The assessment of building performance: a property rating model for office and logistic buildings

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Keywords: real estate management, building performance, rating system

Themes: performance-based rating system, real-estate and building quality

Abstract

The property market and, in particular, the market of buildings for the services industry typically rate as “Class A buildings” those facilities that meet high quality standards.
The definition of Class A buildings, drawn from financial rating models, is not always supported by precise, objective and scientific identification of its characterizing elements.
This paper will illustrate criteria for determining the variables which support a *property rating* model, targeted at the identification of elements that can define the “quality” level of buildings according to performance-based criteria.
The research method applied has produced a classification of the most popular and internationally applied systems of building performance rating, based on functional and/or technological criteria. More specifically, this paper describes the assessment domains and the reference context/market taken into consideration by the various rating systems.
The research work was developed into an identification of the parameters that can be applied to build a “property rating” model for the buildings for the services industry, and for the industrial plants used for logistics activities, these parameters being suitable to represent simulations of the overall performances of buildings.

Introduction

The objective of the research is the determination of useful variables in the construction of a *property rating* model, aimed at identifying those elements that can objectively define the “quality” level of the buildings destined to the services industry in line with the criteria generally applied by the market to represent quality buildings (Class A).

The research work was made by the GestiTec Laboratory of the BEST Department, Politecnico di Milano, with the support of important partners: Gruppo Generali Immobiliare, Pirelli RE, Paschi Gestioni Immobiliari.

Given the purpose of the research, it was decided to ignore certain variables: compliance with regulations, and the criteria that determine the market value of buildings. The first condition is necessary but insufficient, and the second is dependent on income logics and not on the more objective technical/functional characteristics of buildings.

1. Findings and Methods

The definition of Class A buildings is fairly diffuse in the property market.

Operators in the real estate market usually utilize a parametric scale to represent the level of compliance of buildings with market requisites (A, B, C). The requisites are generally more or less the same.

Among the most authoritative requisites is the Office Class by the Urban Land Institute, which considers the following criteria: location, access to the building, quality of nearby tenants, professional management, materials used, age of the building. The Building Owners and Managers Association (BOMA) classifies buildings for the services industry on an A, B, C scale on the basis of requisites such as: quality of the building in its relevant market, quality of architecture, level of surrounding tenants, access, professional management, rent level, age of the building and modernization standard, attractiveness/ leasing difficulty.

The completed analysis revealed that the parameters utilized to define the level of compliance with the requisites are unclear or not very objective (e.g.: When can a level of accessibility be defined “good”? When can a floor layout be defined sufficiently “flexible”? When can technological equipment or building systems be defined “modern”?).

The research group of the GestiTec Laboratory examined the main practices adopted internationally for the evaluation of building performances according to functional and/or technological criteria. Office buildings can have different characteristics depending on the type of core business they host but, at the same time, they have to respect some rules in order to be market attractive.

The rating systems used today are varied; many are applied locally only, since they have to follow requisites and criteria that often depend on local regulations.

If we exclude certain “labelling” systems dedicated to the sustainability issue, we may say that no “standard” systems for the evaluation of building performances have spread.

The uncertainty of clients (property companies, investing institutions, investment funds, etc.) looking for a rating system is further fed by the presence of two methods that have different objectives:

- the first is that of “standards”, or systems that evaluate the presence of services, the types of installations, the infrastructure, etc, and that are inspired by the best practices adopted by property market players in the choice of buildings;
- the second type is that of the “labels”, more widely acknowledged by the market. They are prevalently oriented at evaluating environmental aspects, can be applied to all buildings and therefore have no specific application solely for offices.

2. Research Work

The research group attempted to compare different systems in order to identify and weigh all the elements considered in the different systems, which were then grouped under “labels”, and defined under a comprehensive performance level.

To facilitate interpretation, a summarizing chart was made to compare and evaluate all the methods of analysis by means of a series of parameters and elements.

The comparison of diverse methods of classification and/or of labelling takes into consideration the following elements:

1 **Location:** Does the system consider the location of the building? The labelling system valuates energy performance on the basis of environmental/climatic conditions of a determined region; some classification systems utilize the data for different purposes, therefore it is important to clarify:

1.1 *Geographical Independence*: when the calculation process can be applied in any geographic area;

1.2 *Context analysis*: when the calculation process considers elements “external” to the building and related to the geographic area in which it is located, or that are typical of the urban scale.

