Case study: water mist in a historic palace

Ing. J.C. (Johan) Hoogeweg[1] , R.P.W. (Ronald) Oldengarm[2]

[1]DGMR Bouw b.v., Arnhem, Netherlands, jho@dgmr.nl

[21]DGMR Bouw b.v., Arnhem, Netherlands,OL@dgmr.nl

Abstract

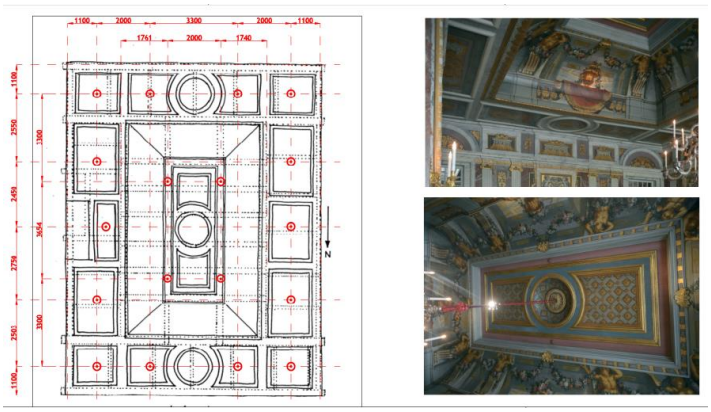
The Loo Palace[1] is a monumental palace in Apeldoorn, Netherlands. The symmetrical Dutch Baroque building was designed by Jacob Roman and Johan van Swieten and was built between 1684 and 1686 for stadtholder-king William III and Mary II of England. The palace will be renovated and expanded. Part of the renovation is a major improvement of all fire safety aspect in the historical part of the building.

For protecting the building and its typical interior an active fire protection system is desirable. Introducing an active fire suppression system in a historic building with decorated historical ceilings and walls is a complex process where a lot of different parties, for example: client, local municipality, architect, users, monuments department (with each their own opinions and demands) are involved.

Designing a water mist protection in a building like this not only about direct technical aspects (like codes/DIOM's) but involves more aspects. This is only a small aspect of it, some challenges we experienced:

- it's not allowed to place nozzles on the technical optimal positions due to visual aspects or possible irreparable damage to the ceiling. Where are heads allowed? How do the involved persons think about water mist heads (size, colour?, details) and the position of the heads.
- different permits are required for working in a monumental building. Part of the building permit process is there is a plan for where the heads are situated. However, the system vendor will be known only after the tender. Still there is a need for a design, how can you make a principle design for a system without knowing the system vendor?

In our presentation, we will share our experience and approach to these complex questions. We will give an insight in the process and methods we used to come to a water mist protection concept.



KEYWORDS: monumental buildings, design, codes,

[1] https://www.paleishetloo.nl