

# PANEL HOUSE FLAT FIRE IN SZOLNOK

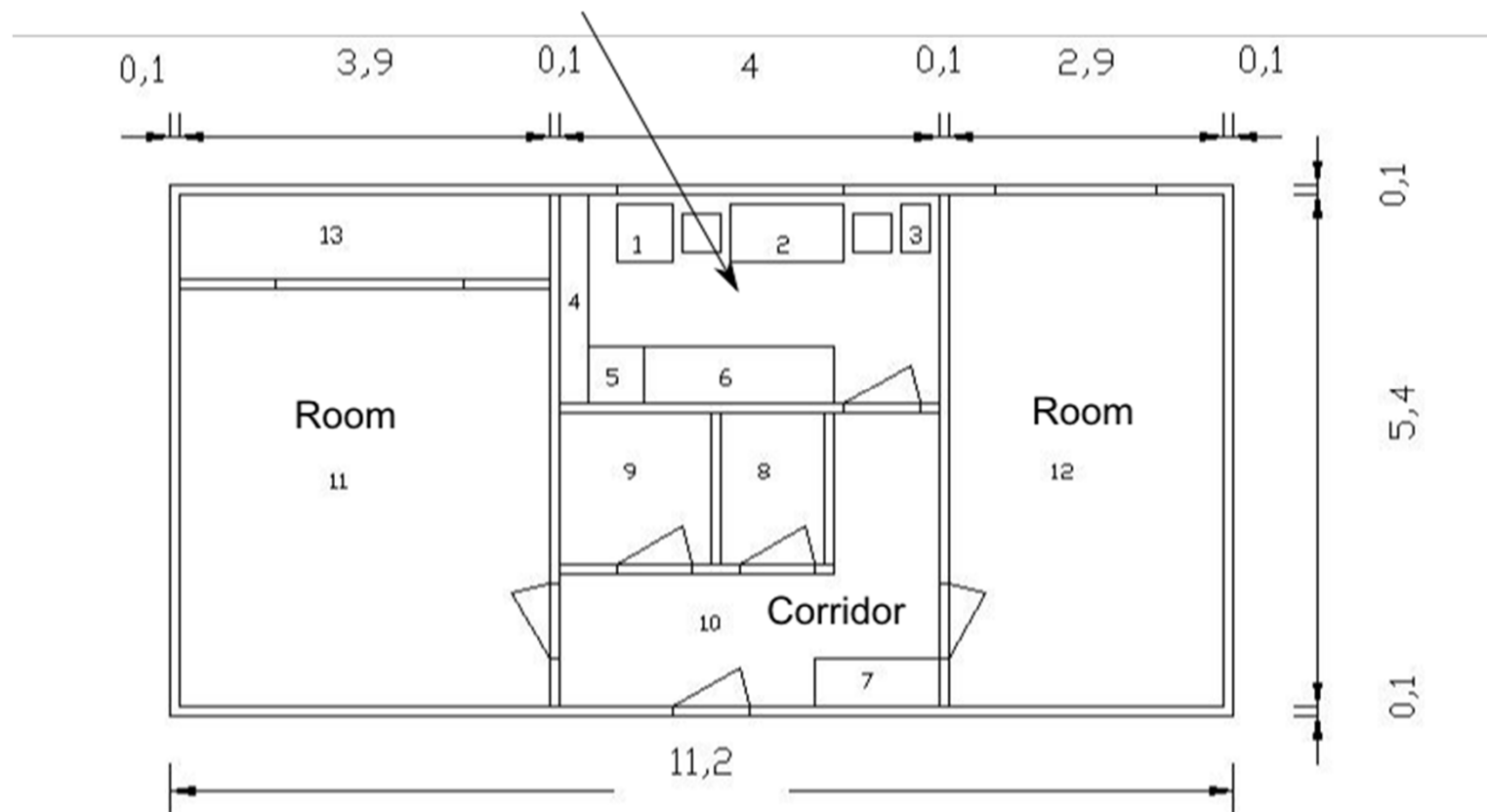
WG3 – **Csaba Szilágyi**, [sz.csaba@optomm.hu](mailto:sz.csaba@optomm.hu)