2 **Architecture:** Are the architectural characteristics of the building considered by the method? (the capacity to perform an “official” function).

3 **Technological Flexibility:** Does the method include the evaluation of the current and future possibilities of adopting different technological solutions over time? (floating floors, false ceilings, server rooms, special rooms, facility management area, storage spaces, etc).

4 **Interior Design and Furniture:** The method analyzes furniture and interior design (design of the lobby, entrance hall, client waiting area) and floor design (waiting rooms, meeting rooms, corridors, offices).

5 **Structure:** Does the method evaluate the construction type of the structure? (prefabricated, steel, reinforced concrete, …) Or does it have any particular performance? (e.g. anti-seismic).

6 **Building Comfort:** Does it evaluate the importance of environmental comfort for the occupants of the building? (window openings, ventilation systems, lighting comfort, external noise level, noise from other floors and from other rooms, internal noise level, temperature and humidity during office hours in the summer and winter, etc.)

7 **Support facilities for the Personnel:** Does the method evaluate the importance of services to the staff? (canteen, break area, nursery school, fitness room, showers, relax area, smoking area, etc.)

8 **Energy Performance:** Does the rating method include energy performance? Is there a distinction between:

8.1 *Building Frame Performance:* the performance of horizontal, vertical, opaque, or transparent closing devices, of the covering, etc.

8.2 *Systems Performance*: performance of the systems, i.e. their classification based on CO2 emissions, consumption of primary energy or use of renewable sources of energy.

9 **Security:** Does the method consider mechanical and electronic burglar alarm systems, and the presence of security services?

10 **Safety:** Does the method include analysis of fire alarm systems, accident risks, and emergency exits?

11 **Rental/Sale Value:** Does the rating system consider the market value of the area where the building to be certified stands? Is this consideration part of the rating method?

12 **Facility and Building Management:** Does the method evaluate the presence of facility management services inside the building, the presence of CAFM information systems or any tool typical of a professional management system?

13 **Life Cycle Phases:** In which phase can the rating method be applied?

13.1 Building Planning

13.2 Project and Construction

13.3 Management

13.4 End of the Life Cycle or Sale of the Property

14 **Year:** In which year was the rating system developed and made available?

15 **Classification Method:** Which classification method was adopted, and what judgement does it express?

16 **Evaluation Method:** Is the rating system based on self-rating by the owner or by the designer of the building, or does it require evaluation by a certified third party?

17 **Total Number of Parameters:** How many parameters were evaluated?

18 **Web Based System:** Does the method use an Internet interface to transmit and communicate data for the certification?

19 **Benchmarking of Buildings:** Does the calculation formula of the rating system allow for comparison with other buildings or with model buildings?

Performance Rating Systems for Office Buildings

The following systems were examined:

- BOSTI (Buffalo Organization for Social and Technological Innovation) (USA, 1980)
- BQA, Building Quality Assessment (New Zealand, 1985)
- BQI, Building Quality Index (Hong Kong, 2004)
- Building Class ABC (Atlanta Office Space, USA)
- Building Class Moscow (Moscow, 2003)
- Office class classification BOMA (Building Owners and Managers Association International, USA)
- DQI, Design Quality Indicator (UK, 2002)
- The International Classification of Office
- Logometrix (Australia, 2006)
- Office Class Bulgaria (Bulgaria, 2006)
- Office Class ABCD (Australia, 2006)
- Offices Development Handbook (Urban Land Institute, 1998)
- PEBBU, Performance Base Building (NL, 2004)
- POE, Post Occupancy Evaluation (USA, 1980)
- REN, Real Estate Norm (NL, 1992)
- Star Office Rating (EU)
- STM, Serviceability tools and methods (Canada, 1995)
- Office Building Rating, Politecnico di Milano (Italy, 2008)

Sustainability and Energy Certification Systems

The following systems were examined:

- 3System (China, 2006-2008)
- BREEAM (Building Research Establishment Environmental Assessment Method) (UK, 1990)
- DGNB (Germany, 2008)
- EU Energy Pass (EU, 2002)
- GREEN BUILDING CHALLENGE (2002)

- HK-BEAM , Hong Kong Building Environmental Method (Hong Kong, 2003)
- LEED (Leadership in Energy and Environmental Design) (USA, 2000)
- NABERS Australian National Built Environment Rating System (Australia, 2009)
- ITACA (Italy, 2002)

The majority of the systems under examination consider only some of the variables deemed fundamental for a comprehensive evaluation of a building; control of energy consumption and environmental compatibility are particularly diffuse.

