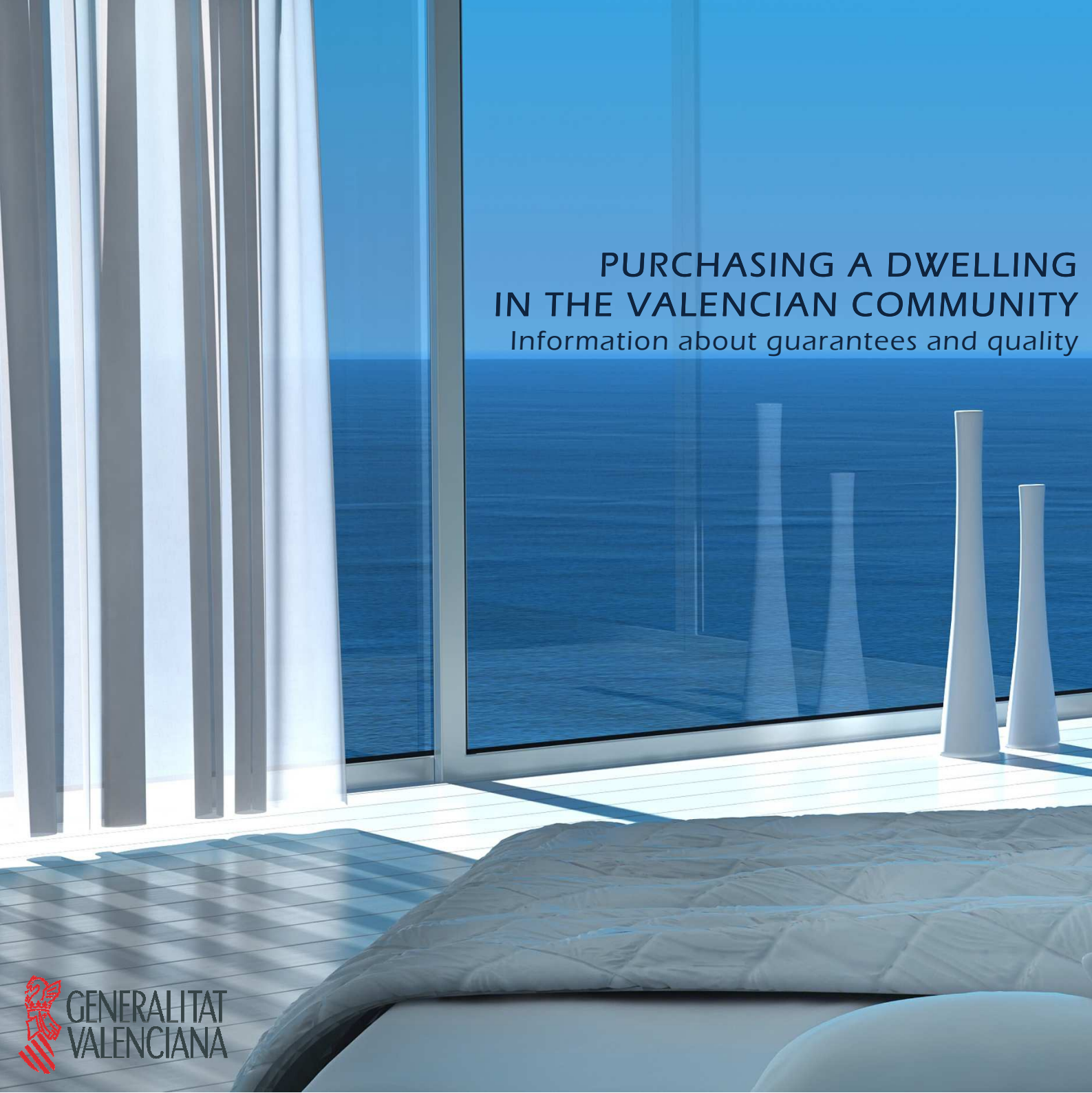


PURCHASING A DWELLING IN THE VALENCIAN COMMUNITY

Information about guarantees and quality

GENERALITAT VALENCIANA

The aim of this document is to release **the technical, legal and administrative guarantee system** which regulates the building process and the technical quality offered by existing residential buildings in the Valencian Community. The document is organized in the following sections:

- **Building process**

  Building process of residential buildings is summarized in this section, from the project design stage to the occupation of the completed dwelling. It describes how current building regulations control this process as well as the responsibilities and guarantees of each of the agents involved.

- **Statutory technical guarantees**

  Building technical quality guarantees are compiled in this section. These are given by statutory legislation to users, including both general building requirements (structural safety, sanitation, etc.) and specific conditions for construction elements (facades, roofs, etc.).

CONTENTS

BUILDING PROCESS

INTRODUCTION

The building process in Spain, and in particular that of the residential buildings in the Valencian Community, is regulated by **current legislation.** It sets up the **obligations and responsibilities** of the **agents** involved in the building process, as well as the **guarantees** to protect the **user** based on **basic quality requirements** that buildings must satisfy.

Buildings have to be designed and built in such a way that safety for people, society welfare and environment protection are guaranteed. To assure they are satisfied there is a wide framework of **statutory technical regulations** which establish the basic quality requirements of buildings and services.

The building is defined in the **Project Design** which justifies its compliance with the Building Regulations. This project is developed by the architect and a range of consultants, and must be endorsed by the relevant state registration bodies.

For building construction and its subsequent occupation, prescriptive licenses and other applicable **administrative consents** are required, according to applicable regulations.

Prior to the beginning of on-site works, the developer must obtain the **Planning Permission.** This license is requested to the City Council after delivering the Project Design together with any further documentation required by each town council. After checking that all documents comply with the regulations, the City Council grants the license.

Building construction is executed according to the project design and the applicable legislation, under the supervision of the Site Management. It is carried out by a contractor and certified subcontractors. Moreover, construction is subjected to **quality control** carried out by control entities and laboratories.

Once on-site works are finished, the developer requests the **First occupation license.** The City Council grants the license after verifying the compliance of the building with the project and the applicable regulations.

The process ends with the sale of the dwellings, formalized in public deed, and the registration in the Land Registry.

