



Fire Risk Evaluation To European Cultural Heritage (FiRE-TECH)

Quantification of priorities and optimisation
of fire protection strategies



Position of fire safety of cultural heritage in the regulatory system in various European countries

– Final Report

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1. Introduction

An important aim of the FiRE-TECH project is to develop an evaluation tool for the fire protection of cultural heritage. This requires a clear, overall strategy to be identified. A questionnaire was designed to collect already available information that could be used to support such a strategy. An important source in this respect is the way in which fire protection of cultural heritage is treated in national Regulatory Systems or, if such systems do not explicitly refer to cultural heritage, what can be learnt from existing practice.

The partners of the FiRE-TECH consortium have been asked to fill in the above mentioned questionnaire, where necessary with help of national authorities and other experts. Some of these partners were asked to contact neighbouring countries not represented in the FiRE-TECH consortium. Other partners were asked to supply the name of a contact person in a neighbouring country.

This document presents an analysis of the answers from part A of this survey and a further analysis of the answers. Part A includes existing practices, decision processes and regulations on fire protection of cultural heritage.

The countries and the contact persons in each country that have answered the questionnaire are listed Annexe 1. An overview of all the questions and the answers of part A is presented in Annexe 2.

2. Analysis of regulatory aspect of cultural heritage on the basis of response to BeneFeu questionnaires

2.1 INTRODUCTION

In the scope of the BeneFeu (The potential benefits of fire safety engineering in the European union, EC contract EDT/01/503480) project, questionnaires have been sent to regulators (both “principal” and – for a limited number of countries –“additional”) and to practitioners in order to identify the regulations concerning fire safety in the member countries. In each of these questionnaires, the role of (cultural) heritage in the Fire Regulations is raised in terms of “Society Goals” and “Functional /performance requirements” as part of the sub-goal “continuity of function”. More specifically, the questions were formulated as follows:

- with regard to “Goals for society”:

Which of these goals for your society are covered in the fire regulations?

- with regard to “Functional/performance requirements”:

Are the goals, identified in the previous question, expressed in functional/performance terms? and if so, please give examples.

With a view to identify which questions are relevant in the scope of Fire-Tech project and to whom such questions have to be posed, the heritage related response to the BeneFeu questionnaires are reviewed hereafter.

2.2 HERITAGE RELATED RESPONSES TO THE BENEFEU QUESTIONNAIRES

In 12 out of the 26 countries (9 out of the 18 European and 3 out of the 8 other) that have been included in the BeneFeu project, the heritage related response with regard to both the “Society Goals” and to the “Functional/performance requirements” was simply “no”, with no further information presented. In the other 14 cases, either from the regulator or/and the practitioner a positive answer was obtained to one or both of the above questions. Obviously, this last category of answers is particularly of interest for the Fire-Tech project, especially for these countries where functional/performance requirements with regard to (cultural) heritage do exist. Therefore, these answers have further been analysed in table 2.1 below.

One could conclude from the table that functional/performance requirements hold in the following countries: SF, I, IR, N, S, HK, and US. It is at hand to focus the Fire-Tech attention on these countries, since here most concrete information is expected to be found. However, in many of the cases, the information obtained via BeneFeu is far from being consistent. Note in this respect that:

- In Italy (I) the practitioner claims functional/performance requirements for heritage, which is not supported by the answer of the regulator;
- In Ireland (IR), Norway (N) and Sweden (S) the regulator claims functional/performance requirement for heritage, which is not supported by the answer of the practitioner.
- In Switzerland (CH), Germany (D), Denmark (DK), Japan (JP), Iceland (IC), Brazil (BR), and Singapore (SING) specific societal goals are claimed (by some of the responders, not all) to be available, however without corresponding functional/performance requirements; hence an operational basis for an active policy in the field seems to be lacking.

The only countries for which the responses seem to be consistent and positive are Finland (SF), Hong Kong (HK), and the USA. In all other situations the points raised above should be clarified/sorted out first, before further aimed question are asked.

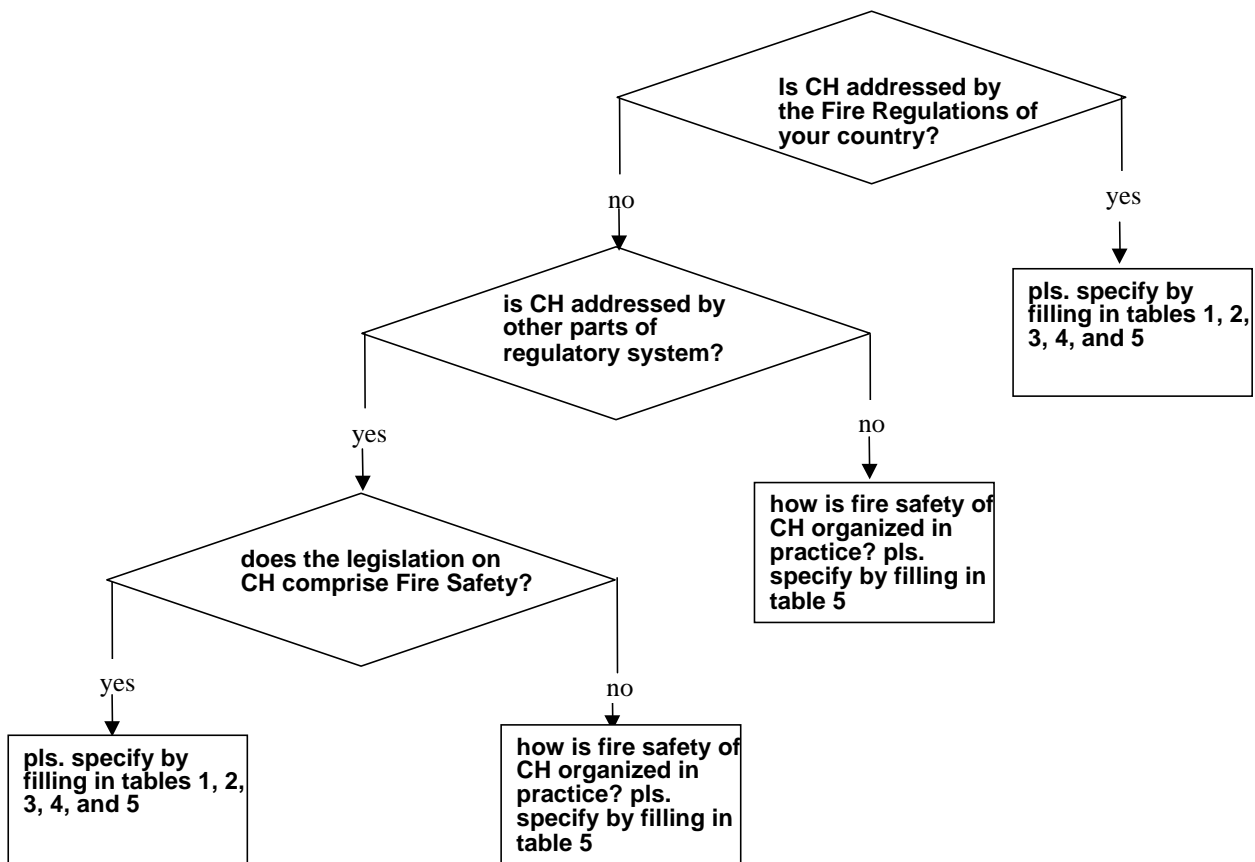
Table 2.1: Summary of the Benefeu answers related to cultural heritage