Among the systems analyzed, only a few evaluated building performance with “cross-disciplinary” criteria that embrace different thematic or scientific areas (systems performance, management model, services, energy performance, etc.).

The research analysis revealed that there is no internationally recognized system to rate buildings according to the definitions applied by the trading industry (Class A) or, at least, a system that takes into account shared parameters and standards. Many of the methods researched are inevitably linked to the context for which they were developed.

This characteristic concerns in particular the systems designed to evaluate energy performance (labelling systems) which, by nature, often have to refer to regulations and provisions that differ from country to country.

2.1 The office building rating system

Following the analysis, the research group determined the different areas of analysis that could represent the performance level of buildings in a more complete and objective manner.

The system was developed with the support of three important organizations operating in property investment and commercial building management: Paschi Gestioni Immobiliare, Generali Gestione Immobiliare, and Pirelli Real Estate.

The Rating Model is divided into 13 sections, with over 220 items to be filled in:

1. BUILDING FRAME:

1.1 building frame

1.2 building orientation/exposure

1.3 external soundproofing

1.4 performance of glasses

2. LEVEL OF INTERNAL SOUNDPROOFING (internal sound comfort):

2.1 type of finishes

2.2 systems and furniture items that minimize noise inside the building

2.3 soundproofing of engine rooms

2.4 soundproofing of pipes
2.5 soundproofing of skylight shafts
2.6 soundproofing certifications

3. ENERGY
3.1 classification obtained according to the energy certification in force
3.2 systems that use renewable sources of energy

4. AIR CONDITIONING
4.1 type of systems
4.2 parameters that are monitored and controlled (heating, cooling, humidity, temperature, individual temperature adjustment in every room)
4.3 flexibility (possibility to disconnect part of the system)
4.4 consumptions control (BMS system)

5. LIGHTING
5.1 flexibility of the electric system
5.2 consumptions
5.3 visual wellbeing
5.4 natural lighting
5.5 lighting equipment installed per workstation

6. EFFICIENCY OF SURFACES
6.1 flexibility and efficiency of space
6.2 surface performance indicators
6.3 services supporting the activity and the organization
6.4 “eco-friendly” areas

7. SAFETY SYSTEMS
7.1 burglar alarm
7.2 fire-proof system
7.3 flooding prevention system
7.4 general control of systems

8. MANAGEMENT
8.1 management and use model
8.2 services to people

9. COMMUNICATION / WIRING SYSTEMS

9.1 characteristics of communication systems

9.2 structured wiring system with possibilities to expand it

10. INDOOR FINISHES

10.1 quality of internal finishes in: reception areas, offices, meeting rooms, conference rooms, toilets and restrooms