GUARANTEES AND RESPONSIBILITIES

Spanish legislation, through different regulations, effectively protects the buyer of a dwelling in all the various acts in which he is related with the developer and all agents involved in the building project and construction.

The Spanish Civil Code, as the general framework of social and economic relations, regulates the efficacy of the contracts established between the developer and the buyer, regarding the obligation to deliver a house which complies with regulations and legality. It also establishes the commitments and responsibilities of its non-compliance. The Civil Code is reinforced both in its effectiveness and in contracts that go beyond the general conditions, by the **Users and Consumers Protection Regulations**, which guarantee a certain level of protection to the consumer even if the signed contract ignores his own rights.

Likewise, in the field of promotion and sale of dwellings by a developer, in the event that the buyer agrees with the developer to make **advanced payments,** the **guarantees and warranties** that the seller must offer the buyer for the quantities delivered on account are regulated by the Law 57/1968 of 27th July, in order to ensure recovery in case of breach of contract.

The **minimum information** about the dwelling offered on sale that the developer must provide the buyer is extensively regulated by the Royal Decree 515/1989, of 21st April, so that the buyer gets all necessary information for the buying decision.

Finally, the **Building Act (LOE)** regulates the conditions to be met by buildings for residential and other uses, determining the **responsibilities** of companies and professionals involved in the design and construction of the building, and establishing the objective **guarantees** that the building contractor and the developer must offer the buyer. Because of its specificity, the periods by which professionals and companies are responsible for damage in the building, are detailed bellow:

- ✓ **ten years**, for damage affecting **structural** elements that compromise the mechanical strength and stability of the building; to ensure it, the developer is required to hire an insurance policy in favor of the buyers of the dwellings for the total cost of the building for a minimum period of ten years.
- ✓ **three years**, for any damage on construction elements and services which may cause a breach of **habitability** requirements.
- ✓ **one year**, the building contractor is liable for the damage affecting **finishes**.

Indicated periods begin on the date of the reception of the works.

BUILDING AGENTS

Throughout the building process the following **agents** are involved:

- ✓ **Administration**: regulates the quality of buildings to be met and guides on ways to achieve it, establishing the technical regulations which develop and set the basic requirements and the minimum quality standards. Local administration establishes regulations, developing the planning and building requirements.
- ✓ **Developer**: promotes and funds the construction works with an appropriate quality level and manages the required licenses and administrative consents to build. For this he needs to hold the compulsory Activity License to operate.
- ✓ **Designer**: holds the academic degree and professional qualification in architecture, must be registered in the corresponding State Registration Body and fulfills the required conditions to draw up the Project Design. Likewise, other consultants in the field of architecture or engineering can intervene in the project, subscribing their works and separates which will be coordinated by the designer.
- ✓ **Contractor**: holds the required qualification, professional and business skills and is registered in the corresponding Registration Body in order to identify its competence to accomplish the building works.
- ✓ **Site Management**: is the group of agents that manages and controls the execution of the building according to the Project Design and the Planning Permission, with the quality and safety levels required and coordinating the resources provided by the contractor. Site Management is formed by the **Technical Project Manager** and the **Project Execution Manager**, with academical and professional qualifications of Architect and Architectural Technician, respectively, and who are registered in their own Professional Registration Body fulfilling the required conditions to manage and supervise the development of the building works.
- ✓ **Building Quality Control entities and laboratories**: fulfill the technical requirements needed for the quality control of products and execution of on-site works and services, through the Statement of Responsibility before the relevant authority of the Valencian Community.

PROJECT DESIGN STAGE

The project design consists of the following stages:

- ✓ **Project design draw up:** The Project is the set of drawn and written documents where the building is defined so that it can be built according to the compulsory technical requirements and the brief given by the developer. The project is drawn up by the architect, and it has to be endorsed by the pertinent registration body. It can be supplemented with **partial projects or other specific technical documents** written by different competent consultants.

  To expedite the administrative process the developer can require the project to be delivered in two stages:

  - Technical Design Document, is a developed design which content is enough to apply for the Planning Permission, but insufficient to carry out the execution of the building works.
  - Construction Documents, production information with sufficient detail as to carry out the corresponding site works.

  A Technical Control Organism (OCT) hired out by the developer, supervises the documents of the project and issues a report so that the developer can contract the necessary insurance.

- ✓ **Granting of Planning Permission by the City Council**: to be able to start with the construction works, the developer must have obtained the Planning Permission which has been previously requested in the City Council where the building is to be built. The technical department of the council supervises all documents and issues the corresponding reports to grant the Planning Permission. The commencement of works is subject to the delivering of the Construction documents.

  Finally, a notary is to formalize with the developer, in public deed, the fact of having designed the building by means of the **Statement of New Construction and Condominium Property Act.**

CONSTRUCTION STAGE

Construction phase consists of the following stages:

- ✓ **Health and Safety Plan draw-up:** The contractor writes this document which must be submitted to request the opening of the work center from the labour authority.
- ✓ **Building construction**: Starts by signing the Setting-out Act by the developer, the Site Management and the contractor. The contractor together with the subcontractors, if any, will carry out the execution of works. Site Management will give instructions and supervise the construction process of the building according to the project and the Planning Permission, as well as the quality and safety requirements. They will also coordinate the means placed by the contractor. The **health and safety manager** will put into practice the general principles of prevention and safety on site.
- ✓ **Quality control on site:** apart from the control of the received products and the construction supervision of the building made by the Site Management, there are other different entities which are also involved in the quality control:
  - Laboratories responsible for the quality assurance of the building carry out trials or tests on the materials, systems or services used in the building works.
  - Quality control entities verify, if necessary, the quality of the materials and the execution of the works and its services. If determined by the relevant regional administration, these entities may accomplish the external control of the Energy Efficiency Certificate of the building.
  - The Technical Control Organism supervises the building structure and if so, also examines finishes, constructive elements and services related to the habitability of the building.

- **Construction Completion Documents draw-up**: The architect draws up the project documents which collate the completed building incorporating all variations made throughout the construction process, previously licensed by the relevant administration. It includes a report of the site visits, supervision and control tasks carried out. This document has to be endorsed by the corresponding Professional Registration Body.

  It includes the **Energy Efficiency Certificate of the finished building,** after the verification of compliance of the Energy Rating of the project with that obtained from the finished building. The developer registers on-line the Certificate, so that it has a public and informative nature for citizens.