Country		Reference to cultural heritage in terms of:	
		Societal goals	Functional/performance requirements
BR		YES	NO
CH	regulator	YES	NO
	practitioner	YES	NO
D	regulator	YES	NO
	practitioner	NO	NO
DK	regulator	YES	NO
	practitioner	NO	NO
SF	regulator	YES	YES
	practitioner	YES	YES
HK		YES	YES
I	regulator	YES	NO
	practitioner	YES	YES
IC	regulator	NO	NO
	practitioner	YES	NO
IR	regulator	YES	YES
	practitioner	NO	NO
JP		YES	NO
N	regulator	YES	YES
	practitioner	NO	NO
S	regulator	YES	(YES)
	practitioner	NO	NO
SING		YES	NO
USA		YES	YES

A list of abbreviations can be found in annexe 4.

3. Set-up questionnaire

The following picture shows the main set-up of the questionnaire that has been sent out in the Fire-Tech project:



This chart was included in the form of a table as the first question in the questionnaire. Depending on the answers in this chart different tables should be filled in. A description of these tables is presented below.

All answers available from the different countries, summarised in one questionnaire, are presented in Annexe 1.

Table 1: Table 1 is designed in order to gather information about the regulatory aspects of fire safety of cultural heritage. It asks about the nature of the fire safety laws and with whom the responsibility for cultural heritage lays in the different countries.

Table 2: Table 2 is designed to gather information concerning goals for society that are covered by the fire regulations and goals that are specific for cultural heritage. Examples of goals are life and health safety and structure and content protection.

Table 3: Table 3 is designed to further specify the information gathered in table 2. The questions asked are concerned with the nature (functional /performance requirements or prescriptive requirements) of the goals in the fire regulations (not specific for cultural heritage) and the goals specific to cultural heritage.

Table 4: Table 4 is designed to see if there are different requirements for different building categories (i.e. castles, churches, etc.), for different kinds of historical sites (i.e., cities, districts or open air museums), and with respect to different building contents (historical objects, archives, art objects etc.) in the countries consulted.

Table 5: Table 5 is designed to identify how the organisation of fire safety of cultural heritage is managed in practice in the different countries. Table 5 asks about the common practice, the availability of guidance documents, the responsibility, the funding, and the priority setting in the field of fire safety of cultural heritage. It also asks about the availability of a definition of cultural heritage and whether there is any specific role for

insurance companies with respect to the fire safety of cultural heritage in the different countries. The table is included below.

Table 3-1: (Table 5 in the enquiry) The organisation of cultural heritage in practice

A1-5. ORGANISATION IN PRACTICE						
Is there a common practice in your country? (please delete where appropriate)	Yes: please continue filling in the table			No: no need to fill in the table		
Are there guidance documents concerning fire safety of Cultural Heritage? (please specify)						
Is the field of application of "Cultural Heritage" defined in your national regulation	Yes – please specify					No
	Owner	Government			Management	Other
		Central	Reg.	Local		
Who is responsible for fire safety of Cultural Heritage? (please tick)						
Who sets priorities? (please tick)						
Who provides funding? (please tick)						
Is there any specific role for the insurance companies with regard to fire safety of Cultural Heritage? (please specify)						

4. Participating countries

The questionnaire was sent out to all Fire-Tech member countries and a number of other European countries. The following table gives an overview of the answers that have been received.

Table 4-0-1: Answers received from member and additional states

partner	status response	additional member state
Belgium (B)	+	Luxembourg (L)
The Netherlands (NL)	+	None
Portugal (P)	+	Spain (E) (+/-)
England-Wales (E-W) Scotland (SC)	+	Ireland (IR) (-)
Austria (A)	+	Switzerland (CH) (+)
Germany (D)	+	none
France (F)	+	none
Greece (GR)	+	none
Hungary (H)	+	none
Italy (I)	+	Moldavia (M), Slovenia (SI), Romania (R)(-)
Sweden (S)	+	Denmark (DK), Finland (SF), Norway (N)(+)

Answers have been received from all countries participating in the Fire-Tech project. A number of Fire-Tech partners had the task to supply addresses to appropriate organisations in other European countries. These addresses have been received and the questionnaires have been sent out. Completed questionnaires have been received from two countries outside the consortium: Switzerland and Norway. Romania has confirmed the receiving of the questionnaire but was not able to fill it in further. From Spain general information has been received in the form of a letter, however more information will be sought from this country.

Answers have been collected throughout the entire project from missing countries where possible.

5. General regulatory aspects

The following table shows the answers from the first chart presented in chapter 2.