11. URBAN FACILITIES

11.1 access

11.2 public transport

11.3 car parks

11.4 public services

11.5 services for human consumption

11.6 areas of attraction

12. LIFTING DEVICES

12.1 general characteristics and performance levels

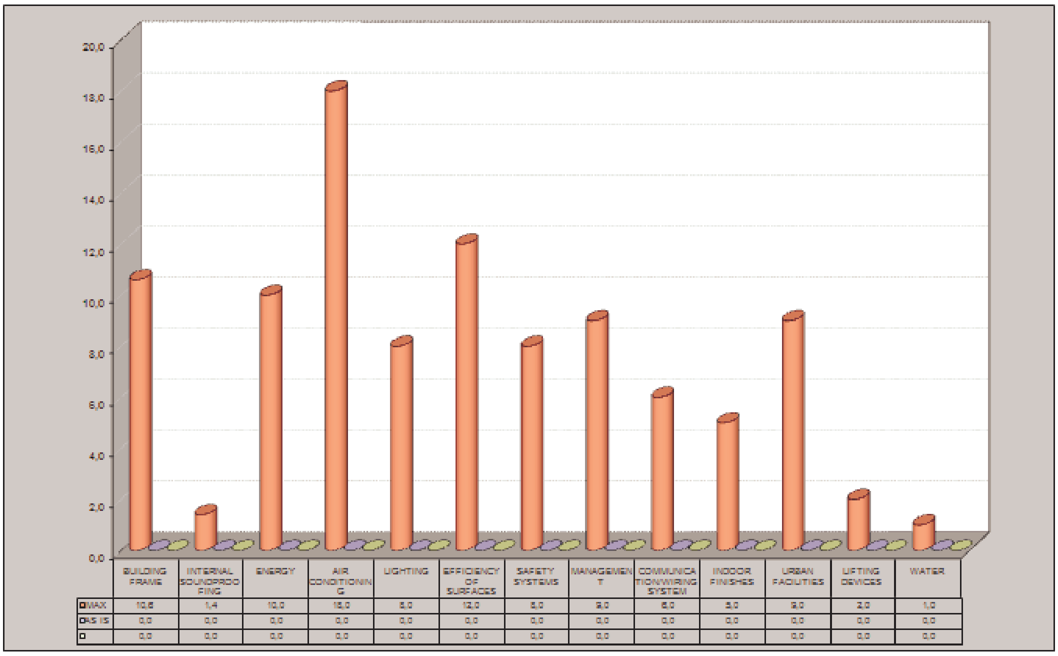
13. WATER

13.1 recycling of rain water

13.1 recycling and treatment of storm sewage

Naturally, the importance given to the different sections of the analysis can vary (Fig. 1) in relation to the effective weight of each element on the overall performance of the building. The weighing system was empirically determined on the base of experiences, of the tests done and of the opinion/judgment expressed by the organizations involved.

Figure 1: Different evaluation contexts have a different "weight" in relation to the effective incidence of each single element taken into consideration on the overall performance of the building.



Each section of the analysis, formally represented by one or more tables, is given a score based on the variables that must be considered for each building: a check-list simplifies the compilation of the tables.

The system collects information on the various research sections.

To fill in the data-base a detailed knowledge of the buildings and availability of information are mandatory.

Figure 2: An example of the answer options that characterize the "Internal soundproofing" evaluation table. The system has a guided fill-in procedure (with different answer options) in the different evaluation sections.

2 - INTERNAL SOUNDPROOFING

2.1 - INTERNAL SOUNDPROOFING

INDOOR NOISE

Floors fitted with a wall-to-wall carpet (In case of open-space areas)	YES
Was flooring laid on rubber carpets that insulate against floor-impact noise (floating floor)?	YES
Are internal wall made with multi-layer material, and/or do they feature a cavity filled with a sound-absorbing material (fibreglass)?	YES
Is the false ceiling made with insulating panels that contain a cavity filled with fibrous material (as mineral wool, polyester fibre or wood wool), or with porous material (as melamine foam) to prevent the false ceiling from becoming a soundbox?	YES
Are engine rooms adequately soundproofed?	NO
Are technical plants installed far from acoustically "sensitive" areas?	YES
Are systems engines installed on vibration-damping supports?	YES
Are silencers installed in air-conditioning ducts?	YES
Are air-conditioning ducts lagged with sound-absorbing material, or else do they run in sound-proofed false ceilings?	YES
In those points where they connect to masonry elements, are water-supply piping/air-conditioning ducts insulated with resilient material?	NO
Does the water-supply piping run in sound-proofed skylight shafts?	YES
Is acoustic certification provided for the installed products and components?	YES

Figure 3: Surface performance is represented by an efficiency index. Buildings with the same gross floor area can have different efficiency indexes. Here too, the parameters do not correlate to criteria dictated by law or regulations, but by best practices among the operators. The figure that follows lists some of the elements considered in evaluating the efficiency of surfaces.

