# How subsidence problems influence your finances

A commercial guide

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# Overview

Urbanization is an ongoing megatrend that means people and businesses are moving increasingly to more densely populated areas, i.e. towns and cities. In terms of construction and geotechnics, it means that the suitable areas for construction become more valuable, since the demand increases and, typically, the best grounds are already built on.

This means that some business operations (such as logistic centres) are typically placed outside of the cities to less valuable areas, since the footprint required is relatively large.

Unfortunately, sometimes the ground conditions under buildings generate problems during building life cycles. That leads to a situation in which the building doesn't receive the support from the bearing ground as originally engineered.

Whatever the reason for the problem, the consequences are very often first realised as visual problems, such as cracks on the floors and walls, as well as slightly tilting structures. Over time the problem develops and is only reacted to when daily operations in the building become influenced by it.

## How can subsidence affect operations?

As an operator in the facility, let's take a logistics centre as an example, the problems might be realised as sinking floors. It may actually affect daily operations through tilting racks and unfunctional automatic warehouse systems. Even worse, a sinking concrete slab might cause a safety issue with falling loads or tilting forklifts.

As a business operator, it is quite easy to turn the problem into numbers; How much does it cost to lose the operation of an automatic warehouse which normally operates 24/7? Or how much does it cost to keep a logistics area closed due to a safety risk? And how can the challenge be overcome?

Let's take it one step further to real estate owners. When the tenant cannot run their operations, they need to get the problem fixed with minimal disruption to other operations or relocate the activities which typically means a break in operations and lost revenue.

Consequently, the rental revenues / cash flow for the real estate owners will decrease as loss compensations or, in the worst case, lost completely if the tenant moves out. Not to forget the reduced value of the building, since it has an ongoing subsidence problem and has lost the ability to host certain types of operations. All in all the investment value declines significantly.

## What can be done?

Looking from an operator's and property owner's perspective, the problem should be tackled before it develops into a problem.

Noticing early marks of subsidence is crucial, since acting before the problem has a real impact on business operations is the cheapest solution.

## What is this “Total cost” then?

Once activities cannot be performed as intended, the price tag of repairs due to lost production multiplies. Our experience is that the actual renovation cost can be less than 10%, compared to the value of lost production, in an example from a factory with sinking floors. In large manufacturing facilities, it is possible that the indirect cost of subsidence, in terms of lost production, can exceed 10 million €.

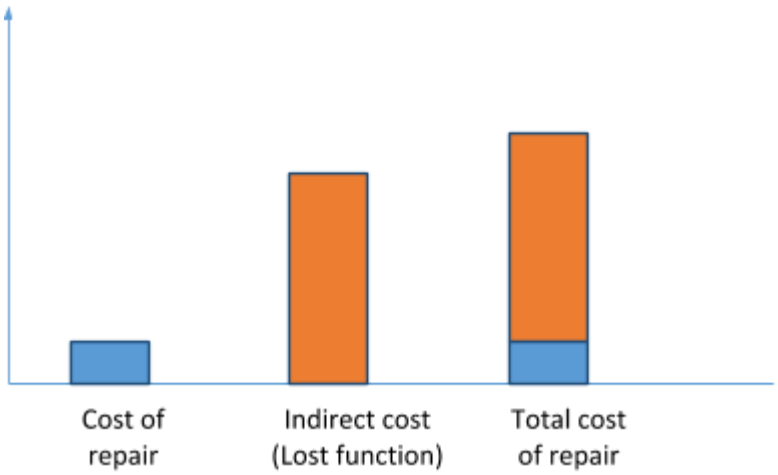



*Figure 1 . Total cost of repair with traditional methods*

Traditionally, subsidence problems have been fixed with numerous methods, such as piling, jet grouting and re-casting the floors. With each method, the influence has been that the facilities have been out of use for a long period of time. This time again causes indirect costs for operators and owners.

## So what is an Innovative alternative solution to traditional methods?

Geobear has developed a method where subsidence problems are fixed with polymer injections with a fast reaction time. That means any sunken structures can be lifted and stabilized with minimal time and disruption to ongoing operations in the facilities.

