



## fire safety engineering

Ramón Ugarteixe   Fernando Morente   Jon Aurteneaxe   Christian Pérez  
 Jesús De la Quintana

Tlf: (+34) 94 607 33 00

e-mail: jq@labein.es

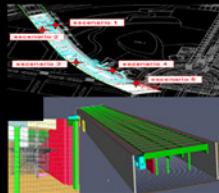
## fse - analysis of a 19th century cast iron structure of a heritage bridge

a performance based solution that combines water suppression and ventilation to avoid passive protection

### case study



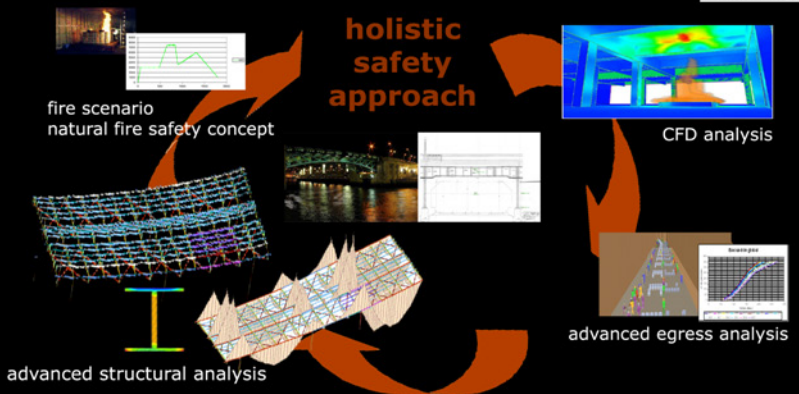
a 19th cast iron bridge defines an underground level / new access demands in the city were asking for the shelter that this unexpected 'cast iron tunnel' was giving them



### objective

to guarantee people security by means of fire safety analysis of the structure due to a change of use taking into account the restrictive condition of not allowing this protection of this historical structure

### methodology



### conclusions

- No passive protection of the structure is required
- A performance based analysis of an alternative solution has allowed to assess structural behaviour and people safety demonstrating that heritage can survive to fire without jeopardizing its beauty and splendour