

Influence of uses in rehabilitation interventions

City Lisbon analysis

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Extended abstract

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Abstract

In recent years, a wave of investment opportunities has appeared in the form of the rehabilitation of the major portuguese cities, an activity which is essential for the continuing development of the cities themselves but also of one of the main industries driving the Portuguese economy, construction. It was in this context that was deemed essential the analysis of different rehabilitation intervention typologies, regarding of their possible future use. Focusing this analysis in the historic downtown of the Portuguese capital, this study was carried out, starting from a general overview in order to reach a detailed objective, which is the evaluation of this field of investment and the determination of whether there is correlation or not between the use and type of intervention.

One of the main problems affecting the rehabilitation process is the extreme difficulty to accurately estimate all the costs involved, which is a vital problem needing to be resolved, as the types of intervention are related with the production costs of the work done. Therefore, in a first stage, knowledge about this type of work was solidified and the different future uses were characterized, especially in residential buildings. In a second stage, values per square meter of intervention were estimated, with the objective to provide a basis for estimating the costs of a rehabilitation operation in buildings or fractions. Additionally, and included in the dissertation, the feasibility of acquiring a fraction of a property, rehabilitate it and commercialize it in terms of the business model (future use) was evaluated.

Keywords: Renovation; rehabilitation; refurbishment; cost; investment in rehabilitation; future use.

I – Introduction

For decades, housing policy in Portugal was focused in allowing households to buy a home by conferring easy access to credit, even for low-income households [2],[10]. The urban development model was based on new construction and expanding the urban centres. In this way, overbuilding became an unsustainable model.

In 2007 the impact of the financial crisis affected the demand side, where the high level of unemployment, the lack of liquidity in banking, the decline in consumer confidence and the evolution of non-housing related consumption decreased the demand for homebuyers and investors.

Over the time, the aging of the housing stock is increasingly cause for concern, both for the users and for those who pass in the city.

Nowadays, the building degradation mainly due to lack of periodic maintenance operations and rehabilitation has become a problem and rehabilitation emerged as a corrective measure for historical centres, such as Lisbon, that needed to be preserved due to its historical and architectural heritage [3].

The Portuguese economy is facing major challenges, however the most important is the need to find a strategic solution that allows a sustainable growth in the long term.

II – Framework

This document examines the business of buildings rehabilitation and the main analysis divides into three topics: the first about rehabilitation; the second about the future uses; and the third about real state investments in rehabilitation.

After studying the relevant literature, costs involved in this type of investments were studied, seeking to consolidate knowledge in this field and a study was made about financial feasibility of acquiring a property, rehabilitate it and commercializing it, in terms of future use.

III – Rehabilitation

Regarding rehabilitation, as the different typology of buildings rehabilitated are on different states of conservation, quickly was concluded that the better way to achieve the goal was classify the different typologies of rehabilitation, assigning a graduation. Therefore, four types of intervention were identified and they are expressed in Table 1.

Table 1 – Intervention degrees.

(1) Slight rehabilitation
Cleaning and maintenance. Minor repairs and improvements of facilities and equipment, especially in bathrooms and kitchens. Modernization of the various components and some punctual roof repair.
(2) Medium rehabilitation
(1) + New facilities introduction. Reinforcing roofs' and floors' elements; walls and roof interventions and common areas improvement. Can consider removing some non-structural walls, expanding the space of a few compartments, according to the current space requirements.

(3) Deep rehabilitation

(2) + Profound changes concerning the distribution and organization of indoor spaces. Repair of damaged constructive elements that could compromise the security of the building and the construction of new facilities.

Exceptional rehabilitation

(3) + Exceptional cases that require a deeper level of intervention.

IV– Future uses

Based on real estate services and investment management reports was identified four main markets related with residential building rehabilitation. The ones identified are:

- Own housing market - One who has won more expression in recent years. However, nowadays, buy a house it's common by foreign people. The Golden Visa program, as well as growing adherence to the Non-Habitual Resident (NHR) tax regime, created an equally decisive legal framework to consolidate foreign demand for real estate properties;
- Traditional rental market - Asleep in last years, the amendments made to the Urban Lease Regime paved the way to liberalise the residential rental market, turning it into a truly attractive option from an investment perspective;
- Students rental market - With a strong membership in last years due the Increase of Students in Mobility Programs. Lisbon has attractive costs compared to other international locations and the positive trend is expected to continue;
- Short term rental market - Today, the city of Lisbon is undeniably the focus of great international interest. That effect was visible at first in the tourism market, but lately, the city has also been attracting significant investment into the residential sector.