Table 5-1: General regulatory aspects in the different countries

QUESTION A1-1		
Is Cultural Heritage addressed by the Fire Regulations of your country?	Yes – I, P, CH	No – A, F, H, NL, D, S, SC, E-W, B, E
QUESTION A1-2		
Is Cultural Heritage addressed by other parts of your Regulatory System?	Yes – A, I, NL, B, D, CH, E-W, S, SC	No – F, H
QUESTION A1-3		
Does the legislation on Cultural Heritage include fire safety aspects?	Yes – A, I, NL, B, D, SC, S	No – F, H, CH, E-W

A list of country abbreviations can be found in annexe 4

Cultural heritage is addressed explicitly by the fire regulations of three countries that have responded to the questionnaire: Italy (I), Switzerland (CH), and Portugal (P).

In most countries that have responded to the questionnaire cultural heritage is addressed in another part of the regulatory system than in the fire regulations. Around half of the regulations for cultural heritage include fire safety aspects.

In most countries the fire safety regulations are of public law. In one country they are of civil law. In a number of countries there are regulations / guidelines with no formal status beside the public law.

The regulations concerning fire safety of cultural heritage have been in use during a period of 10 to 60 years in different European countries and were created due to different reasons. In Austria (A) the regulations were created after World War II. In Italy the regulation existed since World War II, but more attention was paid to them after a number of large fires in the 1980's. In Portugal rules for fire protection of cities were formulated because of the large Chiado fire in 1988.

In Germany (D) the regulations for cultural heritage were developed in the end of the 1970's in order to make precise regulations for cultural heritage.

6. Definition of Cultural Heritage

6.1 INTRODUCTION

Cultural Heritage should be defined in this project. The table below gives the definitions available from the member countries.

Table 6.1: Definition of cultural heritage in the various countries

Definition of Cultural Heritage		
Country	Definition available	Definition
Austria (A)	Y	Venice Charter
Belgium (B)	Y	?
Switzerland (CH)	Y	(VKF - AEAI) Brandschutzvorschriften (Cantonal)
Germany (D)	Y	Special regulations for each member state for cultural buildings
England and Wales (E-W)	N	-
France (F)	N	-
Greece (Gr)	Y	There are detailed definitions on the ancient monuments and the later movable and immovable monuments, where the public law is applied.
Hungary (H)	N	-
Italy (I)	Y	The field of application of 'Cultural heritage' consists of all the things of historic, artistic, demo-ethno-anthropologic, archaeological, archivist and book interest.
The Netherlands (NL)	Y	The Dutch Monuments and historic buildings act, 1988 (presented in Annexe 3 of this report)
Norway (N)	Y	?
Portugal (P)	Y	All buildings inside the historic centre not higher than 20m or 7 stories and DL 120/97 (Decree) - defines the nature, field of action and responsibilities of IPPAR
Sweden (S)	Y	In the Swedish planning and building act, 1987:10, Part 3, section 10
Scotland (SC)	Y	Listed Building; Scheduled ancient monument; Conservation area

The definitions based on the Krakow Charter, the Venice Charter (International charter for the conservation and restoration of monuments and sites), and the Blue Shield Charter (Convention for the protection of cultural property in the event of an armed conflict) are given below. The Dutch definition for cultural heritage is presented in Annexe 3 of this report.

6.2 THE KRAKOW CHARTER

In the charter of Krakow 200 "Principles for conservation and restoration of built heritage" the first paragraph states "The architectural, urban and landscape heritage, as well as artefacts, are the result of an identification with various associated moments in history and social-cultural contexts. The conservation of this heritage is our aim".

Further in this charter different kinds of built heritage are named: -Archaeological heritage, -Historic buildings and monuments (in urban or rural context), - Architectural decoration, sculpture and artefacts, - Historic towns and villages, and - Landscapes.

In this document heritage is defined as: "Heritage is that complex of man's work in which a community recognises its particular and specific values and with which it identifies. Identification and specification of heritage is therefore a process related to the choice of values"

Further in this document a monument is identified as: "A monument is an entity identified as of worth and forming a support to memory. In it, memory recognises aspects that are pertinent to human deeds and thoughts, associated with the historic time-line. This may still be within our reach, even though not yet interpreted."

6.3 THE VENICE CHARTER

International charter for the conservation and restoration of monuments and sites
Venice, 1964
http://www.international.icomos.org/e_venice.htm

Definitions:

Article 1. "The concept of an historic monument embraces not only the single architectural work but also the urban or rural setting in which is found the evidence of a particular civilisation, a significant development or a historic event. This applies not only to great works of art but also to more modest works of the past which have acquired cultural significance with the passing of time."

6.4 THE BLUE SHIELD CHARTER

Convention for the Protection of Cultural Property in the Event of Armed Conflict
The Hague, 1954
<http://www.icomos.org/hague/>

Article 1. Definition of cultural property

"For the purposes of the present Convention, the term "cultural property" shall cover, irrespective of origin or ownership:

- (a) movable or immovable property of great importance to the cultural heritage of every people, such as monuments of architecture, art or history, whether religious or secular; archaeological sites; groups of buildings which, as a whole, are of historical or artistic interest; works of art; manuscripts, books and other objects of artistic, historical or archaeological interest; as well as scientific collections and important collections of books or archives or of reproductions of the property defined above;
- (b) buildings whose main and effective purpose is to preserve or exhibit the movable cultural property defined in sub-paragraph (a) such as museums, large libraries and depositories of archives, and refuges intended to shelter, in the event of armed conflict, the movable cultural property defined in subparagraph (a);
- (c) centres containing a large amount of cultural property as defined in subparagraphs (a) and (b), to be known as "centres containing monuments". "

6.5 CONCLUSION

It can be concluded from the definitions that there are four main types of cultural heritage:

- Historical buildings
- Historical buildings with historical contents
- Historical contents
- Cities or groups of historical buildings

All these groups will be referred to as cultural heritage in the scope of this project. What makes them to be considered as historic or cultural heritage will not be addressed in this project.

This project will not take into consideration historical forests or gardens when referring to cultural heritage.

7. Organising Fire safety of cultural heritage

The funding and maintenance of cultural heritage lies in the hands of the owner of the property in all countries. In some countries the local / regional / central government may give subsidies for these activities. In England, England Heritage can give subsidies and in the Netherlands, the Netherlands Department for Conservation can give subsidies.

The responsibility of the fire safety of cultural heritage lies mainly in the hands of the owner. In almost all countries this responsibility also is shared with the local / regional / central government.

