development is the fact that it allows for more control over the pace at which the apartments come into the market, thus reducing the risk of keeping stock over an extended period of time.
- c) The design team has reviewed the original plans and effected a reduction of the average unit size. Under the current design, which is to be submitted for the building permit issuance the bulk of the units are between 80-120 sqm. As a result, the product has become more marketable, allowing for the prolongation of the current economic instability.
- d) The team of engineers that supervise the development has effected cost cutting analyses by reviewing all the design with a view a) to effect cost minimization changes and b) to simplify them. This approach explains in part the reduced average construction cost taken into account vis-à-vis the Developer's earlier cost estimates.

#### 4.4 Timeline

Please refer to Appendix 1.



## **CHAPTER 5**

### **FINANCIAL ANALYSIS**

This chapter presents the economic viability of the project. Key financial data and the main economic assumptions for the development of the project are presented in this chapter. The project will be financed through equity and debt (resulting in a debt/equity ratio of 44-56). Presales and sales income will be used also for developing the project.

#### **5.1 Phase 1: Sources & Uses of Funds**

Below is a brief summary of the ‘Sources & Uses of Funds’ for Phase 1 of the Project. Details on the assumptions can be found in the ensuing paragraphs.

<b>Type</b>	<b>Amount</b>	<b>Note</b>
Land Equity	1.387.000	(a)
Land Debt	1.598.000	(b)
Construction Equity	1.407.000	(c)
Presales Income	1.235.000	(d)
Sales Income	6.877.000	(e)
Construction Debt financing	7.401.000	(f)
<b>Total</b>	<b>19.905.000</b>	(g)

**Table 5.1 Sources of Funds**

The analysis of the fund sources is as follows:

- a. Total land cost corresponding to the square meters developed in Phase A is equal to €2.985.000. The 13.270sqm, of Phase A (corresponding to 33% of the total plot) are valued at €225 per sqm as per a July 2009 valuation report. Out of this amount €1.387.000 have been financed with equity in 2007, while the rest with debt by Bank X.
- b. Construction Equity contributed by the shareholders equals to €1.407.000. Construction equity is additional to the equity used for the land purchase.
- c. Pre-sales income (€1.235.000) corresponds to income collected from clients, buying an apartment unit prior to the end of construction (which is

estimated to last 30 months for the three buildings of Phase A). It is estimated that 20% of the units (apartments & parkings) of the three buildings (i.e 30-40 units) will be presold under a scheme of 25% down payment with the rest (75%) to be paid on delivery.

d. Sales income of €6.877.000, results from receipts of the remaining 75% of the sales consideration (€3.707.000) of the pre-sold units of buildings 4 and 5, as well as the post-construction sales (€3.170.000) of a few apartment units of building 5 (corresponding to 20-25 units, or 35-45% of the building's total) at a time when building 3 will still be at mid-construction.

e. Construction Debt equals to €7.401.000. Construction debt is drawn pari pasu with the construction equity.

As per the above analysis equity for construction is €1.407.000 while the equivalent debt is €7.401.000, resulting in a **44-56 Debt/Equity ratio**.

For the whole of Phase A, including land, the project **Loan to Cost (LTC) stands at 0,45x**.

Type	Amount
Land Cost	2.985.000
Pre-Development soft costs	4.447.000
Construction hard Cost	10.786.000
Marketing & Sales fees	750.000
Interest Expense	937.000
<b>Total</b>	<b>19.905.000</b>

Note: It is assumed that the construction of Phase 1 will last for approximately 30 months. However, individual buildings will have a staged delivery schedule. The Developer may at any given point of time decide to expedite the construction depending on the sales success.

**Table 5.2 Uses of Funds**

## 5.2 Phase 1: Business & Economic Assumptions

### 5.2.1 Sales – Residential Units & Parking Spaces

The following assumptions with respect to sales of the apartments and the parking spaces have been incorporated in the project cash flow model:

- 20% of apartments (and underground parking spaces) shall be pre-sold prior to the completion of each building's construction. 80% of the apartments shall be sold within 9 months of each building's completion;
- Average sales price of €1.200 per square meter of area of apartment space including common spaces (VAT excluded);
- Average sales price of €360 per square meter of balcony/terrace area (VAT excluded);
- Average sales price of €10.000 per underground parking space;

Please note the following:

- The above mentioned prices are an average and detailed sales prices shall be developed for each apartment based on its individual characteristics.
- The buyer will be quoted one price for the apartment which will include the constructed apartment area, the terrace and the common area.