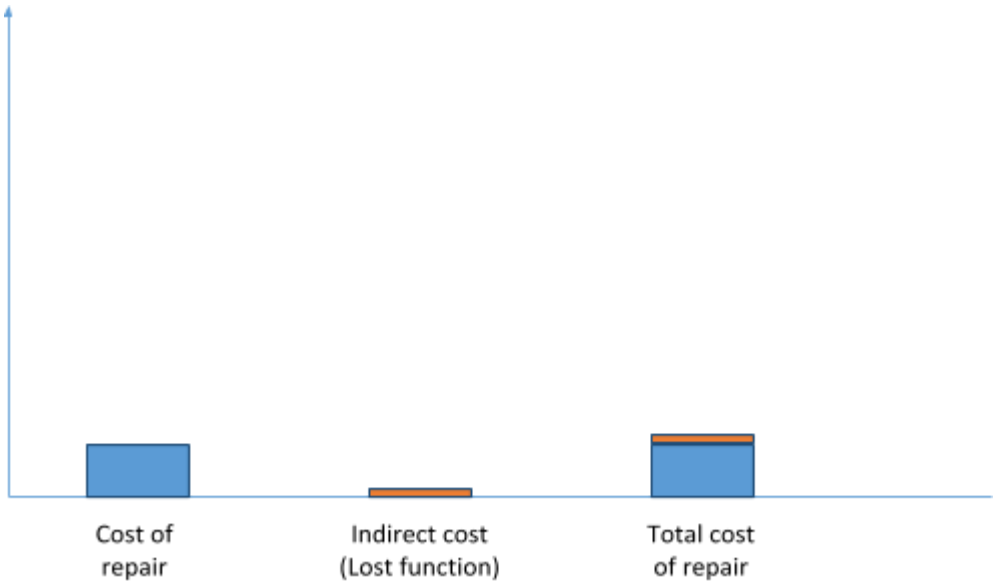



*Figure 2.Total cost of repair with geopolymer injections*

Compared to alternatives, the works are completed in a limited area at a time and since the reactions are immediate, the property is ready for operation directly after the final injections.

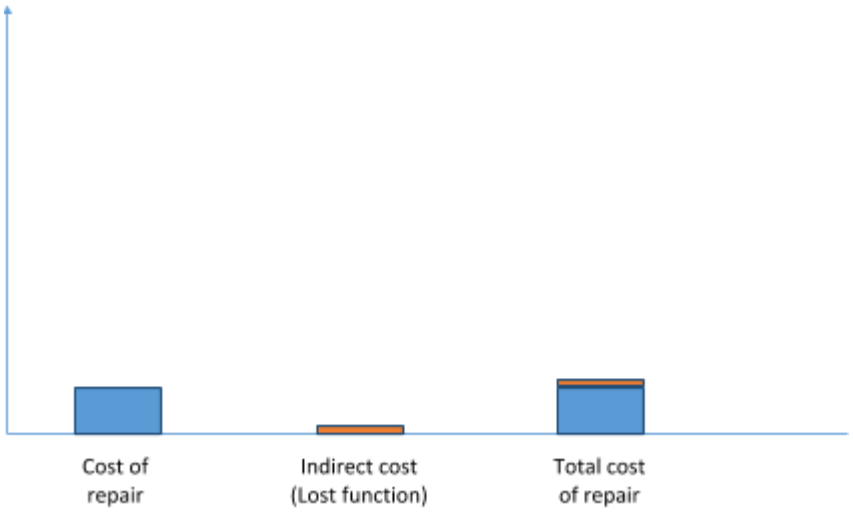
When fixing subsidence with the Geobear method, the operator can continue working as usual and real estate owner does not feel any pressure to their income.

## Comparison of costs

Having a look at the comparison of total costs raises an interesting point: Should such a problem only be dealt through facility maintenance and repair?

The graph clearly indicates a real business problem where the selection of a suitable method can save the cost of the project many times.

The benefit clearly goes to one who can continue their operations without disturbance. Having a look on budgets on such repairs, it is worthwhile to have a second look at the total cost.



## Could Geobear help you?

If you suspect any subsidence issues in your facilities, contact one of our experts for an inspection and further discussion.

We believe that our solutions are saving costs – massively more than budgeted repairs.

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