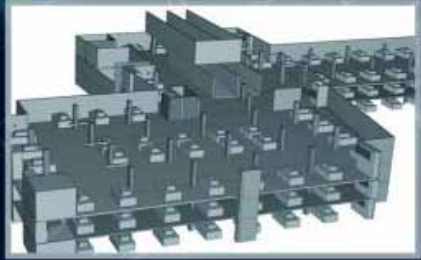
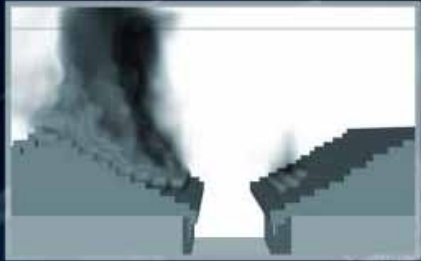


## Plan of the flat

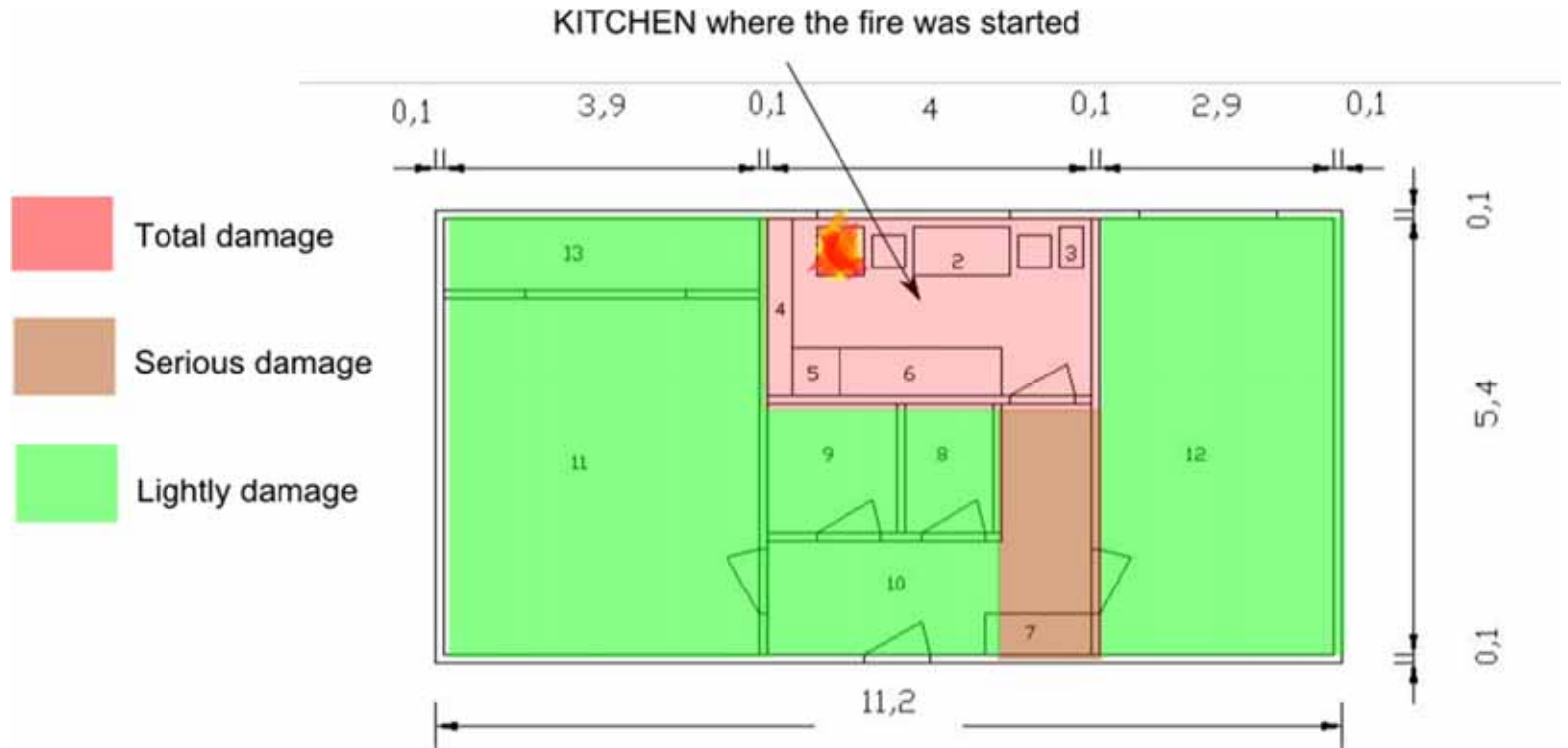
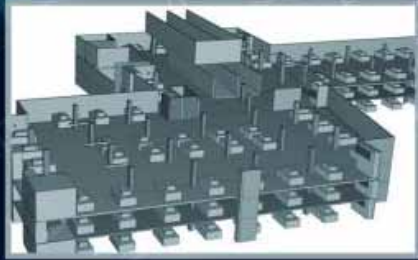
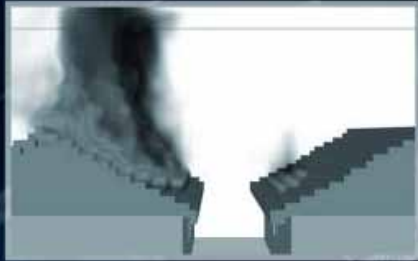
The building is a 10 stories building was built from concrete elements the fire case was in a flat on the 9-th stories. The flat is a two bedroom apartment. There were spruce wall cover to 2 meters tall in the kitchen and in the corridor. The total damage just was in the kitchen, that was surprise, because of the free fire growing duration was 16 minutes.