6 - EFFICIENCY OF SURFACES

6.1 - FLEXIBILITY AND EFFICIENCY OF SPACE

Is floor width ("glass to glass" or "wall to wall") not lower than 12 meters?	YES
Is floor width a multiple of 1.5 meters?	YES
Is the distance (span) between the pillars of the building frame not lower than 6 meters?	YES
Does a typical floor feature a rather regular plan, with parallel walls that form angles of about 90° (but never markedly lower than 90°)?	YES
Inter-floor height is	LESS THAN 370 CM
Is the height of the technical cavity under the walking surface of the technical raised floor not less than 15 cm?	YES
Is there a "base module" for renting?	YES

This method can be used to evaluate the performance of existing, new, or occupied buildings, or those waiting to be occupied. It can also be used to simulate project implementation and verify the consequences of interventions on the overall performance of a building.

During the testing phase diverse simulations were done to represent different scenarios following specific project interventions. The system, in fact, is able to represent graphically the actual status (AS IS) and the project status (TO BE).

Figure 4: The figure represents all the analyzed sections (13) with their relative score based on the actual status (AS IS), in the gray columns. The radar graph highlights those sections which, based on the criteria used for the evaluation, have a lower performance and are therefore more suitable for planned interventions and/or redevelopment.

Tipo	TYPE 1	Tipo 2	TYPE 2	%	SCORE	MAX SCORE	%	SCORE
1	BUILDING FRAME	1.1	- building frame	100,0%	5,50	5,50	54,5%	3,00
		1.2	- building orientation/exposure	53,3%	0,80	1,50	53,3%	0,80
		1.3	- external soundproofing	66,7%	0,40	0,60	33,3%	0,20
		1.4	- glasses	70,0%	2,10	3,00	46,7%	1,40
2	INTERNAL SOUNDPROOFING	2.1	- internal soundproofing	71,4%	1,00	1,40	71,4%	1,00
3	ENERGY	3.1	- energy certification	66,7%	4,00	6,00	0,0%	0,00
		3.2	- renewable sources of energy	37,5%	1,50	4,00	0,0%	0,00
4	AIR CONDITIONING	4.1	- general	94,7%	9,00	9,50	94,7%	9,00
		4.2	- flexibility	62,5%	2,50	4,00	62,5%	2,50
		4.3	- control and power consumptions	100,0%	4,50	4,50	100,0%	4,50
5	LIGHTING	5.1	- electrical and lighting system	98,0%	4,90	5,00	98,0%	4,90
		5.2	- natural lighting	56,7%	1,70	3,00	56,7%	1,70
6	EFFICIENCY OF SURFACES	6.1	- flexibility and efficiency of space	86,0%	4,30	5,00	86,0%	4,30
		6.2	- surface performance indicators	100,0%	5,00	5,00	100,0%	5,00
		6.3	- activity/organization support services	95,5%	1,43	1,50	95,5%	1,43
		6.4	- "eco-friendly" areas	35,0%	0,18	0,50	35,0%	0,18
7	SAFETY SYSTEMS	7.1	- safety/special systems	81,3%	6,50	8,00	0,0%	0,00
8	MANAGEMENT	8.1	- management/use model	78,3%	4,70	6,00	78,3%	4,70
		8.2	- services to people	100,0%	3,00	3,00	100,0%	3,00
9	COMMUNICATION/WIRING SYSTEM	9.1	- communication/wiring system	66,7%	4,00	6,00	66,7%	4,00
10	INDOOR FINISHES	10.1	- offices	100,0%	1,50	1,50	100,0%	1,50
		10.2	- reception area - hall	100,0%	1,00	1,00	100,0%	1,00
		10.3	- conference rooms - training rooms - meeting rooms	91,7%	0,92	1,00	91,7%	0,92
		10.4	- internal staircases	100,0%	0,50	0,50	100,0%	0,50
		10..5	- toilets/restrooms	100,0%	1,00	1,00	100,0%	1,00
11	URBAN FACILITIES	11.1	- access	60,0%	0,90	1,50	60,0%	0,90
		11.2	- public transport	100,0%	3,00	3,00	100,0%	3,00
		11.3	- car parks	80,0%	2,40	3,00	80,0%	2,40
		11.4	- public services	86,7%	0,43	0,50	86,7%	0,43
		11.5	- services for human consumption	85,7%	0,43	0,50	85,7%	0,43
		11.6	- areas of attraction	66,7%	0,33	0,50	66,7%	0,33
12	LIFTING DEVICES	12.1	- lifting devices	100,0%	2,00	2,00	100,0%	2,00
13	WATER	13.1	- water	50,0%	0,50	1,00	0,0%	0,00
			T O T A L S	**81,9%**	**81,9**	**100,0**	**66,0%**	**66,0**

There are no limits to the simulations of planned interventions.