### 5.2.2 Construction Cost

The following represent the main cost assumptions for Phase 1:

- cost of **€470** per sqm for the 17.526 sqm of apartment space (including common areas);
- cost of **€235** per sqm for the 4.100 sqm of below ground parking;
- cost **€120** per sqm for the 6.270 sqm of terrace areas;
- cost of **€95** per sqm for the 8.500sqm of landscaping and open air parking space;
- Overall, the hard construction cost for Phase 1 is estimated at **€10,79m**.

Note that the above mentioned costs are based on the analysis of the architectural drawings and results of a detailed cost survey.

### 5.2.3 Other Phase 1 Construction Cost Parameters

The following represents the cost assumptions for the pre-construction costs, as well as other soft and administrative costs:

<b>Other Development Cost</b>	
<b>Cost Item</b>	<b>€</b>
Development & Project Management	862.910
Taxes	75.000
Electric cable/supply	150.000
Site organization	100.000
Design-Building-Permitting	800.000
Contigency	1.039.319
Water & sewerage systems	600.000
Gas	150.000
Generator & Transformers	120.000
Phone lines	50.000
Admin & Legal expenses	500.000
	<b>4.447.229</b>

**Table 5.3** Other cost parameters

It should be noted that some of the pre-development and soft construction costs outlined above are incurred during Phase 1 but are required for the Project in its entirety. More specifically, the Permits & Licenses, Designs Project & Project Studies, Sewerage Systems and Generator & Transformers all include significant elements that apply to the whole Project. The application for Permits & Licenses shall include all of the improvements included in the Project masterplan in order to ensure that the Project is not subject to planning risk at later stages of development. The Designs will also be completed for all of the improvements for similar reasons. The Network Connections shall bring all services to the site with the necessary capacity for the entire Project in order to avoid duplicate costs for the later phase. Finally, the Sewage System and Generator & Transformers shall also possess enough capacity for the entire Project in order to avoid duplicate costs. Although these costs burden the cash flow of Phase 1 with an additional €1,6mill (of the total Phase 1 costs of €15 million), their benefits are realized when the entire Project is considered.

### 5.2.4 General Economic Assumptions

In preparing the cash flow model of the project, the following parameters have been also considered:

- Cost indexation at 0% annually (in view of the expected costs deflation stemming from the current economic conditions).
- No sales price indexation (Even though market prices used to strongly increase over the last 2-3 years before the crisis ensued and we have allowed for the current price correction, the Developer estimates that the possibility of a price plateau for the next 1-2 years is increased).
- Marketing fee of 1% over the estimated income.
- Sales agent fee at 2% over the estimated income.
- Financing cost of 8%.
- Any available cash is being deposited in CDs yielding 1/3 of the financing interest rate.

### 5.3 Phase 1: Profit & Loss- Cash Flow

Taking into account all the above mentioned assumptions, including the book value of the Phase 1 portion of the land for tax purposes, Phase 1 P&L and Cash Flow are estimated as follows:

<b>Project P&amp;L (€mil)</b>	
Total Income	24,71
Comm.Cost	-0,74
Land Cost	-2,99
Soft Costs	-4,45
Constr Costs	-10,79
	<b>EBIT 5,75</b>
Net interest	-0,35
	<b>EBT 5,40</b>
Taxes	-1,26
	<b>NPAT 4,14</b>