KITCHEN where the fire was started

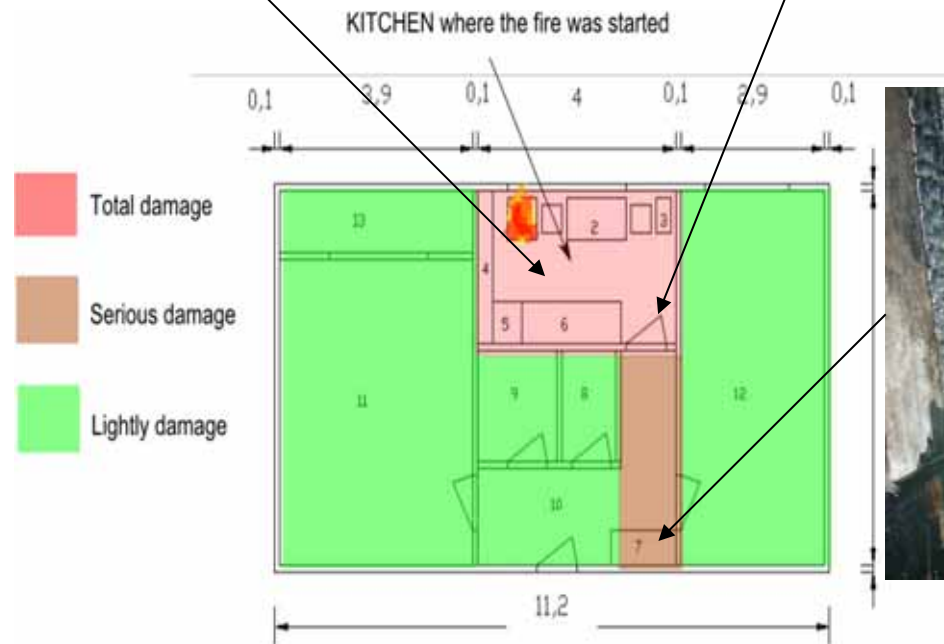
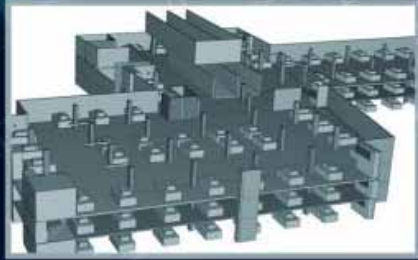
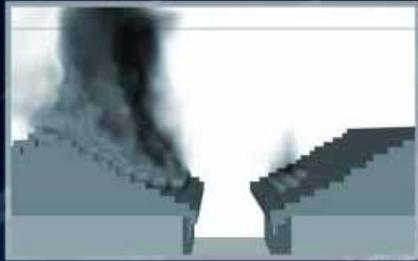