In Scotland, Historical Scotland is responsible, as the central government body, of the fire safety of cultural heritage. On a regional plane the fire brigade holds the responsibility and on the local place the building control officers hold the responsibility.

In different countries different organisations /governmental bodies set the priorities related to for the protection of cultural heritage. In Switzerland this is the responsibility of the fire authority. In Germany the responsibility lies with a local government body and in Italy the responsibility lies with the central government / a central government body.

8. Goals for society

The following table gives a summary of the results of the questionnaire concerning the goals for society.

Table 8-1: Goals for society in fire regulations and in cultural heritage regulations

A1-2. GOALS FOR SOCIETY			
a) Which of the "goals for society" are covered by the general Fire Regulations (i.e. NOT specific to Cultural Heritage)?	goal	covered by general Fire Regulations	Specific for Cultural Heritage
b) Which of these goals are specific to Cultural Heritage? (please tick, if relevant)	<i>2.1 life and health safety</i>	A, B, CH, D, E-W, I, NL, P, S, SC, N, GR	CH, I, P
	<i>2.2 property protection</i>		
	- structure	A, B, CH, D, I, P, S, GR	B, CH, D, I, NL, P, S, N
	- content	A, CH, P, GR	CH, D, I, NL, P, N
	<i>2.3 environment</i>	A, D, NL, P, GR	P
	<i>2.4 continuity of function</i>		
	- business	P	P
	- social activity	P	P
<i>2.5 others (give details)</i>			

A list of country abbreviations can be found in annexe 4

Table 8-2 presents a summary of the presence of specific rules for cultural heritage in the different countries.

Table 8-2: The presence of specific rules for cultural heritage in the different countries

partner	specific goals/rules for cultural heritage		additional MS
	← partner	add. MS →	
B	YES (structure only)		L
NL	YES		none
P	YES		E
UK	NO		IR
A	NO		CH: yes
D	YES		none
F	NO		none
Gr	NO		none
H	NO		none
I	YES		SI, M, R
S	YES (structure only)		DK, SF, N :yes

A list of country abbreviations can be found in annexe 4. The countries in bold are the ones from which where answers have been received.

There are three countries that have specific goals concerning life and health safety for cultural heritage: Switzerland, Italy and Portugal. In all other countries these goals are stated in the fire regulations but are not specific for cultural heritage.

Property and content protection is mentioned in the fire safety rules specifically for cultural heritage in six countries. In Belgium and Sweden the rules concern structural protection only. The Portuguese regulations also mention continuity of function, social activities, and environmental protection specifically in the fire regulations with respect to cultural heritage.

The goals of cultural heritage are in most countries (where they exist) both functional and prescriptive. An example from the Italian regulations states: A building must be provided with a safe evacuation path and this path must be at least 90 cm wide. In The Netherlands there are only prescriptive requirements requiring such measures as: lightning protection, fire resistance of structure, and sprinklers in building. The following table

shows which countries have functional and which countries have prescriptive requirements with respect to fire safety of cultural heritage. In Sweden there are requirements that risk-analysis should be performed for state owned heritage buildings and buildings with valuable collections. This risk-analysis should include not only the documentation of the fire risk but also an assessment in terms of the heritage and economical value of the collection /building.

Table 8-3 : Nature of requirements for fire safety of cultural heritage

A1-3. NATURE OF REQUIREMENTS			
Are the goals identified in table 2, expressed in functional/ performance or in prescriptive requirements?			
(b) Goals specific to Cultural Heritage (please tick)	GOAL	Functional /performance requirements	Prescriptive requirements
	<i>3.1 life & health safety</i>	(CH), I, P, S	CH, I, P
	<i>3.2 property protection</i>		
	- structure	(CH), I, P, S	B, CH, I, NL, P
	- content	(CH), I, P	CH, I, NL, P
	<i>3.3 environment</i>	-	-
	<i>3.4 continuity of function</i>		
	- business	-	-
	- social activity	-	-
	<i>3.5 other (give details)</i>	-	-

A list of country abbreviations can be found in annexe 4.

9. *Differentiation with respect to building category*

A differentiation with respect to building categories is made in some countries:

As an example, in The Netherlands there is a top 100 list with the most important heritage buildings / objects. There are also special requirements for windmills and archives.

In Italy libraries, museums and archives are subjected to a number of extra prescriptive rules.

In Portugal historic centres are mentioned specifically in the fire regulations, and all the buildings inside them have to fulfil a number of requirements.

In Sweden specific rules are available for churches.

In Scotland distinction is made between listed buildings and conservation areas, and ancient monuments.

10. Organisation in practice

There is a common practice concerning the organisation of fire safety of cultural heritage in almost every country. Most countries have guidance documents concerning the fire safety of cultural heritage. In general these documents are not mandatory.

The following table shows the availability of guidance documents in the different countries:

Table 10-1: The availability of guidance documents in the different countries

partner	guidance doc. available?	additional MS
	← partner	add. MS →
B	NO	L
NL	YES	none
P	YES	E
UK	YES	IR
A	YES	CH: YES
D	NO	none
F	YES	none
Gr	YES	none
H	NO	none
I	NO	SI, M, R
S	YES	DK, SF, N: YES

A list of country abbreviations can be found in annexe 4. The countries in bold are the ones from which where answers have been received.

In Sweden, for example, there are the following guidance documents: "Fire Safety in Cultural Heritage buildings", "Fire Safety in wood cities", and "Protecting the church against fire and theft". In Sweden the church community has its' own insurance company which gives out newsletters and spreads information on how to protect the church against various hazards.

In France and Greece there are guidance documents for buildings or contents under the control of the Ministry of Culture.

In England there are documents available from English heritage, and in Wales from CADW (Heritage in Wales).

In Scotland a number of documents are available from Historic Scotland. These include Technical advice notes 11: Fire Protection measures in Scottish historic Buildings, 14: The installation of sprinkler systems in historic buildings, and 22: Fire risk management in heritage buildings.

In Hungary no guidance documents are available. However, in practice, the National Office for the Protection of Ancient Monuments determines on a case by case basis the fire safety requirements and seeks the opinion of the fire authority, these requirements then have to be followed by the owner, designer or building authority.

In the UK the insurance companies can influence the level of fire safety in cultural heritage by requiring extra measures or imposing higher premiums if certain measures to increase the fire safety are not taken. In Germany the insurance can expire if changes are made or if the building is misused.

