

## **Explanation of the research**

The Fire Service Academy is developing contents for education materials. This is done with assistance from practical experts and by using research literature, amongst other things. Since 2013 incident investigation has also been added as input, in light of which this research has taken place. That means that the research questions, the conclusions and the recommendations should also be seen in that light. Therefore, this does not entail a fully comprehensive investigation into the incident like, for example, for researches with a particular emphasis on ascertaining the truth and the drawing of lessons from the incident that has taken place.

This also means that research questions are focused and restricted, and in many cases do not encompass the entire spectrum of the incident and the incident control. Conclusions should sooner be seen as being observations because, in order to draw conclusions in respect of the contents of the education materials to be developed, more input is necessary and more incidents in common practice will have to be analysed. Recommendations serve as a frame of reference for the developers of the contents of the education materials. The determining of the eventual contents of the education materials is subjected to an own validation process, which narrowly involves professional practice.

### **Management summary**

On Tuesday 26 February 2013 at about half past seven in the evening, a fire broke out in the sauna of the Draak Hotel in Bergen op Zoom. The Draak Hotel is a nationally listed building. The Fire Service Academy carried out an investigation into this fire in consultation with and in conjunction with the Safety Region of Mid and West Brabant and members from the Fire Investigation Team (TBO) working at this safety region. Here the Fire Service Academy focused on the development of contents for education materials relating to:

1. fire safety and the combating of fires in listed buildings;
2. deploying innovative extinguishing techniques.

Since there are no statutory regulations for the fire safety of listed buildings, the fire services had not demanded specific precautionary measures. The owner did not provide for additional facilities of his own accord either. In the Netherlands, legislation and regulations concerning (nationally) listed buildings do not specifically provide for better protection against fire than for other (old) premises. It is highly recommended that a national guideline or stricter legal requirements are formulated for the fire safety of listed buildings. In this way the fire service is better able to provide owners with advice about which precautionary measures to take, in order to limit the risk of being totally destroyed by fire.

In their approach to the incident controlling, the supervisors at the fire brigade have always been aware of the culture-historical value of the premises and have taken this into account during deployment. Their considerations have also included the age of the premises in relation to special fire fighting aspects. In the repressive considerations, account was kept of the applied building materials and building structures, as well as the irregularities (staggered heights) in floors and ceilings, which were concealed by suspended ceilings, amongst other things. That means a lot of hollow and empty spaces in wall and floor structures with the consequential chances and risks of fire development. The specific fact that the premises had a formal status as being a nationally listed building was not known, and there are no specific (national) procedures for listed buildings available in which, for example, it is indicated which points must be taken into account when combating a fire in a listed building.

The layout of the premises is complicated (unevenly spaced upper-level floors, empty spaces). Due to the fire brigade not having adequate information about the exact layout of the premises and the location of the seat of the fire, it took the fire brigade a relatively long time to combat the fire. That actually only happened when the fire became a conflagration.

In the combating of the fire the fire brigade (implicitly) acted according to the quadrant model and deployed two alternative and unconventional extinguishing techniques. Both a mist dispersion device as well as the Cobra Cold Cut System which is commonly called the 'Cobra cutter' were deployed, in which particularly the mist dispersion device had a favourable effect in an offensive outdoor deployment. Those who were involved perceived the deployment of the mist dispersion device as a turning point in the combating of the fire. The deployment of the Cobra cutter was put in place to restrict further damage to the premises. Because the Cobra cutter was only deployed at a late stage (it had to come from the Rotterdam-Rijnmond region), the Cobra cutter actually only provided a minimal benefit in the fire fighting. However, the Cobra cutter proved its value in bringing the fire under control. The deployment of this Cobra cutter reduced the amount that had to be demolished in order to reach the remaining burning pieces in the empty areas.