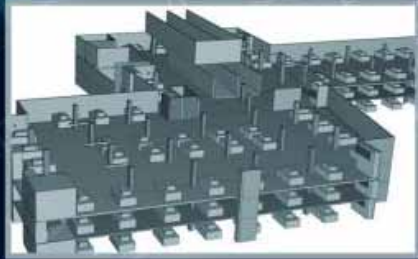
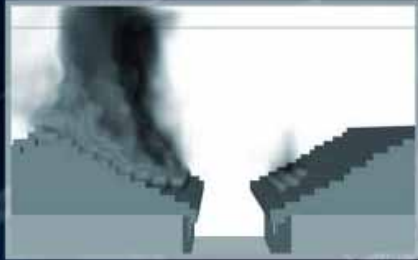
# Differences between the parts



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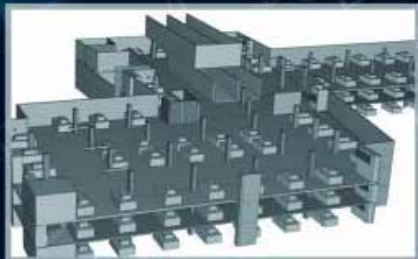
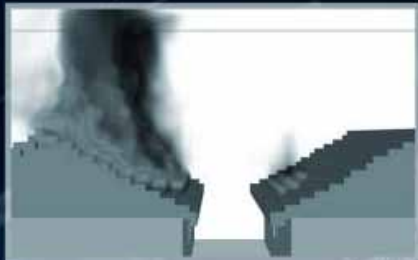


# Fire investigation

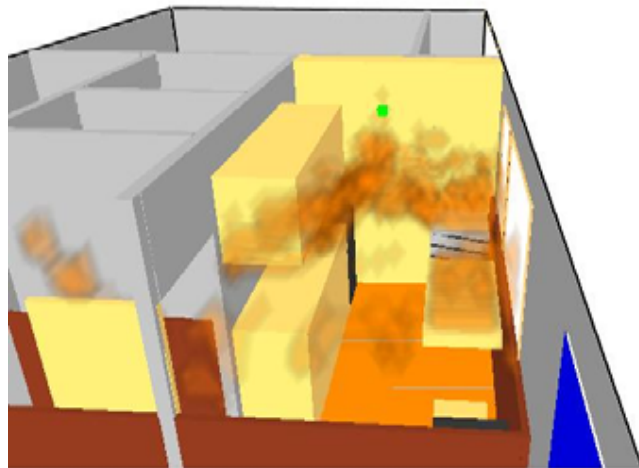


- The fire free growing duration 16 minutes
- The doors and windows were closed in the flat.
- The kitchen window was broken in the beginning part of the fire according to witnesses
- The damages were small if we calculate with the free oxygen flow, and that the flash over time is statistically 10 minutes
- The fire behaviour is similar like an oxygen controlled fire, but the oxygen flow was guaranteed across the window.
- The decision was to use fire model.