11. Identification of bodies in charge of fire safety of cultural heritage

11.1 SPECIFICATION OF THE INVOLVEMENT, ACCORDING TO BUILDING CATEGORIES

In many countries the responsibility for the different categories of cultural heritage lies with different governmental agencies. In Germany and Belgium, for example, the local government is in charge of the fire safety of cultural heritage for all buildings in the area.

In numerous countries church organisations or insurance companies are involved in protecting churches and monasteries from fire.

In Hungary there is a National Office for the Protection of Ancient Monuments (OMVH) which is involved the protection of monuments.

In the Netherlands there is a central organisation in charge: Netherlands Department for Conservation (RDMZ). Locally in the Netherlands each community has a “monument bureau” acting as contact point for cultural heritage matters; its size and authority depends on number of monuments in that community.

In Italy the National Body of Fire Brigades controls every building in –concerning fire safety- no matter if it is part or not of the Cultural Heritage. The Superintendent to the Cultural Heritage –locally based- may argue with the Fire Brigades local Commander, but final decision is to that last one.

In Sweden the National Heritage Board (Riksantikvarieämbet), has the national responsibility for control of the listed (byggnadsminnesförklarade) cultural heritage in Sweden. On the regional plane the control is governed by the county administrators environmental delegation. These organisations are helped by the cultural heritage law (KML). Also the local government is responsible, through the city architect (or similar) or the local conservator, for the local governing of the cultural heritage with the help of the planning and building act. Concerning historical places that are not listed, the National Heritage board, the county administrators, and the regional museums are involved for advice and remittance.

11.2 SPECIFICATION OF THE INVOLVEMENT WITH RESPECT TO HISTORICAL SITES

The responsibility for different categories of historical sites lies with different government bodies in the different countries.

In Hungary the OMVH is involved in the protection of historical sites together with the central and local government.

In England -Wales a central government body is in charge of the fire protection of historical sites. Also planning and development regulations apply to all areas and sites and the planning of new, additional buildings on heritage and historical sites is strictly controlled.

In The Netherlands a complex of buildings is considered as one monument. This will imply specific requirements in the zoning plan, but no specific rules are written down.

11.3 SPECIFICATION OF THE INVOLVEMENT, DIFFERENTIATION WITH RESPECT TO BUILDING CONTENTS

The fire protection of cultural heritage art objects lies in many countries with different government controlled agencies.

In Greece central and local government controlled initiatives /organisations and government supported agencies are involved in the protection.

In England and Wales these matters are only dealt with by private insurance companies. There are no mandatory rules that deal with building contents.

In The Netherlands the RDMZ (The Netherlands department for conservation) has no responsibility for the building content, except for cultural items, which are specific for the building (e.g. church benches, altars, etc.).

In The Netherlands the following special services exist (like RDMZ), also belonging to the Ministry of OC&W (Education, culture and science): ICN (Instituut Collectie Nederland), The national institute for the management and conservation of movable cultural heritage and ICB (Inspectie Cultuur Bezit), "the inspection for cultural property", undertakes inspections of national collections, formulates the law of conservation of cultural property, recuperates and restores Dutch cultural heritage.

In Sweden the responsibility for building contents lies with the owner of the contents. For non-private objects the responsibility lays, on a national scale with one of the state museums, and on a local scale with one of the regional museums.

In Scotland the responsibility for different kinds of building contents lies with different organisations. For art objects the responsibility lies with the Scottish museum council and for books and archives the responsibility lies with National libraries of Scotland and the Scottish Records Office.

12. Other interesting literature

12.1 NFPA 909: STANDARD FOR PROTECTION OF CULTURAL RESOURCES, INCLUDING MUSEUMS, LIBRARIES, PLACES OF WORSHIP, AND HISTORIC PROPERTIES, 2001 EDITION.

General:

“This standard shall apply to culturally significant structures and their contents. Such structures include, but are not limited to, buildings that store or display museum or library collections, historic buildings, and places of worship. It also includes spaces within other buildings used for such culturally significant purposes.”

“This standard shall prescribe minimum requirements for the protection of cultural properties and their contents through a comprehensive fire protection programme. Because of the special nature of cultural properties, the standard shall supplement existing codes and standards to apply specifically to buildings or portions of buildings devoted to such use. The requirements of NFPA 101, Life safety code, shall apply to both new and existing cultural properties.”

Lay out:

The code consists of 11 chapters and 13 annexes. The chapters include among others:

Chapter 2: Fire Emergency planning

Chapter 3: Fire Prevention

Chapter 4: New constructions, alterations and renovations

Chapter 5: Fire Precautions during alterations and renovations

Chapter 6: Inspection, Testing, and Maintenance

Chapter 7: Historic structures and sites

Chapter 8: Museums and Museum collections

Chapter 9: Libraries and Library collections

Chapter 10: Places of worship

The annexes include among others:

Appendix A: Explanatory material (Including representative fire examples)

Appendix B: Fire risk assessment in heritage premises

Appendix C: Compact storage fire tests

Appendix D: Fire Safety inspections form

Appendix E: Fire Protection system maintenance checklist

Appendix F: Basics of Fire and Fire protection systems

Appendix G: Resources

Appendix H: Related publications

Appendix I: Salvage of water-damaged library materials

Appendix J: Factory Mutual Engineering Division laboratory report

Appendix K: Secretary of Interior's standards

Appendix L: Guideline on Fire ratings of Archaic Materials and Assemblies

12.2 NFPA 914: CODE FOR FIRE PROTECTION OF HISTORIC STRUCTURES, 2001 EDITION

General:

The purpose of this document is to provide fire protection and life safety systems in historic buildings while protecting the elements, spaces, and features that make these structures historically or architecturally significant.

This document describes fire safety requirements for the protection of historic structures and for those who operate, use, or visit them. It covers ongoing operations, renovation, and restoration and acknowledges the need to preserve historic character.

The code addresses those construction, protection, operational, and occupancy features that are necessary to minimise danger to life, structures, and contents from the effects of fire, including smoke, heat and fumes.

The code identifies the minimum fire safety criteria to permit proper escape of the building occupants to a safe area and to minimise the impact of fire and fire protection on the structure, contents, or features associated with the historic character.

