

# The collapse of the Cologne state archive building could have been prevented

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Three weeks after the collapse of the Cologne state archive building, which cost the lives of two people, the causes of the March 3 disaster have still not been fully clarified. The two young male victims, an apprentice baker and a design student, were apparently asleep in one of the neighbouring houses when the building collapsed. The body of 17-year-old Kevin K. was the first to be discovered during the night of March 8, and four days later, they uncovered the remains of 24-year-old Khalil G.

It is becoming clearer and clearer that the collapse was in no way an unforeseeable "accident." Several warnings had already been issued, but they were ignored by the relevant authorities and by the construction firms involved because they conflicted with the profit interests of extending the underground tunnel to develop the town.

While Cologne's political "caucuses," notorious for their sloppiness and nepotism, are partly responsible for the loss of lives and unique historical treasures, the consequences of years of deregulation, privatisation and cost-cutting measures and the associated incompetence resulting from the pressure to cut costs and make profits were also significant factors.

The question of culpability has been shifting over the last weeks, with the construction managers, the Cologne Transport Authority (KVB), the City Council and the construction companies all facing blame. State prosecutors have issued an interim charge against "unknown persons" for industrial negligence and manslaughter.

As the *Süddeutsche Zeitung* reported March 18, the KVB was totally overstretched by the gigantic building project. They evidently had neither the necessary "know-how" nor appropriately trained specialists to make the required verification of the contracts with the private construction companies. According to the former head of Cologne's Construction Department, they therefore had to leave all the planning to the contracted firms.

In his June 2008 academic paper on the topic of "restructuring and cost-cutting pressures versus safety and accessibility," the engineer Peter Jacobs documented how decisions in this area were influenced by party-political goals. The technical competence of the decision-makers, mostly lawyers or business people, was—especially at the board member or company director level—"often just non-existent." As a result, "cost-cutting targets" played the leading role, with precise technical understanding taking a back seat.

Up until 2002, the city rail-transport and bridges authority in Cologne, famous for its competence, was responsible for underground transport tunnel construction. Experienced specialists were in charge of everything from ground surveys to project design and development, from supervising bids by contractors to construction work inspections, supervision and structural maintenance.

To save costs, the City Council decided to "downsize" the rail-transport authority, and transferred the underground transport works to the KVB. The prescribed EU bidding procedure for public services, according to which the "most economical offer" must be accepted, has almost certainly

played its part here, in that safety standards were not prioritised.

Once thing is now certain: the accident could have been avoided if those responsible, whoever they are, had reacted in a timely and appropriate manner to the first danger signs. Similar problems with underground tunnel construction had already surfaced during similar building projects in Amsterdam, where work was immediately halted. And the same problems also occurred during the recent underground tunnel project in Leipzig, where the required safety measures were indeed implemented.

## Hydraulic ground seepage

In the meantime, the most probable cause of the building collapse is seen as being ground seepage during the tunneling, through which ground water and huge masses of subterranean mud spilled into the underground shaft, undermining the foundations of the state archive and adjoining buildings.

Ground water problems have arisen again and again during the underground tunnel construction project. On March 21, information was released that as early as last September 8 there had been a so-called "hydraulic ground seepage" in the 28-metre-deep excavation shaft right under the state archive building, flooding the shaft with ground water.

This information was found in previously unpublished minutes taken at a consultation meeting of construction managers from last February.

These minutes are being withheld, including from the City Council and Cologne's mayor. For Mayor Fritz Schramma and his administration, this has been seized upon as an opportunity to shift the responsibility from themselves and to dish up ever-new versions of culpability designed to leave themselves personally blameless.

Meanwhile, Schramma has initiated disciplinary proceedings against the head of the Construction Department, Bernd Streitberger, maintaining that the latter had the information in the minutes about the ground seepage eight days before the mayor, but had failed to inform him.

Although such incidents during underground construction are normally regarded as "worst-case scenarios," the event was played down by the participating engineering firms and construction managers at the municipal transport authority. They just worked out the additional costs of building extra water-courses.