Of course the authors suggest focusing attention and resources on those aspects that weigh more in the determination of the overall performance of the building and/or on those that show deficits when analyzing the actual status (AS IS).

An example is the following simulation on a building in the testing phase.

As shown in figure 5 the graph underlines three areas that are particularly below the performance level, and which could receive a redevelopment intervention.

The sections are:

Energy: (in the analysis of the actual status, the building is classified C according to the Italian parametric scale):

E ZONE	F1 ZONE	F2 ZONE	
C	11 <= EP_H < 27	15 <= EP_H < 37	19 <= EP_H < 46

Value limits of energy class [kWh/m3 year] for heated spaces for office buildings).

Water: there are no systems to collect and treat storm sewage, and to re-use rain water.

Safety Systems: there are no internal or perimeter burglar alarms; no CCTV control system; no flood/leak detection system in the technical rooms; no centralized control and management system in the building.

Figure 5: The radar graph represents the performances of the building under examination based on its actual status. Sections as Energy, Water, and Safety Systems are particularly wanting. It is reasonable to expect that a redevelopment intervention would give priority to these aspects.

RATING	SCORE
AAA	100 - 90
AA	89 -80
A	79 - 70
BBB	**69 - 60**
BB	59 - 50
B	49 - 40
CCC	39 - 30
CC	29 - 20
C	19 - 10
D	< 10

AS IS

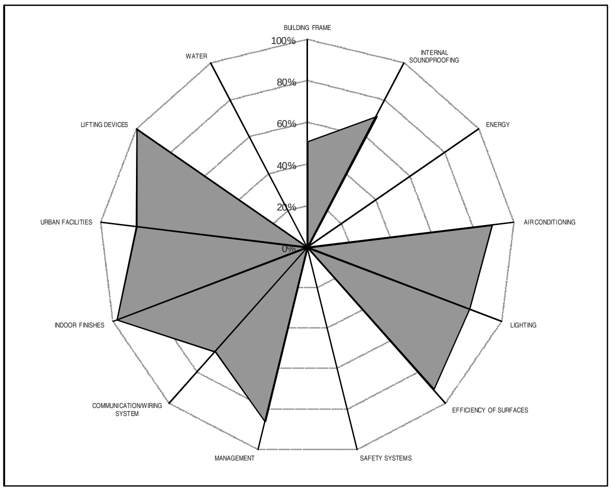
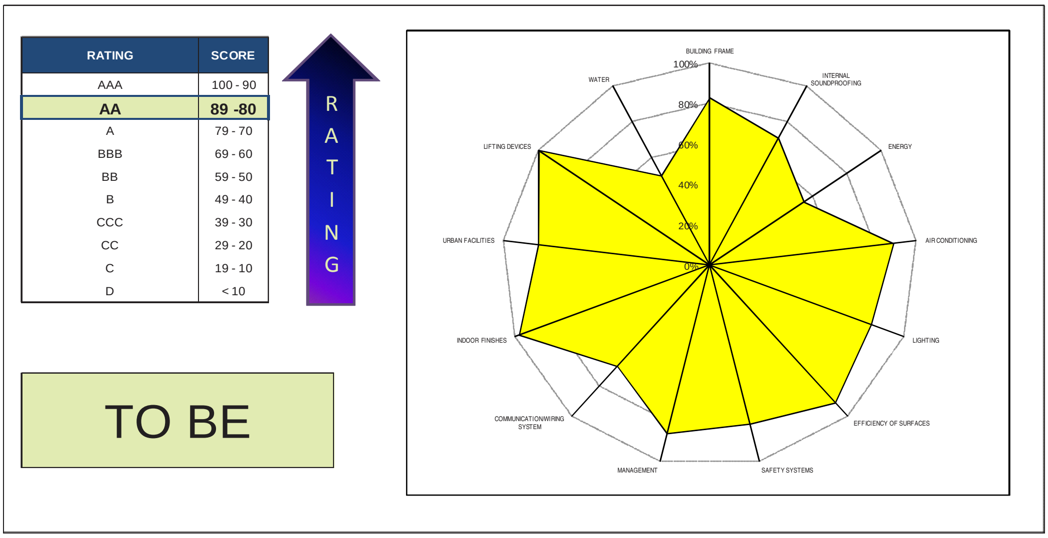


Figure 6: The figure gives a graphic representation of the consequences of a redevelopment intervention that would take into consideration the sections that resulted below performance level in the evaluation.