- **Installations reports:** The certified installation companies fill in the prescriptive reports endorsed by the relevant Registration Body within the Valencian Community.
- **Construction Completion Certificate subscription**: upon completion of works, the final formal statement is made through the Construction Completion Certificate subscribed by the Site Management and endorsed by the corresponding registration body. This document refers to the accordance of the completed building to the project and its modifications, if any (Construction Completion Documents); Works Quality Management Book; compliancy of urban services required according to the Planning Permission and connection with the infrastructure networks; and the availability of the building to be used for the purpose for which it was built.

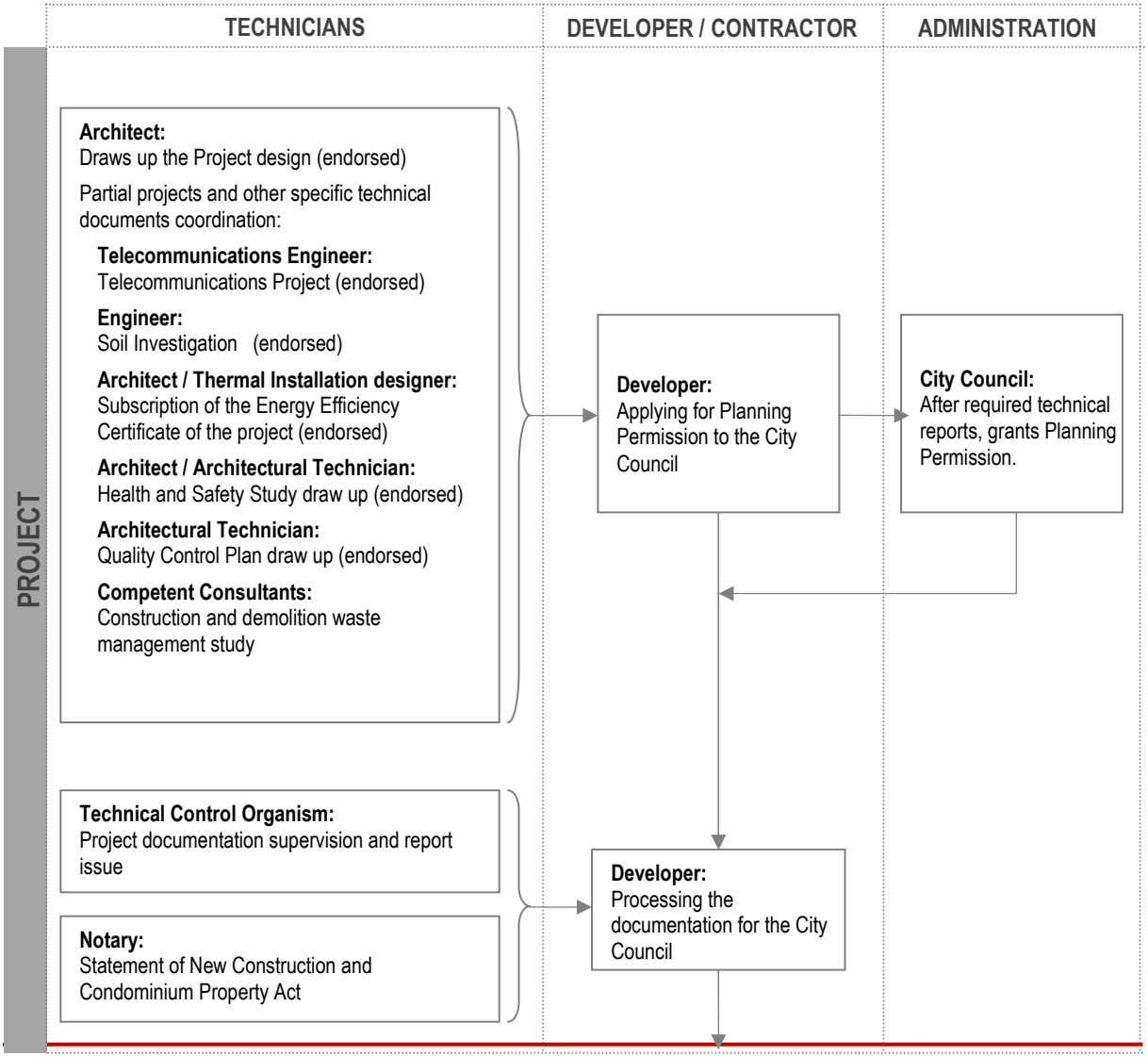
FINAL PROCEDURES STAGE

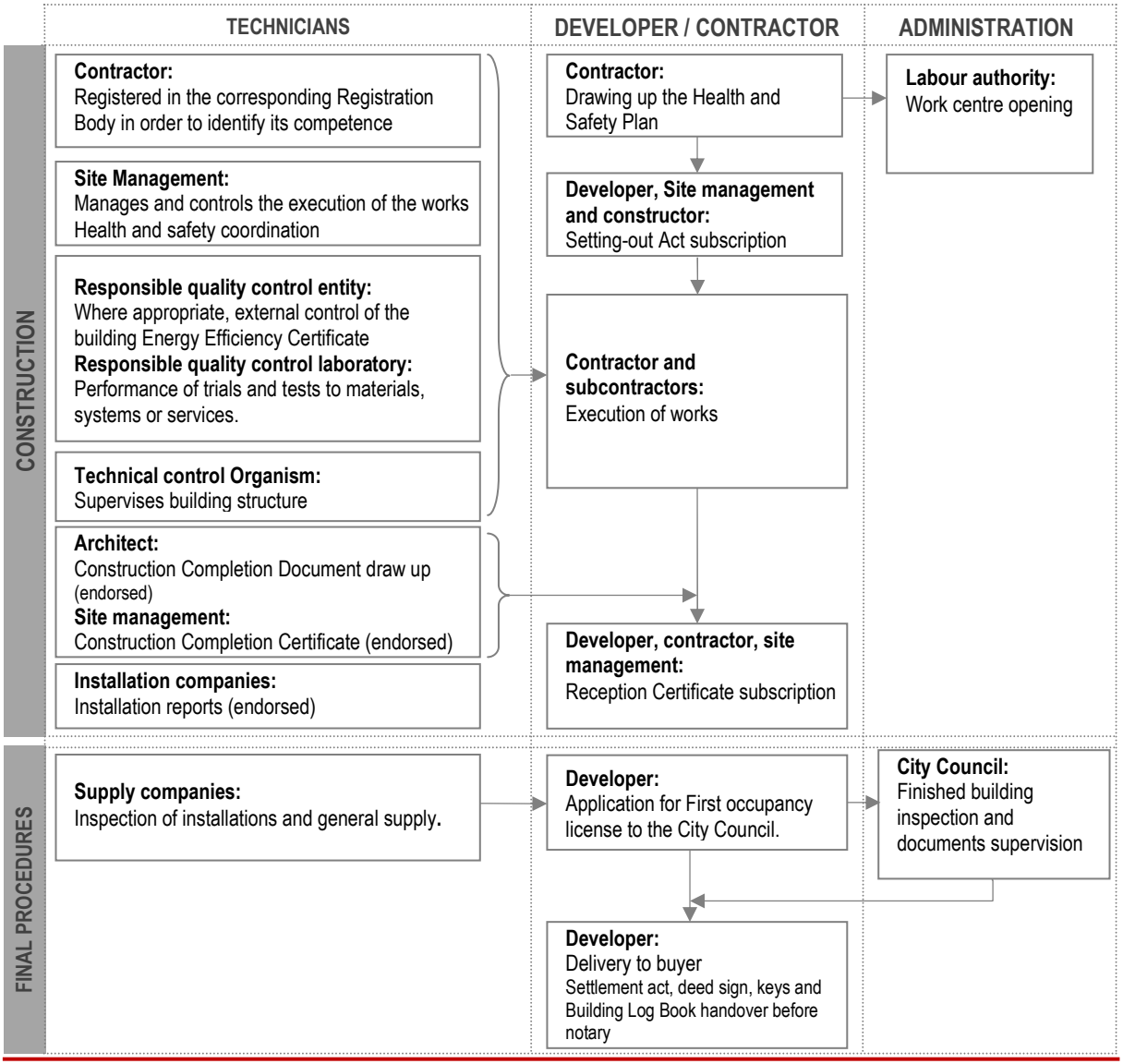
The final stage consists of the following:

- ✓ **Reception of the works**: It is the act by which the contractor hands over the completed building to the developer. The former, together with the Contractor and the Project Execution Manager, subscribe the **Reception Certificate**. From that moment the period of guarantees for material damage in the building due to faults or defects begins.
- ✓ **First Occupancy License:** It is granted by the City Council after having verified that the building has been constructed according to the Construction documents and the Planning Permission, and that it meets all the technical requirements of safety, sanitation and public ornament and can be used for housing.
- ✓ **Final Connection of services**: In order to get electricity, gas and water overall supply for the building, supplier companies inspect and certify the compliance of the services prior to final supply.
- ✓ **Formalization of the Building Log Book:** The developer formalizes the Building Log Book from the documents provided by the Site Management, contractor, subcontractors and suppliers. The Building Log Book includes administrative, legal and technical documents, as well as operation and maintenance manuals.
- ✓ **Sale.** It is the act of final account and handover of keys to the buyer by the developer, and it is formalized in public deed in the presence of a notary. Besides the developer delivers the Building Log Book to the buyer.

Finally, the buyer registers the dwelling in the **Land Registry** to be protected as the owner.

PROCESS DIAGRAM




TECHNICIANS
DEVELOPER / CONTRACTOR
ADMINISTRATION
CONSTRUCTION
FINAL PROCEDURES
Contractor: Registered in the corresponding Registration Body in order to identify its competence
Site Management: Manages and controls the execution of the works Health and safety coordination
Responsible quality control entity: Where appropriate, external control of the building Energy Efficiency Certificate