V – Investments in rehabilitation

The building regeneration real estate has been one of the development sources for the real estate Market, boosted by the public investment [5]. After doing a research through the existing knowledge on this theme, the different phases of a real estate investment were identified, according to PTPC [11]:

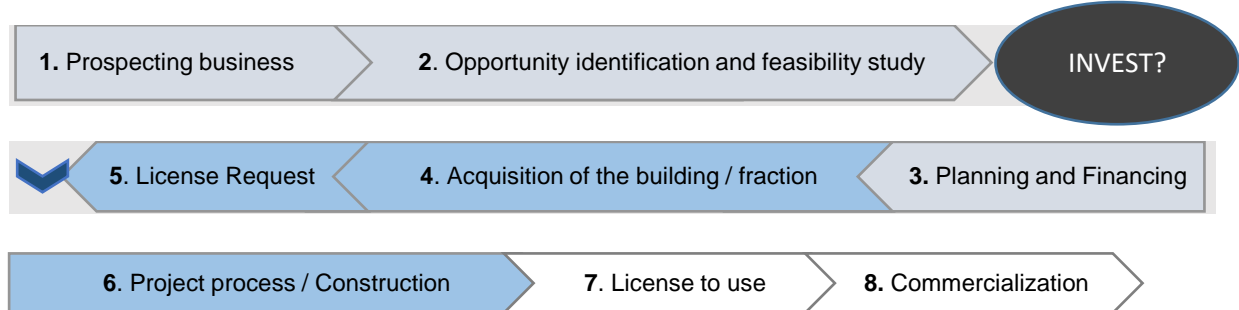


Figure 1 - Stages of the real estate investment.

It was concluded that all the interaction with laws and regulations governing the construction and real estate markets has to be properly studied by the companies who are seeking to establish themselves in these markets.

VI – Cost structure of real estate investment

A number of factors should be considered in order to determine the proper amount of investment in the renovation of an apartment or a building. This is largely determined by the need for financing to achieve the aims set in renovation and by the available financial assets [4].

The business plan and the cost effectiveness are also important. They show what benefits or profits can be expected from the investment into the renovation of dwellings. These are only effective when there is a complete and accurate understanding of the costs involved.

The basic factors to control the economy of such operations are the deep knowledge of cost factors (Table 2) and the good management of the construction (rehabilitation) costs.

Table 2 - Cost factors of a real state investment.

1. Property	Acquisition value Taxes (IMI,IMT) Stamp tax Services	3. Services	Project management Oversight Commercialization Administration Licensing
	2. Design		Data-Retrieval Architecture Estructure Specialties Infrastructure
5. Financing		Interest Taxes Capital opportunity	
6. Benefits		Sale Rent	

VII – Estimated rehabilitation costs

Cost determination is an attempt to translate the expenses involved in carrying out a particular project to a certain standard so as to provide as accurate a notion possible of the real cost of the work. The cost represents the sum of all work (labour, materials, equipment, etc) necessary to carry out a particular job or service, plus the anticipated profit margin [12].

Expenses or costs may vary in accordance with different components and are divided into direct costs, indirect costs, construction site costs and profit.

Generally it is very difficult to estimate costs when it comes to rehabilitation works because they often involve less familiar tasks, like the repair of defects and improvements or also the need for preliminary work (such as demolition), reason why it is exceptionally difficult to establish reliable yield values and consequently unit costs.

When discussing rehabilitation intervention each case is specific, therefore it is not easy to standardize costs. In this research, to work around this problem, an intervention area was chosen and costs of rehabilitation works already finished were requested.

The chosen area was the historic center of Lisboa, as can be seen in Figure 2.



Figure 2 - Study area

Gathering information about costs in the domain of rehabilitation is difficult and laborious. It was easy to find examples of rehabilitation projects but difficult to find people willing to share the detailed financial information.