2.2 The logistic buildings

2.2.1 Introduction

Growing competitiveness among companies, the will to balance the accounts, and improved manufacturing and administrative processes have pushed Italian organizations, although later than other countries, to try and increase the value of their real estate through research into financial and management optimization of their property.

Beyond these aspects, which can be applied equally in all sectors, Italian organizations have become more aware of the importance of optimizing distribution flows, and of the strategic role played by the flow of raw materials. Another major aspect is Italy's natural bend to be a logistic platform; over the years this has generated a growing interest by large investors in property for logistics use. Some real estate funds have cautiously begun to diversify their own investments in this direction.

Besides this, large real estate businesses and other players have begun to specialize in investment management in this market branch. Some companies that provide supply-chain management services not only plan and manage inter and intra-agency logistics, but now also propose structural opportunities to their clients.

The core business of some organizations has become that of acquiring, increasing the value and selling properties for logistics use. This was due to investors' growing interest in this type of real estate. This specialized destination of use requires a more complete and complex evaluation of assets, from the financial point of view as well as under the upside property aspect that these are able to generate. The fragmentation of the Italian industrial system and the peculiar characteristics of the economic evolution in Italy have partly slowed down the dissemination of real estate practices that are well established abroad. Even today, most owners of logistic buildings in Italy are also the direct users of the same property, which is widely scattered all over the territory.

These are flanked by a few specialized professional investors who, over time, have trained expert professional teams to make choices on real estate, these choices being previously made by the managers of logistics firms.

Although still young, the specialized investors nationwide are fully aware of the high quality standards that buildings for logistics use are called for today. Beyond the specific requisites of each case, depending on the differing demands of the final user, and going beyond the different types of possible investments (inventory[1], acquisition[2], built to suit[3], sale and lease back[4], etc.) the creation of a general model for the analysis and assessment of operations in the area of logistic real estate is desirable.

2.2.2 The logistic buildings rating system

On the base of the experience acquired with buildings for the services industry, the research group proposed an analogous research work to highlight performance indicators for the buildings destined to logistics activities.

The method is the same as for developing the rating system for offices.

Precious support in the identification of indicators was given by Jones Lang Lasalle and Spazioindustriale (an investment fund specialized in industrial buildings).

Although in single cases the needs of the operator define the particulars and characteristics of the building, it is possible to identify a series of shared parameters that are valid benchmarks.

These parameters include:

- LOCALIZATION/RELATION WITH THE CONTEXT
- SURROUNDING INFRASTRUCTURAL SITUATION
- TECHNICAL/CONSTRUCTION CHARACTERISTICS
- EXTERNAL SPACES/AREAS

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[1] Inventory: *"It is the operation with the highest risk and the highest margin of gain. It is a development operation carried out completely by the investor who will also manage the marketing activities, as there are no tenants in the initial phase."* from *Mercato immobiliare, logistica e facility management*, D.Bella L.Marchetti, Il Sole 24 ore, Milano, 2003

[2] Acquisition: *"It is the purchase of profit-yielding real property from another investor, preserving the same tenant. This operation has a minimum risk."* from Bella-Marchetti, 2003

[3] Built to suit: It is the construction or the alteration work (renovation, etc.) performed by a property owner according to the requirements and the indications specified by the tenant who will then occupy the property.