Cologne's head of environmental management, Marlies Bredehorst (Green Party), has stated that offences against legal water regulations were made. Specifically, the construction firms built 15 extraction wells instead of the permitted maximum of four and also pumped four times as much water as allowed. Given that the subsoil in Cologne consists of Rhine river pebbles, quicksand and thousands of years of old building rubble, which are notoriously problematic, these actions were at the very least careless, if not criminally negligent.

On September 30, a report from the Aachen University Geotechnical Department reached a disturbing conclusion. It warned that the "usual method of calculation" had given results "biased towards the unsafe range, meaning that the thickness of the diaphragm walls supporting the shafts were correspondingly much too thin. "This could cause a situation that would not only damage business interests, but, in certain circumstances, also endanger human lives," stated the report. Up to now, the KVB management has remained silent over whether and to what extent, this report influenced construction operations.

In the minutes of the meetings of managers of the Waidmarkt construction site on February 3 and 17, and from the day of the disaster, March 3, the following appeared under the item heading "3.2 project schedule": "according to the Arge Süd (the consortium), there is expected to be a further delay of project completion by an estimated 4-6 weeks, due to hydraulic ground seepage."

The construction site meeting included, amongst others, KVB personnel, members of the building consortium (Arge Los Süd) and a representative from the City Council's Surveyors Department.

Furthermore, in the minutes of a February 17 meeting it is recorded that "once again a large amount of water" had seeped into the shaft "through two diaphragm walls." That means that the problem was in no way dealt with as the construction continued.

## **Cracks and subsidence**

Destabilisation from the underground construction had caused the tower of the St. John the Baptist Church near the archive to lean 77 centimetres in October 2004. The effects were 15 times worse than had been estimated by the underground work planning team. Further cracks and subsidence damaged the tower of the Cologne Town Hall and the St. Maria City Church as well as private houses along the route of the new underground tunnel works.

In December 2008, during an inspection of the historic municipal archives, a specialist assessor for load-bearing frames confirmed that he had discovered eight so-called "settlement cracks" in the ceilings and walls of the building, but this information was nevertheless ranked as being within "statistically acceptable" parameters. Despite this, the assessor issued the following warning: "in order to establish the precise reasons for the various settlement anomalies, I recommend that you hire the services of publicly recognised experts." It is abundantly clear that this advice was not followed.

Further building subsidence was established during a survey in February. The survey found that the buildings had subsided on one day by 7 millimetres, a figure that is regarded by experts as extremely critical, given the especially problematic nature of the subsoil. Compared with the so-called "Zero-measurement" that was made at the start of construction operations, the buildings had therefore subsided in their fronts by 20 millimetres, and behind by 17 millimetres.

## **Criticism of the underground tunnel project**

Critics of the underground tunnel project regard the entire operation as unnecessary, because an alternative public transport solution for the north-south connections was possible. For example, there is already another overground rail route along the banks of the Rhine, running from Bonn to the central railway station in Cologne. But, after this railway line was

closed down a short time ago, the grounds are now used as a parking place for buses.

The underground tunnel project is supposed to improve transport connections between south Cologne and the central cathedral, according to SPD/CDU-fraction spokespersons in the City Council and the Kölner Verkehrsbetriebe AG (AG means "plc"—the KVB has been privatised and is now a public limited company). The council decided in 1992 to launch this extremely costly and dangerous underground tunnel project, from which a large number of private firms are lining their pockets at the expense of local taxpayers.

The underlying reason for the project is to facilitate further commercial development projects. The new underground tunnel ends up in an area between Südstadt and Raderberg, where there are at present hardly any residential complexes. Since 1939, the area has been the site of the Cologne market, which will now be removed to make way for urban development. The new underground railway link is intended to optimise the commercial viability of this plan. The very same firms that stand to make profits from this development have already licked the cream off previous major urban development projects in Cologne. Chief among them is the big private bank Esch-Oppenheim-Fond, which is also involved in the scandal-generating redevelopment of the Cologne Exhibition Centre.

Just how much further the costs of the new underground railway project will rise is unpredictable. The initial cost-estimation of €500 million has already risen to at least €1.3 billion.