# Fire model

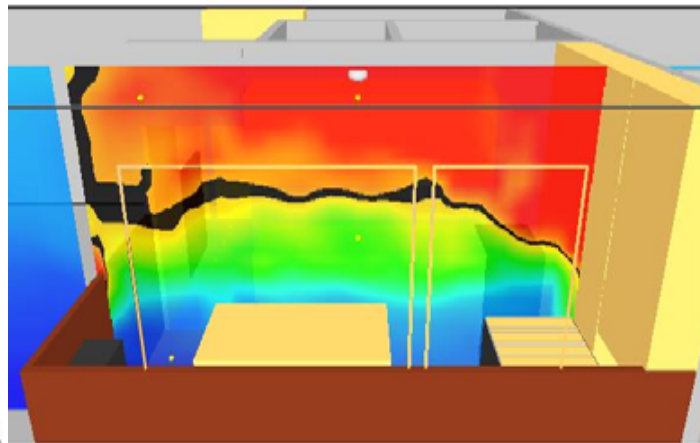


Smokeyview 4.0.7 - Mar 12 2006



Frame: 118  
Time: 165.2

Smokeyview 5.0.0 Beta - May 12 2007

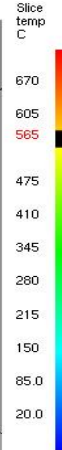
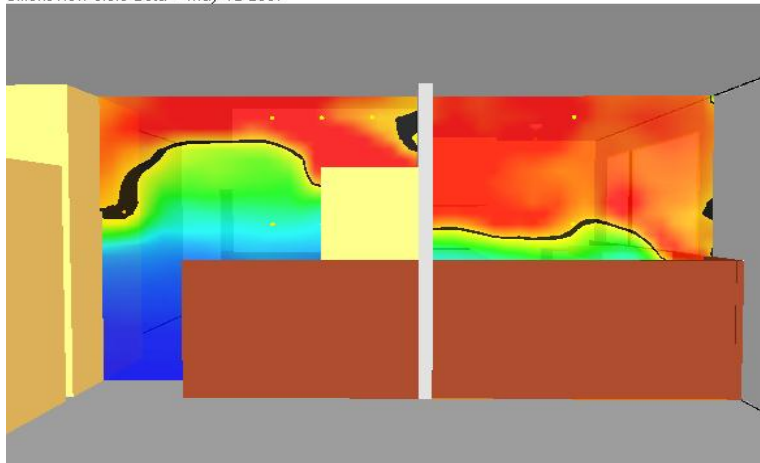