Responsible quality control laboratory: Performance of trials and tests to materials, systems or services.
Technical control Organism: Supervises building structure
Architect: Construction Completion Document draw up (endorsed)
Site management: Construction Completion Certificate (endorsed)
Installation companies: Installation reports (endorsed)
Supply companies: Inspection of installations and general supply.
Contractor: Drawing up the Health and Safety Plan
Developer, Site management and constructor: Setting-out Act subscription
Contractor and subcontractors: Execution of works
Developer, contractor, site management: Reception Certificate subscription
Developer: Application for First occupancy license to the City Council.
Developer: Delivery to buyer Settlement act, deed sign, keys and Building Log Book handover before notary
Labour authority: Work centre opening
City Council: Finished building inspection and documents supervision

STATUTORY TECHNICAL GUARANTEES

GENERAL INFORMATION

Both national and regional legislation regulate the features to be met by buildings, so that their application guarantees:

Structural Safety

The building has an adequate structural behavior against foreseeable actions and loads to which it can be subjected.

- ✓ Strength and stability will be appropriate so as not to create risks.
- ✓ There should be no unacceptable deformation, vibration or damage which may endanger the building safety.

Fire Safety

The risk for building users to suffer damage caused by an accidental fire source is reduced.

- ✓ Internal and external fire spread risk is limited, both in the building and to other nearby buildings.
- ✓ Appropriate evacuation means are available to enable the occupants either to leave the building or reach a safe area.
- ✓ Adequate equipment and installations are provided in the building to enable detection, control and fire extinguishment, as well as alarm transmission to occupants.
- ✓ The intervention of rescue and fire fighting teams is eased.
- ✓ The building structure keeps the fire resistance during the time needed to evacuate the building.

Safety of Use

The risk for users to suffer damage during the normal use of the building is reduced. The accident causes to be avoided are:

- ✓ Falls.
- ✓ Impact or entrapment within building elements.
- ✓ Trapping in enclosures.
- ✓ Accidents due to inadequate lighting.
- ✓ Accidents due to high occupancy situations.
- ✓ Drowning in pools, reservoirs, wells and similar.
- ✓ Vehicle accidents in car parks and access roads within the building.
- ✓ Accidents resulting from the action of lightning.

Sanitation

It reduces the risk for users within the building, to suffer discomfort or diseases, provides protection against moisture; enables the collection and disposal of waste and ensures an adequate indoor air quality and water supply.