Layout:

The code consists of 11 chapters and 12 annexes. The chapters include among others:

Chapter 4: Process (the process by which this code should be applied),

Chapter 5: Prescriptive-based option

Chapter 6: Performance-based option

Chapter 7: Fire precautions during construction, repair, and alterations

Chapter 8: Inspection, Testing, and Maintenance

Chapter 9: Fire Prevention and Fire Protection

Chapter 10: Special events

Chapter 11: Management Operational systems

The annexes include among others:

Appendix A: Explanatory material

Appendix B: Planning and design appraisal

Appendix C: Survey criteria for a historic structure

Appendix D: Fire Safety inspections form

Appendix E: Fire Protection system maintenance checklist

Appendix F: Basics of Fire and Fire protection systems

Appendix G: Resources

Appendix H: Secretary of Interior's standards

Appendix I: Guideline on Fire ratings of Archaic Materials and Assemblies

Appendix J: BSI Timber panel door standard

13. Further study

In this chapter a number of guidelines and regulations will be looked at.

First of all the Swedish guideline for churches will be looked at. In Sweden there are three guidance documents that also will be studied: "Fire Safety in Cultural Heritage buildings", "Fire Safety in wood cities", and "Protecting the church against fire and theft".

Further the Scottish Technical advice notes 11: Fire Protection measures in Scottish historic Buildings, 14: The installation of sprinkler systems in historic buildings, and 22: Fire risk management in heritage buildings will be studied.

Also the Dutch guidance documents for windmills will be studied and a Dutch handbook concerning the making of a calamity plan for monumental buildings or buildings with monumental contents.

In France two guideline documents were published in 2003 concerning the fire protection in musea and historic monuments "La prévention contre l'incendie dans les musées et monuments historiques". These documents will also be shortly presented.

The Scottish regulations where differentiation is made between listed buildings, conservation areas, and ancient monuments will be further examined.

The regulations from Portugal will be further studied. This because the fire safety of cultural heritage is addressed explicitly in the fire regulations in Portugal, which are recent (from 1989).

The Swedish law concerning heritage will thereafter be shortly presented.

Also the Dutch Archive law will be examined.

Finally an attempt is made to analyse a number of the studied guidelines and regulations to define common goals and objectives.

13.1 GUIDANCE DOCUMENTS

13.1.1 *Protecting the church against theft and fire, Swedish National Heritage board.*

The following is a short description of the main guidelines in the above-mentioned document

- A) Protecting the church against theft:
 - a. Make a list (and eventual photos) of all inventory, these can also be marked
 - b. Control the locking routines and the lights in and around the church. A keylocker will allow the rescue service to enter the church quickly /easily.
 - c. Lock in object that can be desirable for theft, eventually replace them with copies.
 - d. Discuss with the rescue services so a rescue "order" of object can be established.
 - e. An alarm can be installed as a complementary measure to those above
- B) Protecting the church against fire
 - a. All easily ignitable material / garbage in the attic and in storage should be cleaned away. To keep things orderly is one of the most effective ways to limit fire.
 - b. Create routines for cleaning, emptying of paper bins etc.
 - c. Check electrical installations and the lightning protection installations regularly.
 - d. Put timers on electrical equipment
 - e. Check all lamps (attachment, wires, and placement)
 - f. Place candles so that they cannot ignite any other material, even if they fall. Do not leave burning candles without surveillance.
- C) Escape
 - As a starting point one should avoid solutions for escape that necessitate changes in the building itself. One should try to compensate through early detection and suppression instead of changing the building.
- D) Salvage

A list of the most valuable items should be made. A list should also be made what part of the building should not be touched during fire fighting operations (as an example glass windows).

Conclusion:

Most measures stated above are not specific for churches but can be applied to buildings in general. However it is stated that the church has special problems since it is generally open to everybody and entrance is allowed during the day at mostly all hours. The points stated after escape and salvage concern not only churches but can also be applied to most cultural heritage.

In addition to this document a document is available from the Swedish churches' insurance company. It is called "the Churches' ten safety decrees" and is presented below:

1. Decide upon a safety policy: the safety policy should describe the scope of the safety planning and clarify goals, guidelines, priorities, and resources
2. Name a person responsible for the safety
3. Work together with the local rescue services
4. Work with control lists (for church and organ): the goal is to prevent fires, allow safe escape, prevent fire spread and facilitate suppression.
5. Put alarms in the building
6. Keep an eye on the building: through informing staff of risks, installing lights around the building, etc.
7. Document cultural historic objects
8. Educate and inform personnel
9. Plan salvage
10. Install /check other safety measures: As an example; correct locks should be installed, list all valuable goods, etc.

Conclusion: These goals can be applied to most cultural heritage buildings, with only a number of specific points for churches, as an example a control list for the church organ.

13.1.2 Fire Safety in Cultural Heritage buildings, Swedish Rescue Services Board and the Swedish National Heritage Board.

This document was made after a number of large fires destroying cultural heritage in the early 1990's. It is directed to building conservationists and to the local rescue services, but also appropriate for building owners or managers that are involved in heritage protection.

The documents starts with a description of fire, including aspects such as fire spread, smouldering, growth, and flash over. It thereafter explains the legislations and rules that concern cultural heritage. It also explains what government properties are involved in the protection and conservation of cultural heritage.

It also includes a chapter about verifying the fire protection in buildings and what regulations should be applied during the control.

Thereafter it has a chapter of fire protection specifically for cultural heritage buildings. It is mentioned as a first statement that one should try to avoid the changing of the building as much as possible, they should also be done in such a way that repair / taking away / replacing of the installations should cause as little harm as possible. Also the installations / signs etc. should be placed in such a way that they disturb the atmosphere in the building. Escape from the building is treated. Different aspects such escape doors, windows, emergency lighting, alarm, escape for physically impaired are treated. Protection against fire-spread in the building is then treated. It is stated that in heritage buildings the wall coverings often do not fulfil the requirements for avoiding fire spread. Compensating measures such as a simple sprinkler system are suggested. Problems concerning compartment doors are mentioned and measures to upgrade them are presented. The document also includes a chapter on measures to facilitate suppression. Different detection and suppression systems are presented and compared.