Frame: 147  
Time: 205.6

### Fire spread

### Temperature slice on the kitchen

Smokeyview 5.0.0 Beta - May 12 2007

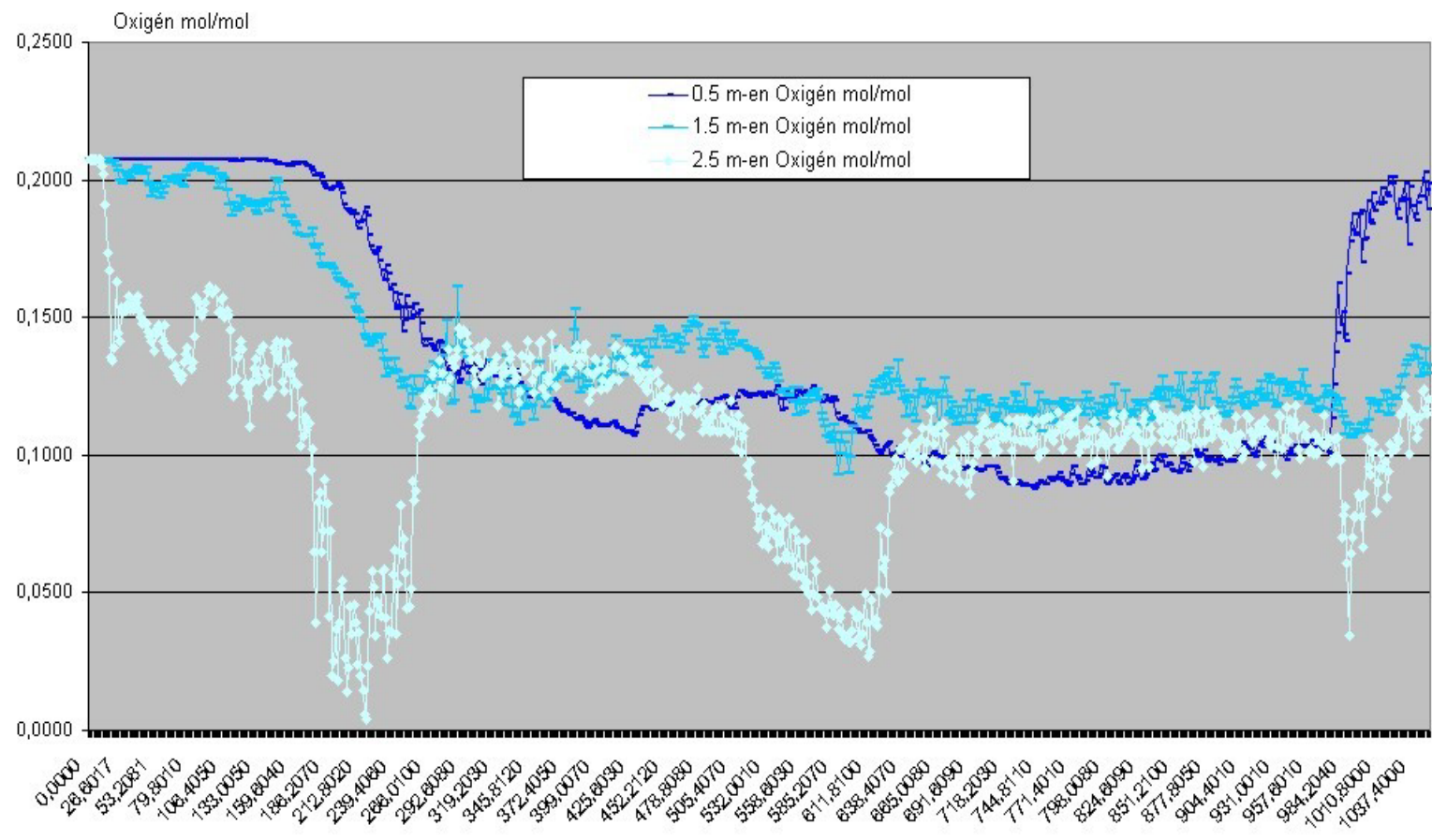


Frame: 147  
Time: 205.6

### Temperature slice on the corridor

# Concentration of Oxygen

The concentration fell down under the combustibility limit in the corridor

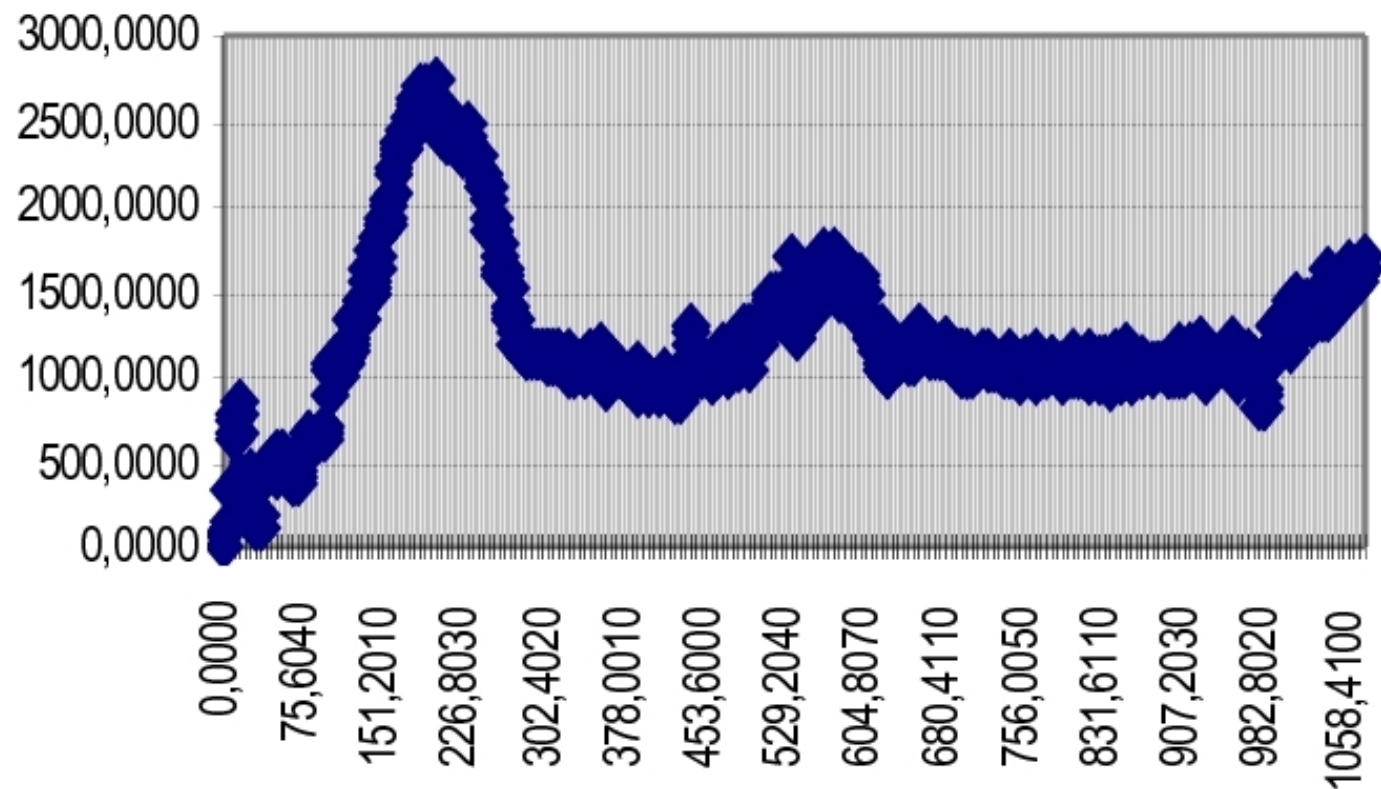




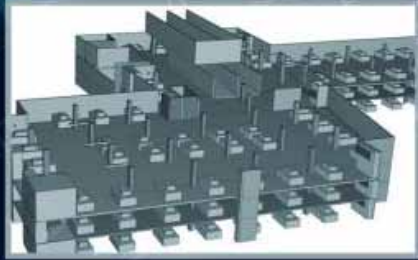
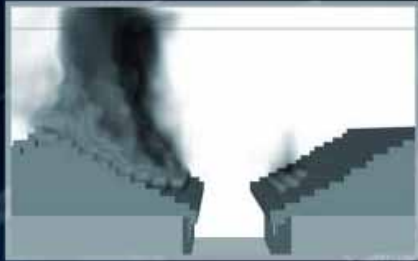
# Heat release rate

The HRR was also significantly decrease when the oxygen concentration low.

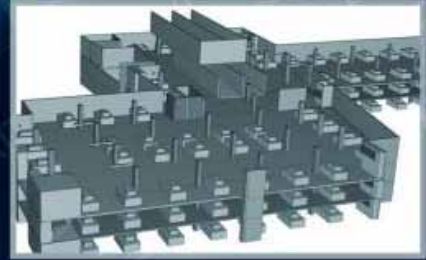
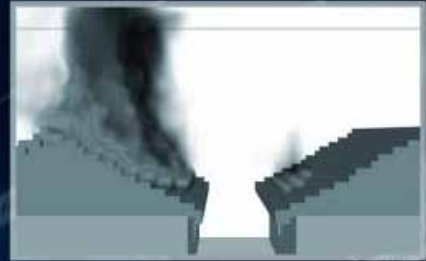
Hőfelszabadulási sebesség [KW]



## Solution



Oxygen could flow to the fire, but couldn't flow across the fire area to supply the burning in the other parts of the flat. The fire modelling was really useful in this investigation because without fire modelling it would have been a too complicated task.



**THANK YOU FOR YOUR ATTENTION**