- ✓ Protection against damp: walls and floors in touch with the ground and external elements in contact with outdoor air (facades and roofs) meet certain requirements to avoid the presence of water or damp inside the building and its envelope.
- ✓ Collection and disposal of waste: buildings must have spaces and means for extracting ordinary waste, facilitating proper source detachment of such waste, separate collection and their subsequent management.
- ✓ Indoor air quality: buildings must have an adequate ventilation system that removes contaminants routinely produced in buildings.
- ✓ Water Supply: Buildings have proper means to ensure the suitability of water quality for human consumption.
- ✓ Drainage: Buildings have adequate means to extract foul water and rainwater..

Noise protection

The risk of discomfort or diseases that noise may cause to users is reduced. The building elements have appropriate acoustic features to ensure:

- ✓ Aerial soundproofing between an enclosed space and the exterior.
- ✓ Aerial soundproofing between different enclosures.
- ✓ Aerial soundproofing within a dwelling.
- ✓ Soundproofing to impact noise.
- ✓ In addition, noise and vibration levels which installations may transmit to the dwelling rooms are limited.

Energy Savings

It ensures a rational use of the energy needed in the building, reducing its consumption and providing renewable energy sources.

- ✓ Energy demand limitation: building envelope (facades, roofs, windows, etc.) has specific thermal characteristics that reduce the energy needed to achieve thermal comfort.
- ✓ Thermal installations efficiency: Buildings have heating-cooling systems designed to provide adequate thermal comfort to occupants.
- ✓ Energy efficiency of lighting systems: buildings have appropriate lighting systems to satisfy user needs while being energy efficient.

- ✓ Minimum solar energy contribution to water heating: in buildings, a portion of the thermal energy requirements due to water heating is covered by the incorporation of solar energy systems.

Access and facilities for disabled people

It allows everyone, especially those who permanently or temporary are in a situation of reduced mobility or sensory loss, access and use of the building in an independent and safe way. In order to do this, accessibility conditions for the different parts of the building are defined:

- ✓ Building circulation spaces.
- ✓ Communal use elements.
- ✓ Housing.
- ✓ Parking.

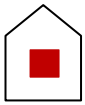
Functionality

Human functions carried out in the different dwelling rooms are facilitated, so that they can accommodate the furniture and necessary equipment in a more comfortable and healthier way.

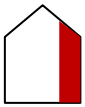
- ✓ Use or suitability to use: arrangement and dimensions of spaces, both in dwellings and buildings, should facilitate the proper performance of the functions to be developed in them.
- ✓ Provision: Buildings and dwellings must have sufficient equipment provision, auxiliary elements and facilities to enable the development of functions and required supplies, as well as having access to telecommunication, audio-visual and information services.
- ✓ Conditions for adequate natural lighting and ventilation of the different spaces are established.

BUILDING ELEMENTS

List of the technical guarantees of quality that the legislation provides in the most relevant aspects of each building element for the users.



EXTERNAL OPENINGS



FACADES

ROOFS

KITCHEN AND LAUNDRY ROOM

BATHROOMS AND TOILETS

INTERNAL WALL FINISHES

SERVICES

EXTERNAL OPENINGS

External openings (windows and doors) are elements located in the building envelope (facade or roof) and which allow ventilation and lighting of rooms naturally.

They consist of framework, glazing and possible protections (shading) and defenses for protection against falls and anti-intrusion security.

STATUTORY GUARANTEES

Both national and regional legislation regulate the features to be met by external openings, their application ensures:

- ✓ **Adequate natural lighting and ventilation:** openings have a certain size according to the area and depth of rooms to light and their location: facing public roads, a block courtyard or light well.

  For example, to light a deep room which faces an internal courtyard, the opening area required is bigger than that of a shallow room facing the street.

  Moreover, legislation also ensures that shading systems are placed in bedrooms. To obtain proper ventilation, openings are openable in at least the third part of the surface planned for lighting.

- ✓ **Energy savings**: the greatest heat loss or gain, depending on the season (winter or summer, respectively), is produced through the openings on the walls. The area of those, together with the insulation characteristics, permeability and sunlight exposure are critical in reducing the energy demand and preventing condensation occurrence.

Therefore, current legislation sets limit values for the following features:

- thermal insulation of the opening, according to orientation, area of the opening and harshness of the climate zone, both in winter and summer;
- permeability of the framework, depending on the harshness of the winter climate zone, being lower in colder areas;
- solar factor of the glass based on the percentage of openings, climate zone and orientation.

- ✓ **Acoustic comfort:** mandatory regulations require diverse acoustic insulation for different facades (including openings), depending on the noise zone in which the building is located in and the type of enclosure to isolate. The insulation requirement will be greater the larger the level of external noise.
- ✓ **Damp protection:** regulation establishes guidelines to prevent leaks from precipitation, such as the proper seal between the framework and the external wall, the provision of flashing, drip edge, etc.
- ✓ **Security**: regulations provide adequate features or material characteristics for users to avoid risks when using openings, such as falls, impact, etc. Some examples are: the placement of handrails, the impact resistance of glazing that will depend on its location and height, visual signaling of large glass surfaces, the correct design so they can be safely cleaned, etc. Law also regulates the safety of openings under the foreseeable actions to which they will be subjected to (wind, snow for roof light, etc.), as well as safety in case of fire.

FACADES

Facades are the part of the building envelope in contact with the outside air, with a slope steeper than 60 ° to the horizontal.

They mainly consist of an outer leaf of facing brick or a cladded one, a thermal insulation and an inner leaf of facing brick or a lined one.

The openings have been developed in the previous section.

STATUTORY GUARANTEES

Tanto la legislación nacional como la autonómica, regulan las características que deben cumplir las fachadas, de modo que su aplicación garantiza:

- ✓ **Thermal comfort:** regulation establishes the necessary features to limit energy demand to achieve thermal comfort in the building and to prevent the appearance of condensation both on the internal side of the surface of the enclosure and on its components.

  Thus, regulations limit the heat flow which goes through the outside walls, solar radiation which enters the building through openings and air permeability of such openings. These limits vary according to the harshness of weather in winter and summer.

  For example, given the same type of facade and thermal insulation (thermal conductivity equal to 0.038 W/mK), the thickness of insulation required in Morella (40 mm) is bigger than what is needed in Valencia (30 mm) as Morella's winters are harder.