A data base was built, supported on surveys and on database provided by CML. From it, values were estimated per square meter of intervention aiming to provide a basis for estimating the costs of a rehabilitation operation in fractions or buildings. The data analysis was divided into three distinct phases: the first based on the degree of intervention; the second depending on the use and the third according to the type of urban operation. In Figure 3 can be seen the estimated values for fraction or for the total building rehabilitation, based on the degree of intervention.

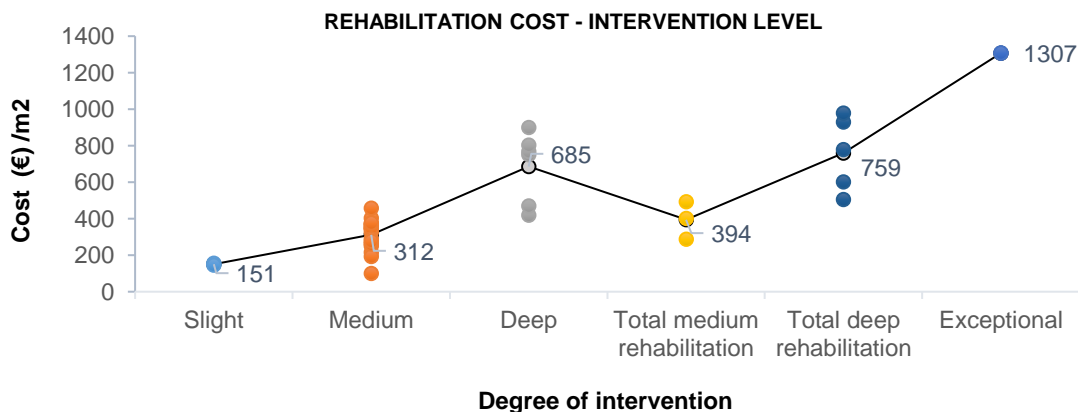


Figure 3- Relationship between the cost per unit area and the degree of rehabilitation intervention.

After estimating the average costs, in a second phase values were estimated depending on future use, as can be seen in the figures below.

Regarding slight rehabilitation, it was concluded that the costs are independent of the future use, due to similarity of applied techniques.

About medium rehabilitation, is visible on the graphic that the values vary with future use. The most expensive is housing, following the traditional rental and finally the short-term rental.

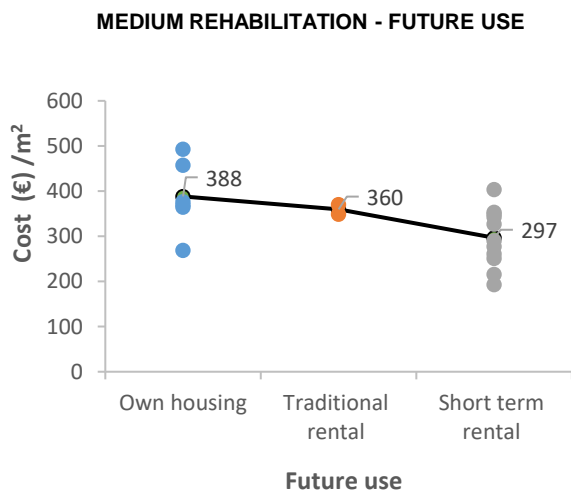


Figure 4 - Relationship between the cost of medium rehabilitation per unit area and category of intervention.

This tendency was also found when values were estimated depending on deep rehabilitation, as can be seen in Figure 5.

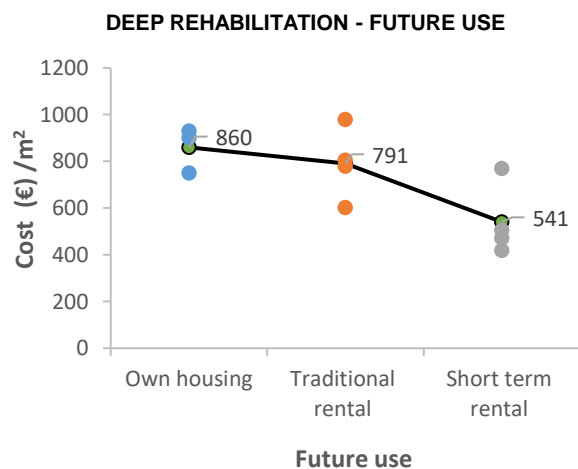


Figure 5 - Relationship between the cost of deep rehabilitation per unit area and category of intervention.