After the chapter of fire protection specifically for cultural heritage buildings a chapter concerning the planning and organisation of the fire protection is presented. It highlights the importance of collaboration between the building owner and the rescue services. It also explains how a fire protection program can be set up.

The final chapter is concerning salvage. It is stated that already during the suppression phase mitigation of the damage should be taken into account. It is pointed out that in Sweden there is an organisation that takes care of

damaged property in order not to aggravate the damage after the rescue services have finished their work and before the owner and insurance company have the possibility to take care of the goods.

13.1.3 Fire Protection of wooden cities, Swedish Rescue Services Board and the Swedish National Heritage Board

This document is seen as complementary to the document in 14.1.2 "Fire Safety in Cultural Heritage buildings", since that document only mentions shortly the protection of cities. This document is made for the responsible persons in the local government. It has the goal of creating a fire protection strategy for wooden towns.

This report has been based on the situation in the old wooden city of Eksjö. A project group was designed in order to check the buildings in the centre of the city on the following aspects:

- The construction materials of the buildings, their status and their fire resistance
- The possibilities in the buildings to prevent fire spread
- The fire load in the buildings
- The fire spread possibilities
- The damages and insufficiencies
- The entrances to all buildings

In addition the risks of this special city were studied. A few examples of particular risks are given below:

- Some summers there is no water in the lake which provides extra extinguishing water
- There are a lot of closed yards and narrow roads
- There are a lot of small apartments with elderly tenants

Based on the results of this study an action list was created with a number of different fire protection measures. It is stated that the cheapest measures are generally those to prevent fire. These measures also generally do not alter the cultural historic value of the building.

The measures to prevent fire are divided into 2 categories: administrative and general measures and measures directed to the building. As an example administrative and general measures can be: Information to the public about fire risks and reporting rebuilding and reparation works in the inner city. Measures directed towards the building can be: Information to the owner, control of fire places, general control of electrical installations, etc.

Measures to prevent fire spread can be the following: support the installation of fire alarms and the acquisition of fire extinguishers, repair faults in the separating constructions and look into how the supply of extinguishing water can become sufficient.

These measures have been put into a list naming the measure, the body responsible for carrying it out, the starting time and the cost of the measure.

Conclusion: A number of points are special for wooden cities, however this process can be used also for other historic city centres since many of the characteristics are the same.

13.1.4 Fire Risk management in heritage buildings, Technical advisory note 22, Historic Scotland, Technical conservation research and educational division

In addition to addressing the fire risk management issues related to the fabric of historic buildings, this TAN also considers the risk related to the contents of the buildings where these are of importance. The recommendations and conclusions in this report are based on two main projects: The National Library of Scotland in Edinburgh and Duff House in Banff.

This TAN explains to practitioners, owners and regulators how the risk assessment approach should be applied to heritage buildings and outlines the benefits of this procedure in reducing the risks of and consequences of fire. It states that a life safety fire risk assessment is legally required for all workplaces and must be kept up-to-date. A more comprehensive property risk assessment (also covering buildings and contents) should be carried out for all heritage buildings. It is stated that risk assessment in heritage buildings should take place before any activities that will affect the risk will take place.

The risk assessment demands that at least the following is considered:

- Likely causes of fire
- Materials likely to be ignited

- Structural features which permit smoke of fire spread
- How the building contents are likely to be affected by the fire
- Means of escape
- Occupants

When this has been done the next stage is to review the measures which will help to counter the hazards and risks identified, for example :

- presence or absence of fire detection or fire protection features
- presence of persons to counter an outbreak of fire
- proximity to a fire station
- time it will take for a fire brigade to arrive
- availability of fire-fighting water

From these factors it is possible to determine the range of risks to which the building and contents may be exposed and then to estimate the steps that can be taken to reduce the level of risk.

Possible causes of fire can be put into different categories going from unlikely (1) to probable (5). Also the consequences of the fire will be judged from negligible (1) to disastrous (5). The consequences can be put in terms of injury (bruises (1) to multiple fatalities (5)), financial (less than 1000 pounds (1) to more than 1.000.000 pounds (5)) and /or cultural significance (low impact (1) to majority loss (5)). Cultural significance can also be put in terms of the action necessary to recover from fire (preservation only (1) to no recovery possible (5)). The risk factor (R) will be equal to the probability of the fire occurring (p) multiplied by the consequences of a fire (c). The results can be plotted in a two dimensional grid showing scores 1-25, where low risk factors, medium risk factors, and high risk factors can be defined.

The aggravating factors typical to heritage are presented such as presence of voids, complex escape routes, materials, equipment or systems of unproven reliability, etc. These factors must be taken into account in the risk assessment. Ameliorating factors such as control of smoking, suppression systems, reducing visitor numbers, etc. must also be taken into account in the risk assessment.

It is stated that the adequacy of fire-fighting water is often a significant factor in the loss of heritage buildings from fire.

A chapter is devoted to managing fire safety in heritage property. It states the importance of a number of measures, among other to have a written fire safety policy, to implement a fire safety manager, to undertake a risk assessment etc. It underlines the importance of staff training for all fire safety matters. Also the importance of ongoing maintenance, false alarm management and insurance matters are pointed out.

Another chapter is devoted to managing the fire risk improvement project. It explains general guiding principles such as minimal intervention, reversibility of action etc. It continues to explain the importance of managing, and how to manage, fire safety on construction sites. It also explains general considerations that have to be taken into account because of the specifics of historic buildings.

13.1.5 The installation of sprinkler systems in historic buildings, Technical advisory note 14, Historic Scotland, Technical conservation research and educational division

This note is made to inform Historic Scotland staff and others when considering fire protection issues and the option of installing sprinkler systems. The TAN is intended to introduce the concept of sprinkler installations, outline how they work and how they may be installed in a historic building with the minimum of disruption to the historic fabric.

The first chapter of this note describes the purpose of an automatic sprinkler installation and the various types of installations. The second chapter explains the different components of a sprinkler system. Chapter three presents details relating to the installation of a sprinkler system in a historic building. Finally, in chapter four, the care and maintenance coupled with a sprinkler system is explained.

The document has five annexes: among other listing serious fires in Scottish heritage, explaining case histories of installing sprinklers, and documenting a training exercise that took place.