- **Acoustic comfort:** mandatory regulations require different acoustic insulation for facades (including openings) depending on the noise zone in which the building is located and the type of enclosure. The insulation requirement will be greater the larger the level of external noise.

For example, in a city like Valencia, depending on traffic intensity, we find avenues with high noise level (> 75 dBA) where the outside walls of bedrooms require a high sound insulation (minimum 55 dBA to solve the blank portion), and other streets with less traffic which noise level is below 60 dBA, where the facades can have a much lower sound insulation (35 dBA).

However, the insulation of an enclosure depends essentially on the area of the openings and the solution chosen for them, influencing to a lesser extent on the facade solution (blank portion)

- **Protection against moisture:** rules specify the conditions of constructive solutions of the facades to prevent the water penetration from rainfall into the building. The impermeability degree that the facade should have varies depending on the rainfall zone and wind exposure.

  For example, in the case of moderate rainfall, cladding solutions with low water absorption should be placed, as well as capillary cutting intermediate barriers consisting of non-hydrophilic insulations, cavity walls, etc..; while in the case of abundant precipitation different solutions must be placed, external watertight cladding, cavity walls with water collection and direct evacuation, etc..

- **Security:** facades have enough strength and stability, depending on whether they are load-bearing facades (as part of the overall structure of the building) or non-load-bearing facades (intended only to support the loads applied directly over it and transmit them to the main structure).

  Besides structural safety, regulations contemplate safety in case of fire in relation with the resistance time of the facade that allows the evacuation of users, response of materials to fire, etc...

ROOFS

Roofs are the upper enclosures of buildings in contact with outside air, with a lower slope than 60 ° to the horizontal.

There are two types of roofs:

- Flat roofs, which slope is usually between 1% and 5%, may be passable or not depending on their composition;
- Pitched roofs, with slopes steeper than 5% and, in general, not passable, except for maintenance

STATUTORY GUARANTEES

Both national and regional legislation, regulate the characteristics to be met by roofs, so that their application ensures:

- ✓ **Protection against moisture**: regulations specify the terms to be met by the constructive solutions of roofs to prevent the water penetration from rainfall into the building and disposal systems to be provided:
  - In the case of flat roofs sufficient gullies must be arranged according to the area of the roof;
  - In the case of pitched roofs, gutters should be arranged with sufficient size and slope depending on the roof area and the rainfall intensity zone.

- ✓ **Thermal comfort:** regulations specify the necessary characteristics to restrict the demand of energy to achieve thermal comfort inside the building and to prevent condensation onset.

  Thus, regulation limits the heat flow through the roof, solar radiation which is introduced in the building through skylights and air permeability of such skylights. These limits vary according to the harshness of the climate in winter and summer.

For example, for the same type of roof and thermal insulation (extruded polystyrene conductivity 0.039 W / mK), the thickness of the insulation required in Morella (60 mm) is greater than that needed in Valencia (40 mm) as Morella has severer winters.

- ✓ **Acoustic comfort**: roofs features are appropriate to ensure acoustic welfare in resting rooms and living rooms. Depending on the level of the external noise, the roof has enough sound insulation against airborne noise, and it will be greater the larger the level of external noise.

- ✓ **Safety:** Roofs have enough strength, stability and suitability to use against foreseeable actions to which they will be subjected to:

  - Dead loads and live loads, that will depend on the roof use: passable for pedestrians and vehicles, or passable only for maintenance, etc.;
  - wind loads, depending on the building exposure, shape of the roof, etc.;
  - snow loads, according to local climate, etc..

Besides structural safety, regulation also includes safety in case of fire in relation to the fire resistance time of the roof, materials response to fire, etc.

KITCHEN AND LAUNDRY ROOM

By **kitchen** it is meant the space in which foods are prepared, stored and preserved, and where cleaning of the utensils used is performed.

By **laundry room** it is meant the space for cleaning things, which allows cleaning, drying and maintenance of clothing, as well as appliances and elements contained in the habitable space. It is usually placed in the kitchen or in a room attached to it, but it can also be located in the bathroom or toilet.

In addition, the house must have a space set for **drying clothes**.

STATUTORY GUARANTEES

Both national and regional legislation, regulate the characteristics to be met by the kitchen and the laundry room of a dwelling, so their application ensures:

- ✓ **Functionality** requirements: all dwellings have a kitchen that meets a minimum area and dimensions, which may vary depending on whether it is a separate enclosure or it is placed in an enclosure on which other functions are performed (living, dining, etc.).

  The laundry room has the necessary area for the placement and use of the required appliances.

  Likewise, for open air laundry drying an external space within the house has to be provided, either facing the exterior or interior facade of the building or located on communal outdoor spaces and always with protected views from public roads.

- ✓ **Natural lighting**: kitchen has guaranteed adequate natural lighting in the event that it is configured as a separate enclosure. It is done through glazed openings facing outside, which will have a certain size in relation to the floor area of the whole lightened enclosure.

- ✓ **Equipment**: both the kitchen and the laundry have a minimum equipment.

  In the kitchen:
  - o sink with cold and hot water and draining system with a water seal;
  - o dishwasher machine space with cold water intake, also hot water if appropriate, drain and a power point;
  - o space for cooker, oven and refrigerator with power points or sockets;
  - o minimum space area of 2.50 m for the work surface;

- storage space for organic waste and lightweight packaging (these spaces can also be placed in auxiliary annexed areas);
- surface finishes: kitchen should be cladded with a washable and waterproof material to a minimum height of 2.00 m. The coating in the cooking area will also be fireproof.

In the laundry room:

- space for washing machine with cold water intake ,also hot water if appropriate, drain and a power point;
- surface finishes: covered with a washable and waterproof material to a minimum height of 2.00 m.

- ✓ **Power supply:** there are several specific electrical circuits for the kitchen, designed to supply necessary power points for its equipment. These are 25A sockets for cooker and oven; 16A sockets for the extractor hood, refrigerator, washing machine, tumble dryer, dishwasher, electric water heater and a minimum of 3 points for the work surface. The number of light spots varies depending on the area of the room.
- ✓ **Indoor air quality**: kitchens have adequate natural ventilation guaranteed through an outside window or external openable door. Besides, in order to have proper air ventilation for the dwelling, openings to extract foul air are located in the kitchen.