[4] Sale and lease-back: see note 7, Chapter 5

- COMPLEMENTARY AND SYNERGIC ACTIVITIES
- TENANT CHARACTERISTICS (ACTUAL/FUTURE)
- MANAGEMENT COSTS

1. LOCALIZATION /RELATION WITH THE CONTEXT

1.1 Access/Easy to reach

1.2 Closeness to current and future clients of the logistics operator

1.3 Attractiveness/activity of the market in that area

1.4 Population Density

1.5 Presence of other logistics operators

(it can be seen as a strength if synergy with them is possible, or a weakness if competition with them is too strong)

1.6 Traffic congestion level

1.7 Distance from the closest town

(this parameter can have a dual aspect: a greater distance means lower purchase costs for the site, a shorter distance means proximity to a specific market type and to periurban traffic)

2. SURROUNDING INFRASTRUCTURAL SITUATION

2.1 Presence and quality of transportation infrastructures

2.2 Proximity to main traffic routes (A-roads, circular roads, etc.)

2.3 Proximity to highway exits

2.4 Proximity to railway lines/railway yards

2.5 Proximity to ports/airports

2.6 Projects for the construction of new infrastructures in the area

2.7 Number of sides of the site that have already been developed

3. TECHNICAL/CONSTRUCTION CHARACTERISTICS OF THE BUILDING

CHARACTERISTICS OF THE AREA

3.1 Surface area of the site (territorial area/land area)

3.2 Authorized covered area

(in an existing building the remaining area to be covered, if any)

3.3 Volume authorized to be built

(in an existing building, the remaining volume to be built, if any)

3.4 Max. allowed height

(in an existing building, under-beam height)

3.5 Geology of the soil and seismic concerns

CHARACTERISTICS OF THE BUILDING

3.6 Structural mesh of the building

(the largest possible distance between the pillars so as to not hamper the organization of internal spaces)

3.7 Maximum flexibility of the building/Possibility to alter the internal layout

3.8 Possibility to break up the building/Possibility to divide it in the future among tenants/multiple buyers

3.9 Possibility to install automatic handling systems

3.10 Possibility to adapt the existing handling systems to alterations, if any, of the internal layout

3.11 Areas suitable to serve as offices

3.12 Areas suitable to serve as working zones

3.13 Areas suitable for research/feeding of handling means

3.14 Areas suitable to serve as technical rooms

3.15 Areas suitable to serve as locker rooms, toilets and restrooms, canteen, etc.

PLANTS CHARACTERISTICS

3.16 Fire-detecting and fire-fighting system

3.17 Electric system

3.18 Burglar alarm system

3.19 Heating system for the various areas / air conditioning in office spaces

3.20 Pre-arrangement for the installation of a photovoltaic system

3.21 In existing buildings, assessment of the state of all systems

4. EXTERNAL SPACES/AREAS OF THE BUILDING

4.1 Length of load and unload platforms

4.2 Number of doors

4.3 Folding doors on two sides

4.4 Curtains to protect merchandise against rainfall

4.5 Width of the front/back yard

4.6 Parking areas for motor vehicles

4.7 Manoeuvring areas for motor vehicles

4.8 Waiting areas for travelling technical goods

4.9 Areas for the separate collection of waste and of scrap material

4.10 Adequate internal road system

4.11 Number and size of accesses/gates

(this influences also the possibility to break up the building)

4.12 Car parks

4.13 Close vacant areas

(for future expansion, if necessary)

5. COMPLEMENTARY/SYNERGIC ACTIVITIES

5.1 Lunchroom / a cafe

5.2 Public transport services

5.3 Toilets and restrooms for teamsters

5.4 Maintenance services for motor vehicles

5.5 Customs office

5.6 Logistics operators wanting to do a business that is upstream / downstream that of the tenant of the building or, in any case, other businesses that are complementary and useful to the tenant.

6. MANAGEMENT COSTS

6.1 Rental Cost

6.2 Building Maintenance Costs

6.3 Systems Maintenance Costs

6.4 Costs of consumptions/bills

6.5 Miscellaneous standardization costs

6.6 Fixed Costs (property taxes, insurance, local taxes, etc.)

6.7 “Condominium” Costs

3. Conclusive remarks

The research instrument was conceived as an objective approach to perceive the “appeal” level of a property. The instrument, apart from rating existing real estate in an objective way, can also be used in the project briefing phase, that is, the preliminary phase for development or upgrading operations.

Two considerations emerge from the use of the variables analysed within the instruments we have developed. Whether it is new property, or we are considering an acquisition or are contemplating the renovation of an existing building, the possibility to use a method guideline decreases the chances of neglecting any of the important details associated with a quality building today.

In addition even during the disinvestment/sale phase, the possibility of giving a potential buyer a database with the information based on which the building was selected, purchased, and managed, is an element of transparency that benefits the property.

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