Many small businesses along the construction route have already suffered heavy losses, while residents are very worried about their houses and flats. They fear that they could lose everything they have, just like those who lived in the buildings that already collapsed.

A satirical Internet posting on the crisis carries a picture of Cologne after it was bombed (probably dating from 1945) with the title "Cologne in the next two years" and the subtitle, "The underground railway has been completed."

## **Negligent destruction of the Cologne State Archive due to cost-cutting policies**

Although the local police headquarters building and the St. John the Baptist Church, whose tower has already experienced massive subsidence, were listed as being at risk from the underground project, it is truly astounding that the Cologne State Archive, with its irreplaceable historical treasures, was omitted from this list.

The State Archive had already suffered for many years from the cost-cutting policies of the City Council. Millions of euros of taxpayers' money were generously released for all sorts of private projects, some of them generating bribery scandals, but projects of real importance for the public good were again and again postponed or totally cancelled.

The 1971 reconstruction of the building (that has now collapsed) represents the last major public investment in the city archive—and since then the building was allowed to lapse into disrepair just like countless other public buildings in the city. Archive users made official complaints about the dilapidated state of the archive and its inadequate facilities. It was very expensive and/or extremely difficult for researchers to make copies or digital images of archive items.

As well as letting the building become more and more dilapidated, the council also cut back staffing. When Everhard Kleinertz, the predecessor of the current archive director, Bettina Schmidt-Czaia, took the director's position in 1973, there were 67 workers there. In 2005, after scores of downsizing and job-cutting measures, only 26 posts remained. The

upkeep, restoration and enhancement of the archive, amongst other things, inevitably suffered as a result.

Böll, René Böll; the artist Jürgen Klauke; Rosemarie Trockel; Marcel Odenbach; and Curtis Anderson. Architects have also signed the letter.

### Losses for historical research

Every day, more and more debris from the 28-metre-deep crater is being sifted through by countless volunteers, who have in the meantime found and provisionally sorted some archive remains. These are afterwards examined in a big hall by other volunteers, who are piecing them together, to the extent possible.

Damp archive remains are being taken immediately to the archive in Munster, which has a freeze-drying installation big enough for the job. The necessary subsequent restoration process will be time-consuming and painstaking.

The condition of the remains retrieved so far varies considerably. Some documents, including the personal papers donated by West Germany's first chancellor—and former mayor of Cologne—Konrad Adenauer, were rescued in nearly perfect condition, because they had been shielded from the constant rain by a concrete block. And, among others things, manuscripts from the medieval scholar and teacher Thomas Aquinas Albertus Magnus have been retrieved. But according to expert opinion, many of the archive's remains cannot be rescued, either because the items were completely crushed during the collapse or because they dissolved in water.

### Artists and scientists dismayed at the losses

Michael Knoche, the director of the Anna Amalia Library in Weimar, has visited the scene and considers the losses from the disaster in Cologne to be much more serious than the damages his library suffered after a fire in 2004. The books that were totally destroyed in that fire could all be replaced or at least could be found in other places, apart from a very few unique documents, like manuscripts, incunabula (early block-book prints) and single copies of old publications. Archive items, on the contrary, are distinguished above all by their uniqueness.

The Cologne State Archive was one of the most important sources of material for research into European urban history. The collection spanned over 1,000 years and was unmatched in its completeness and wide range of items.

Just how many more of these items can still be retrieved is hard to say. Some experts reckon at most 20 percent; others hope it could be 50 percent.

Students and researchers, who until recently used the archive for their work, feel devastated, because they cannot continue their academic studies and this threatens their future prospects. Others, who have already finished their studies, are no longer able to document their research conclusions with archive references, because the sources that they have quoted are simply not there any more.

Countless artists and cultural workers in Cologne have expressed their outrage in an open letter to the City Council. They are protesting against the fact that the responsible city authorities are not admitting their culpability for the catastrophe. In their letter, they say: "Our indignation is also caused by the fact that the building collapse is a typical example of the way in which the Cologne City Council has dealt with its past and present history and culture."

Included among the signatories to this letter are the son of Heinrich



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