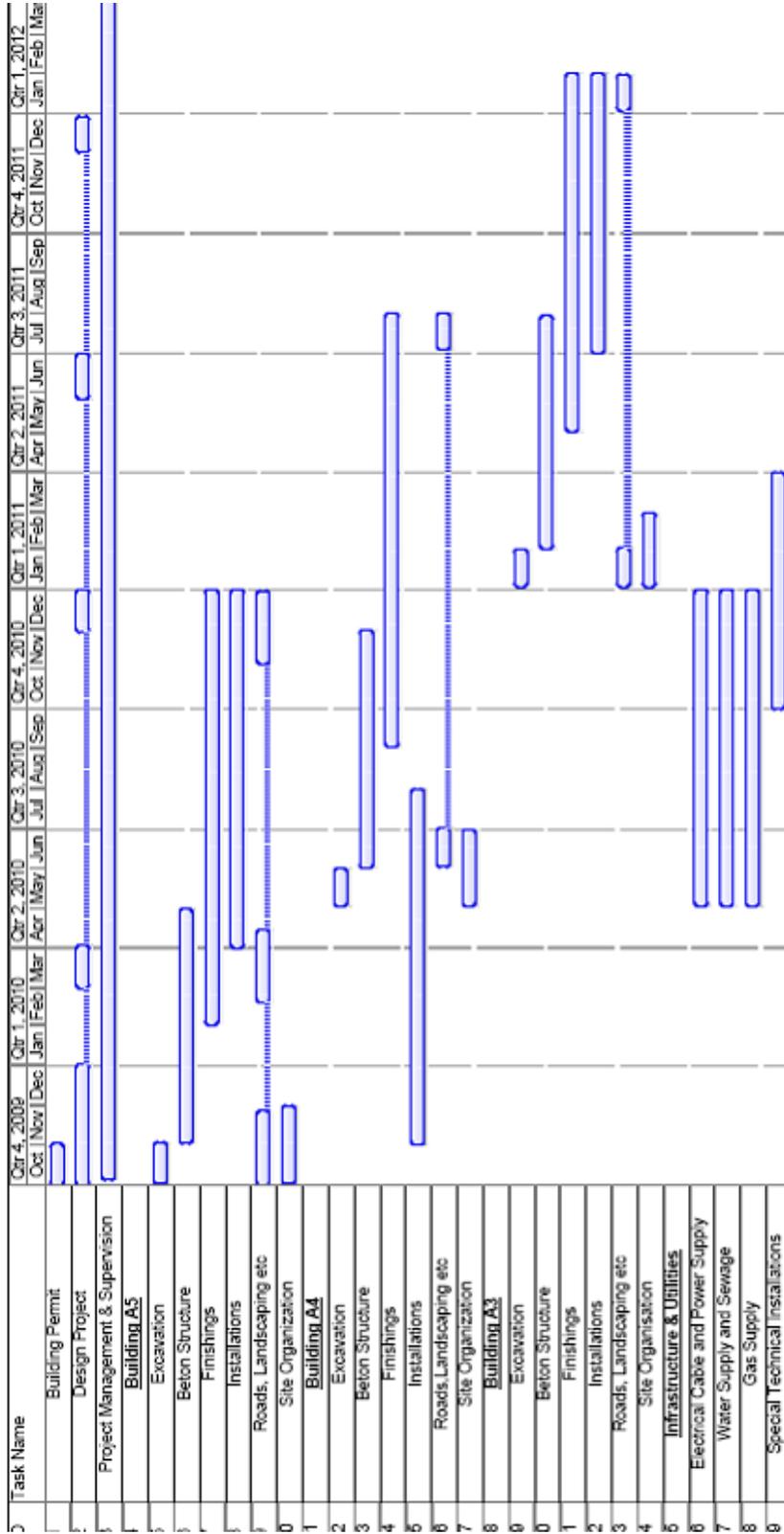
**Table 5.4** Profit and Loss – Phase 1 Company XYZ

<b>Project Cash Flow (in € mil)</b>									
	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>Total</b>
Net Income	0,00	0,00	0,11	0,70	12,25	10,91	0,00	0,00	<b>24,0</b>
Total Cost	2,99	0,00	2,28	6,38	5,20	1,38	0,00	0,00	<b>18,2</b>
EBIT	-2,99	0,00	-2,17	-5,68	7,05	9,54	0,00	0,00	<b>5,7</b>
Net Interest	0,00	0,00	-0,02	-0,29	-0,24	0,13	0,06	0,00	<b>-0,3</b>
EBT	-2,99	0,00	-2,19	-5,97	6,81	9,67	0,06	0,00	<b>5,4</b>
Taxes	0,00	0,00	0,00	0,00	0,00	0,00	-1,26	0,00	<b>-1,3</b>
EAT	-2,99	0,00	-2,19	-5,97	6,81	9,67	-1,19	0,00	<b>4,1</b>
Investor CF	<b>-2,99</b>	0,00	<b>-0,46</b>	<b>-1,28</b>	0,00	<b>-0,03</b>	<b>8,84</b>	0,00	<b>4,1</b>

**Table 5.5** Cash Flow – Phase 1 Company XYZ

As a result, with a total investment cost of €19.905.000, the developer estimates a net profit after tax (NPAT) for Phase 1 of €4,14 mil, which results in a ROE of 44% and an IRR of 13% over a 5 year development.

## APPENDIX 1 –PHASE 1 PROJECT TIMELINE



Project: Project1  
Date: Mon 27/7/09

Task:

Split:

Progress:

Milestone:

Summary:

Project Summary:

External Tasks:

External MileTask:

Split:

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