The results show that there is a relationship between the use and the type of rehabilitation, which is linked to the quality and type of construction:

- In the case of short term rental, only matters the presentation, comfort and appearance, which no prevails the construction quality. Structural reinforcements, thermal and acoustic coatings are not usually done in this type of intervention.
- The highest value in housing is related to the high level of demand exigency. Buying a property is a big investment and the main identified target is upper-middle class.
- The traditional rental is also a exigent target, but normally is more flexible, which reduce the rehabilitation values.

On the other hand, City Council of Lisbon provided a database and values were estimated related with the types of urban operation (Figure 6).

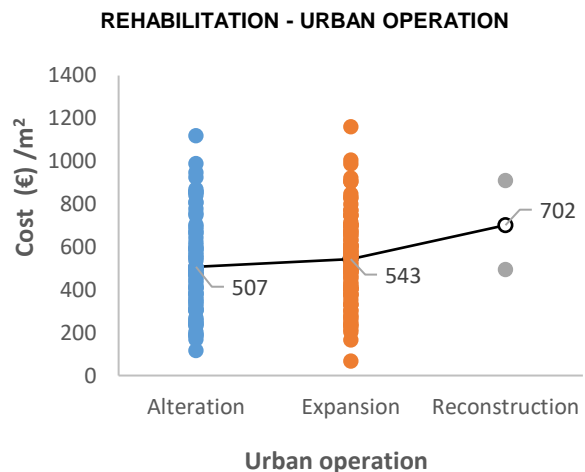


Figure 6 - Relationship between the cost of rehabilitation per unit area and urban operation

The responses to surveys have enabled a deeper understanding of these theme and it was concluded that the structural reinforcement, facade and roof rehabilitation, demolition works and new facilities are the works that have more weight in building rehabilitation.

In Table 3, can be seen the average costs that resulted from the analysis, which are an important tool for future investors or people acting in the rehabilitation, because allows an initial estimate of the overall cost of rehabilitation. Total rehabilitation means that the intervention takes into account not only the rehabilitation of the fraction as well as common areas and facade.

Table 3 –Analysis summary

Intervention degree	Average cost (€/sqm)		
	Housing	Traditional rental	Short term rental
Slight rehabilitation (fraction)	151,00 €/sqm		
Medium rehabilitation (fraction)	388,00 €/sqm	360,00 €/sqm	297,00 €/sqm
Deep rehabilitation (fraction)	860,00 €/ sqm	791,00 €/sqm	541,00 €/sqm
Exceptional rehabilitation	1307,00 €/sqm		
Total medium rehabilitation	394,00 €/sqm		
Total deep rehabilitation	759,00 €/sqm		

VIII – Feasibility

Finally, as part of the thesis, a study was made about financial feasibility of acquiring a property, rehabilitate it and commercializing it, in terms of the business model (future use).

This analysis was inspired on the practical guide and Excel sheet provided by IPAMEI to prepare a business plan, which requires knowledge of economic and financial analysis.

In this sense, based on a case study was studied the different business alternatives, concluding that the most cost effective solution is one that aims to short-term rental. Recent changes in the fiscal system (withholding tax) and new regulations for Local Lodging Establishments, have driven apartment purchases, with the intention of placing them on the rental market for short-term stays .

Also an effective solution is buy, rehabilitate and commercialize. However, the risk associated with property sale is considerably higher, and have a high sale period, which entails high costs. This analysis concluded that, although it involves an expenditure of time, it is essential to enable a sustainable decision making.

IX – Conclusions

The main conclusions are that there is a relationship between the use and the type of rehabilitation and that the least expensive intervention is the one that looks to the short-term rentals. It was also found that whatever future use, it is possible to intervene in residential buildings with lower cost than with a new construction.

From the feasibility analysis it was established that all investments may be recommended from a financial point of view, with the burden lying on the investor to understand which business model should be adopted for any given case. The time that any investor wishes to devote to his business is an exclusionary factor, and once again, and once again, it can be concluded that the most attractive model, regarding profitability, is the short term rental.

Reviewing the results gathered, it is also possible to ascertain that the present positive investment trend is expected to continue and that the majority of investments are redevelopment projects for residential and tourist uses (hotels and apartments for short-term rentals), with a profitability that can be very attractive.

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