  Furthermore, kitchens have a mechanical extraction system for the cooking vapours and contaminants. It is connected to an exhaust duct independent of the general ventilation of the dwelling.

- ✓ **Water Supply and Drainage**: mandatory legislation sets out the requirements relating to the supply, quality of water and wastewater disposal.
- ✓ **Safety in relation to impact**: in glass doors, risk impact areas consist of safety glass, which can withstand the impacts without breakage or if it breaks it does it in a safe manner.
- ✓ **Sound insulation**: in order to restrict the risk of discomfort that noise may cause to users, internal walls of the house meet a minimum overall sound reduction index. Noise levels and vibrations transmitted by installations are also limited.

BATHROOMS AND TOILETS

Bathrooms and toilets are housing rooms for personal hygiene. By **bathroom** it is meant the room provided with at least a toilet, basin and shower or bath. A room only with toilet and basin, is called a **toilet.**

STATUTORY GUARANTEES

Both national and regional legislation, regulate the characteristics to be complied in bathrooms and toilets in a dwelling, so their application ensures:

- ✓ **Functionality terms**: all dwellings have a bathroom; dwellings of three bedrooms and over should also have a toilet. Bathrooms and toilets have a minimum area and are sized in relation to the number of sanitary fittings, considering their dimensions and its area of use needed.

- ✓ **Equipment**: Bathrooms and toilets have a minimum equipment:
  - o bathroom: wash basin, shower or bath with cold and hot water supply, water closet with cold water supply, all of them with water seal drain;
  - o toilet: a water closet and a wash basin, under the same conditions stated above;
  - o surface finishes: in both cases, walls must be covered with a washable and waterproof material to a minimum height of 2.00 m.

- ✓ **Power supply:** there is a separate electrical circuit intended for internal distribution in bathrooms and kitchens. Bathrooms will have at least one light spot, a 16A socket and a heating outlet. For **electrical safety**, regulations provide different protection volumes around the bath and shower in which installing certain cables, devices and other mechanisms is forbidden.

- ✓ **Indoor air quality:** to properly ventilate a dwelling, bathrooms should have vents connected to exhaust ducts to extract foul air.

- ✓ **Water supply and Drainage**: mandatory legislation sets out requirements regarding supply and quality of water and sewage disposal.
- ✓ **Safety in relation to impact**: glazed parts of the shower and bath enclosure are made of safety glass, laminated or toughened elements which withstand impacts without breaking in a hazardous way.
- ✓ **Protection against entrapment**: if the door of the bathroom or shower room has a lock device (lock, bolt, etc.), it must have a release system from the outside.
- ✓ **Sound insulation**: to limit the risk of discomfort that noise generated in bathrooms and toilets may cause to users, partitions of these rooms meet a minimum overall sound reduction index. Noise levels and vibrations transmitted by installations are also limited.

INTERNAL WALL FINISHES

Internal wall finishes are the surface lining of horizontal or vertical partitions of the building.

Thus, they can cover:

- ✓ vertical surfaces
- ✓ floors and stairs
- ✓ ceilings.

STATUTORY GUARANTEES

Both national and regional legislation regulate the characteristics to be met by internal finishes, so their application ensures:

- ✓ **Sanitation:** to avoid risk of building deterioration and inconvenience to users, the finishing material is selected according to the type of room. Conditions to prevent condensation are also guaranteed.

  Thus, walls and floors finishes are washable and waterproof materials in the following spaces:

  - wet areas (kitchen, laundry, bathroom and toilet) up to a minimum height;
  - any element close to the area for waste storing in the dwelling;
  - waste store for regular waste containers, if applicable;
  - Charging station for storage of waste, if the building has a pneumatic system for waste disposal (in this case, the floor finish will be nonslip).

  In addition, legislation ensures condensation restriction of internal water vapour in partitions surfaces, thus avoiding both mildew formation and degradation of inner finishing.

- ✓ **Energy savings**: in the communal areas of the building (hallway, staircase, landings, etc..), lighting solution is designed according to the color of the internal finishes, thus, light colors have more light reflection, which helps to improve the energy efficiency of the lighting system.

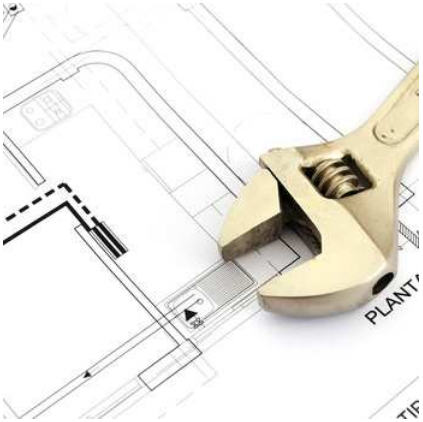
- ✓ **Acoustic comfort**: the characteristics of the inner finishes guarantee acoustic welfare in rooms and restrict the sound reverberation in large spaces with little furniture:
  - to improve sound insulation of slabs, elements such as floating floors or suspended ceilings can be placed;
  - to reduce reverberation, finishes must have sufficient acoustic absorption which is characteristic of porous materials or perforated finishes.

- ✓ **Safety in case of fire:** finishes materials satisfy certain requirements to restrict the spread of fire inside the building:
  - in communal areas of the building not protected with fire resistant elements, inner linings of ceilings, walls and floors meet certain conditions related to reaction to fire;
  - in dwellings, finishes in the cooking area of the kitchen are fireproof.

SERVICES

Residential buildings have the adequate installations and fittings for the provision of the necessary services:

The following building and dwelling **installations** are referred in the present document:



- ✓ **Electrical**: is the set of devices and circuits for the supply and distribution of electrical energy, including automation systems and technical management of energy and safety.
- ✓ **Water supply**: designed to provide the water demand for human consumption; it is composed of water main, distribution pipes and a private part for housing and other premises.
- ✓ **Drainage system**: is the system for foul water and rainwater disposal; it is composed of the general drainage network (downpipes, sewer, etc.) and individual branches for housing or other premises.
- ✓ **Heating systems**: include the fixed thermal conditioning systems (heating and cooling) and hot water production.
- ✓ **Gas and liquid fuels supply**: is the installation for the supply of gas and liquid fuels from pipelines or storage tanks to the final equipment for heating, cooling, cooking and hot water production.
- ✓ **Ventilation system**: ensures air quality and air renewal of indoor rooms through fresh outdoor air inlet and foul indoor air outlet.
- ✓ **Storage and waste disposal**: storing and transferring system for ordinary waste generated in the buildings. The building can have a container storage, with downspouts where applicable, and charging station for storage of waste if it has a pneumatic collection system.

