

## The importance of implementing a law to guarantee building inspections

Over the years, there **have been many national news reports warning about various building accidents**, some of which resulted in fatal victims and others which did not, but these problems always have something in common, they cause enormous damage to their residents.

All systems and elements of a building require maintenance activities throughout their useful life, so that their safety, reliability and performance conditions for which they were created can be guaranteed.

Problems may already occur on the drawing board with small errors in its design, or during the execution of the work caused by numerous reasons or they may occur post-work which is caused by lack or failures in the maintenance plan; by misuse; among other possibilities.

In this way, it is understood that building inspection is an essential instrument for any detection, monitoring and correction of problems, which as the building ages, they begin to appear more frequently.

With the inspection, in addition to the building being better protected, the costs used for maintenance will be reduced, as the costs of preventive maintenance are much lower than those for corrective maintenance, which is directly related to the lack of a maintenance plan.

We can highlight:

- The discovery of pathologies in their early stages means that the cost of repairing them is lower.
- The creation of a law makes the public and even the private sector prioritize maintenance

As shown in the illustration (SENGE RJ, 2014), the biggest causes of building accidents are due to lack of maintenance and use.



Figure 1: Incidence of accidents in buildings, by type of origin

Source: SENGE RJ (2014)

**Therefore**, according to Cosenza (2014), in order to eliminate the possibility **of a collapse and possible deterioration of the building, it is necessary to implement an efficient maintenance plan, in addition to carrying out periodic inspection** to know the real conditions in which the building is located.

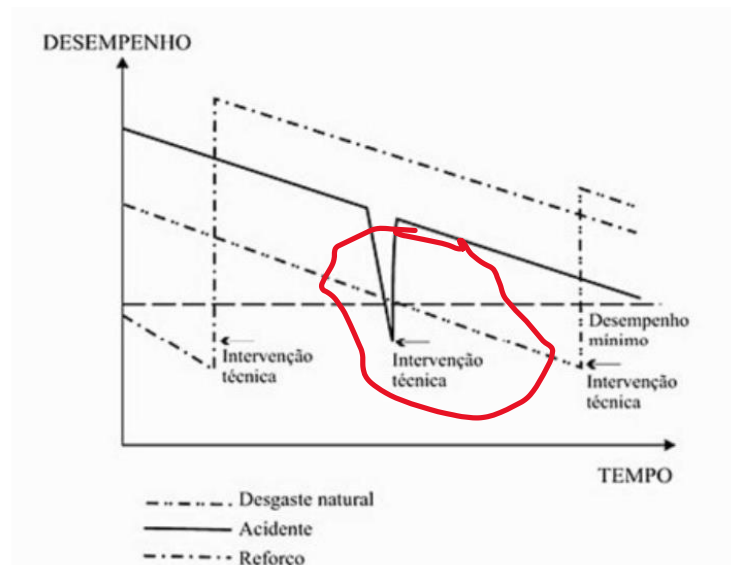


Figure 2: Incidence of accidents in buildings, by type of origin

Source: Ripper and Souza (2001).

For a better understanding of the subject, it is necessary to talk about performance, which in 2013 gained greater prominence with the launch of **NBR 15575 – “Performance Standard”**, which until then is the main normative document focused on the performance of residential buildings.

Standard 15575 defines a pathological manifestation as an irregularity that appears in any part of the building. According to Silva and Jonov (2009), construction pathology is the branch of engineering that studies all the reasons and causes (symptoms, causes, origin and consequence) that gave rise to deficiencies throughout construction.

ABNT NBR 5674 defines maintenance as a set of organized procedures that help in conserving or recovering the functional capacity of the building, always aiming to meet safety needs. **In short, maintenance can**

be the intervention in systems and elements that have faults in buildings.

Figure 3 shows some accidents caused by lack of maintenance throughout the country.

Ano	Obra	Estado	Cidade	Provável origem do problema	Vítimas fatais
1995	Edifício Atlântico	PR	Guaratuba	Falha na execução de estrutura	28
1997	Edifício Itália	SP	São José do Rio Preto	Falhas de projeto	0
1998	Edifício Palace II	RJ	Rio de Janeiro	Falha de projeto	9
1999	Edifícios Éricka e Enseada de Serrambi	PE	Oinda	Falhas de projeto	4
2004	Areia Branca	PE	Recife	Falha na execução da obra	4
2006	Marquise da UEL	PR	Londrina	Falhas no projeto	2
2006	Obra na UERJ	RJ	Rio de Janeiro	Desconhecidas	0
2007	Obra do metrô de SP	SP	São Paulo	Falha de gerenciamento: projeto + medidas de recalque	7
2008	Complexo esportivo	RS	Novo Hamburgo	Falha de projeto	3
2008	Edifício Dom Gerônimo	PR	Maringá	Falha estrutural de uma sacada que desabou e levou as inferiores em efeito dominó	0
2009	Edifício Santa Fé	RS	Capão da Canoa	Falhas de execução	4
2009	Igreja Renascer	SP	São Paulo	Falha de projeto	7
2010	Prédio antigo	RJ	Rio de Janeiro	Falha de manutenção	4
2011	Prédio de pequeno porte	RJ	Nova Friburgo	Desconhecidas	3
2011	Prédio – Real Class	PA	Belém	Desconhecidas	3

Source: Saldanha (2013)

To better understand what maintenance is, tools are used that will vary according to each case, for example:

- **Expert:** Investigation of the causes of a given event.
- **Appraisal, Report:** A piece in which a qualified professional reports what he observed and his conclusion on the matter;
- **Consulting:** Technical prescription regarding a specific fact. subject
- **Overhaul:** Verification of a fact, which uses detailed examinations of the elements that constitute it.
- **Inspection:** Technical analysis of fact, analyzing techniques, use and maintenance in order to know the real situation of the study