



## **The structural survey.**

A structural survey is a document frequently used in court actions, when invested monies or reparations are reclaimed or the reinstatement of the previous state of a building is required.

It is also used as an instrument in real estate purchase operations, in order to know the real state of a property, fix an offer, the market price or negotiate the final price.

If the report is used actively in one of these cases, the surveyor has the duty to take part in the process, attending court where necessary to explain the report and to answer questions or take part in the negotiation of the purchase.

The basic content of a structural survey begins with the description of the larger and the closer environment. The city, the town and the neighborhood, to define which elements can influence the property analyzed. The next chapter describes in writing the building itself, layout, rooms and spaces and supported by plans. In this part the habitation conditions according to the law can be mentioned to be able to compare the description in the deeds with reality. The following section is the structural composition of the building, concrete skeleton or structural walls to identify any defects which may affect the building's stability. In the case of multiple family unit properties this is the moment to describe the communal elements. The next section is the description of the building materials used, such as tiling, flooring, wall coverings, doors and windows, checking the state of maintenance and the building's energy efficiency. In this part of the survey the utility installations must be detailed such as water, electricity, sewage, heating, air conditioning installations, including checking whether they are in working order and installed in accordance to current regulations.

In cases of defects and damages, the cost of repair can be included. To finalize it is important to analyse and describe the local area in which the building is situated, including the plot, the neighbourhood and also referencing any specific local authority planning laws which may affect the property.

The sections detailed in a structural survey should be as comprehensive, short and concise as possible.

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The most typical types of defects found in buildings are related to damp, for example: of walls and floors being in direct contact with the ground soil without suitable damp-proofing; waterproof layers in roofs and terraces in bad state of maintenance or being inadequately repaired; leaking drain pipes, and non-waterproofed joints.

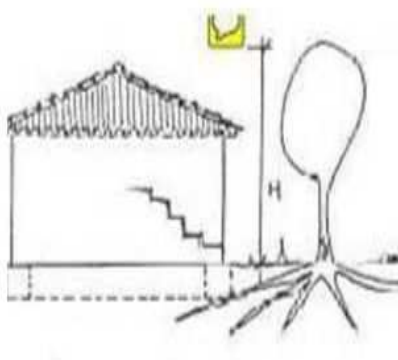
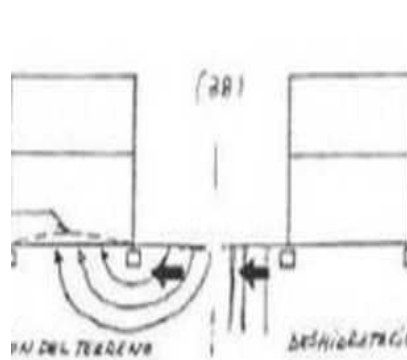
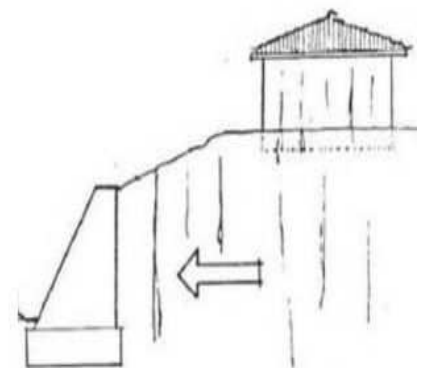
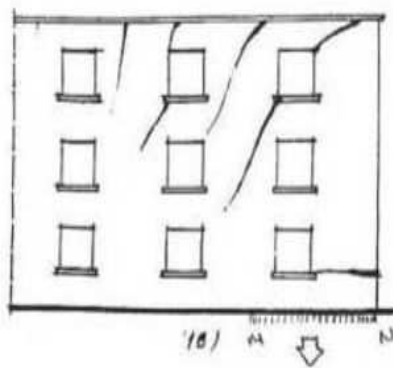


The next most common defects found are superficial and structural cracks. Superficial cracking is a defect in a non-structural element, such as false ceiling plastering, wall plastering or decorative moulding, in which case they are easy to repair. Structural cracks however, are those which affect the structural elements and walls of the building.

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In order to understand the origin of any cracks the structural make-up of the building must first be understood, for example, a frame composed by two pillars connected at the bottom by a strip foundation and at the top by a beam. This frame can be either empty or filled by walls and/or windows. It would be in a stable state when the forces produced by the building plus any additional weight is equal to the opposing ground forces.

This stability can be broken at any time. Ground movements, changes in ground water levels causing ground expansion during wet periods and retraction during dry periods, the presence of roots may produce subsidence in the structure in specific points or generally. The usual manifestations are horizontal cracks in pillars or in structural walls, or "stair case" cracks following the joint between blocks. Flat roofs exposed to the sun expand during the day and retract over the night. Without a proper expansion joint, the expansion will produce horizontal cracks in built railings or in structural walls.





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