- ✓ **Fire safety**: set of integrated equipment in buildings to protect them from fire.
- ✓ **Lightning protection**: building protection system against the effects of lightning; consists of an external and an internal system and an earth connection (to disperse the lightning current).
- ✓ **Vertical transportation** (**lift**): comprises lift equipment to be used by occupants. It is permanently installed and connects the different levels of the building.
- ✓ **Audio-visual systems**: includes the common telecommunications infrastructure (ICT), and if appropriate, entry-phone or video intercom systems, surveillance systems through closed circuit television (CCTV), public address systems and digital home infrastructures.
- ✓ **Security systems**: centralized or decentralized systems able to collect information from different inputs (sensors or controls), to process it and to emit orders to other devices to protect people, animals and properties

STATUTORY GUARANTEES

Both national and regional legislation, regulate the characteristics to be met by installations, so that their application ensures:

- ✓ **Power supply**: mandatory regulations set out the conditions to be met by electrical systems of buildings to ensure its operation and preserve the safety of persons and properties.

  Electrical installation of the building includes that corresponding to houses and premises for commercial use, as well as communal areas (hallway, staircase, lift, etc.) and garage, if appropriate.
  All dwellings have an internal network for lighting and domestic purposes. The degree of electrification of the housing installation can be low or high, depending on the installed capacity

For low electrification, the dwelling has the following circuits, designed to supply power points and light spots:

- light circuit;
- general use power point circuit and refrigerator;
- cooker and oven circuit;
- washing machine, dishwasher and electric boiler circuit;
- power point circuit for bathrooms and auxiliary points in kitchen.

High electrification is used in dwellings expected to have numerous electrical appliances, as well as electric heating systems, air conditioning, automation, technical management of energy and safety or dwelling floor areas exceeding 160 m^2.

Legislation also regulates the type and minimum amount of light spots and sockets in each room, as well as the protection devices requiredm^2.

✓ **Water supply and drainage:** mandatory legislation determines the conditions for the supply and quality of water for human consumption, and those relating to the disposal of foul and rainwater.

All dwellings have at least the following equipment:

- in the kitchen: a sink with cold and hot water supply with water seal, space for the dishwasher with hot and cold water supply and drain;
- in the laundry room: a space for the washing machine with cold and hot water supply and drain;
- in the bathroom: a basin and a shower tray or bath with cold and hot water and a toilet with cold water supply, all of them with water seal drain.

The legislation regulates the design and sizing of installations, to provide sufficient water flow to each equipment and to evacuate the foul and rainwater safely.

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- ✓ **Domestic Hot Water (DHW) production and thermal comfort**: all buildings have solar installations to ensure DHW production. As an alternative, in some cases legislation accepts other systems which produce equivalent energy savings. In addition, buildings can have conditioning systems to provide thermal comfort to occupants (heating and/or cooling). Conditions to be met by thermal systems are regulated by mandatory regulations.

- ✓ **Gas and liquid fuels supply**: mandatory regulations set the conditions relating to the gas and liquid fuels supply system to be met both in the execution of the installation and during its maintenance by the owner or user.

  The connection of gas appliances to the supply installation and its start-up must be carried out by authorized agents.

- ✓ **Indoor air quality**: mandatory legislation regulates the conditions required for indoor spaces of dwellings, waste storage, storage rooms, garages and building's premises ventilation.

  All dwellings have a general ventilation system that can be either hybrid or mechanical. Air must flow from dry to wet rooms. To achieve this, dining rooms, bedrooms and living rooms have inlet openings; kitchens and bathrooms or toilets have outlet openings. Partitions located between the inlet rooms and the outlet rooms are provided with ventilation openings. In addition, kitchens have an additional specific ventilation system with mechanical extraction for smokes and pollutants from cooking.

  Waste storage rooms are provided with a ventilation system that can be natural, hybrid or mechanical. Parking and garages are also provided with a ventilation system that can be either natural or mechanical.

  Other premises in which any human activity is carried out have a ventilation system that provides sufficient flow of fresh air to prevent the formation of high concentrations of contaminants.

- ✓ **Waste collection**: mandatory regulation establishes conditions for collection of ordinary waste generated in residential buildings.

  In dwellings, spaces are provided to store each of the five fractions of ordinary waste generated in the house: lightweight packaging, organic matter, paper and cardboard, glass and others (ash, leather, rubber, etc.).

  

  The building has at least:

  - a containers storage room for building waste fractions that are collected door to door (the municipal waste collection service removes the fractions from the building);
  - for those fractions with centralized collection containers on the street, a reserve space in which to build a containers storage when any of the fractions happens to have door to door collection has to be provided.

- ✓ **Fire Safety**: mandatory regulations determine the fire protection equipment and installations to be provided in residential buildings, depending on their height and other features, to enable fire detection, control and extinguishment and, if necessary, alarm activation to warn occupants.

- ✓ **Lightning protection**: regulations establish which conditions have to be met so that the installation of a lightning protection system is compulsory. They also establish the type of installation required, depending on the risk that residential buildings have according to their location and construction features.

- ✓ **Accessibility**: all buildings which exceed a certain height or number of dwellings must be provided with a lift and, and even if its installation is not compulsory, a space has to be reserved for future installation.

- ✓ **Access to telecommunication, audiovisual and information services**: all types of dwellings should have access to these services. The mandatory regulation establishes conditions for common telecommunications infrastructure in all buildings subjected to the condominium property. Also, dwellings can incorporate the functionalities of digital home.

- ✓ **Security against theft**: to be protected against possible intrusions, dwellings and buildings can also incorporate security systems that will comply with the conditions regulated by mandatory rules, both for installation and maintenance. Specific regulation also exists for companies which provide security services.

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