13.1.6 Fire Protection measures in Scottish historic buildings, Technical advice note 14, Historic Scotland, Technical conservation research and educational division

This note is made to inform Historic Scotland staff and others when considering fire risk and protection measures for historic buildings.

In the introduction of this document it is stated: "To give a building and its contents the best level of protection from fire may require a level of intervention in the fabric which is unacceptable in conservation terms. At the same time, the loss of the building from fire is unacceptable and therein lies a central dilemma for those who have to make recommendations or decisions regarding fire safety. The best form of protection is to prevent fire happening in the first place, therefore every effort should be made in terms of training, management and the removal of risk"

Part I of the technical advice note attempts to look at the particular features of historic buildings which make them more vulnerable to fire and the need to exercise the proper management of the fire protection. Part II of the Technical Advice note sets out various technical aspects of fire protection. A number of historic buildings where recent fires have occurred have been included as case studies in appendix 1. Appendix III includes legislation matters in Scotland related to heritage. Appendix IV presents a risk assessment methodology and appendix V presents a planning methodology for damage control.

13.1.7 Windmill-documents -The Netherlands

The Netherlands department for conservation have set up three relevant documents concerning fire safety in windmills.

The first document is called "Fire Protection in Mills", [Rijksdienst voor de Monumentenzorg (RDMZ, Netherlands department for conservation): *Brandbeveiliging in molens (Fire protection in windmills)*, info Restauratie en beheer nr. 20, september 2000] and was set up in 1999-2000 following the large number of fires in mills the years before. It is a general document explaining the historical background of fires in mills, including fire causes. It then presents solutions to limit the risk and the extent of a fire.

The prevention measures are for example:

- No smoking,
- Carefulness by repairs,
- Locking of doors, and
- Keeping the windmill accessible for fire services.

The mitigation measures include:

- Installation of smoke detection,
- Compartmentation, and
- Installation of fire retardant coatings on the straw.

Thereafter the repression measures are treated and sprinklers in particular, with the mentioning of different kinds of sprinklers that are applicable in mills. Finally, this booklet contains a chapter explaining the installation, the costs, and the possibility to receive subsidies for sprinklers.

The second document is called "sprinklers in mills" [Rijksdienst voor de Monumentenzorg (RDMZ, Netherlands department for conservation): Project verslag: *Sprinklers in Molens, (Sprinklers in mills)*, 1999-2000]. The booklet is the result of a project held in 1999. The goals of the project were:

- To develop new techniques and installations for fire fighting in mills,
- To gather information and knowledge about the installation of sprinklers in mills,
- To install sprinklers and fire fighting apparatus in mills without disturbing the historic character of the mill, and
- To make the results available to the mill owner and stimulate them to use the results.

The booklet contains specific information about the use for sprinklers in windmills, including descriptions of other measures that can be taken to prevent or limit the extent of a fire. It then presents a pilot project of the installation of a sprinkler and smoke detection system in a mill, including the presentation of tests of the sprinklers and the smoke detection systems. The costs of these measures are presented in a separate chapter. In the annexe a control list for fire prevention in mills is presented.

The third document available is called "Lightning Protection" [Rijksdienst voor de Monumentenzorg (RDMZ, Netherlands department for conservation): Leidraad; *Bliksembeveiligingsinstallaties, (Lightning protection installations)*, 1993] and concerns lightning protection of monuments in general and including a chapter

explicitly for windmills. It highlights specific problems concerning mills and also the danger caused by the turning parts present on windmills.

13.1.8 “Handleiding voor het maken van een calamiteiten–plan voor collectie-beherende instellingen” (Guideline how to create an incident plan for establishments with collections), Instituut Collectie Nederland

This handbook was made after the completion of the project “Haagse Pilot” aiming at the creation of incident plans for museums in the region of The Hague, The Netherlands, and was printed in November 2003.

It is a guide explaining how to create an incident plan for your own building. The incident plan should be organized according to a certain chapter structure given in the guideline. In the guideline under each chapter it is described what should be included in this chapter of the incident plan. In the annexes a number of examples of checklists, etc. are given in order to facilitate the work.

Chapter 1: Management
Chapter 2: Internal Organisation
Chapter 3: External Organisation
Chapter 4: Measures / how to react after /during an incident
Chapter 5: Escape Instructions
Chapter 6: Evacuation of collection
Chapter 7: Restoration
Chapter 8: Preventive and repressive measures
Chapter 9: Building and escape routes

This document further refers to a number of other publications / guidelines in the same subject.

13.1.9 “La prévention contre l’incendie dans les musées et monuments historiques” (Fire Prevention in museums and historic monuments), Major Jean-Yves PIRIOU, May 2003

This guideline consists of two booklets that were published in 2003 by the ministry of culture and communication concerning the fire protection of cultural heritage.

One booklet contains 120 questions concerning security of persons and goods. The first set of questions and answers explain the fire risk and fire development. The second set of questions is concerning prevention possible in buildings with public. Thereafter the evacuation of people is discussed and a chapter discussing security measures is presented. The protection of goods is then discussed and the regulations applicable for museums are clarified. Also the regulations and priorities in administrative buildings are presented. Finally, the last four sets of questions and answers concerning surveillance agents, intervention, extinguishers and first-aid are presented.

The second booklet present prevention rules that are imposed by regulations but also common sense measures. First of all an explanation is given to how an inspection can be done and what points to look at. Thereafter a number of anomalies that can be seen during inspections and how these can be solved are presented. Third of all any problems / happenings that can take place during the year of a monument are mentioned and points to be taken into account during these are presented. The second to last chapter contains information on safekeeping of cultural objects during incidents. Finally, the last chapter presents the regulations valid for museums in France.

13.2 REGULATIONS

13.2.1 Scottish regulations

According to table A-1 in Scotland the regulations on cultural heritage cover fire safety aspects. According to table A1-4a distinction is made between listed buildings and conservation areas and ancient monuments in the regulations. Below is an explanation of listed buildings, conservation areas and ancient monuments.

A) Listed buildings and conservation areas

Scotland has in the region of 46000 listed buildings. The list of buildings of special architectural or historical interest in Scotland exist to inform the work of safeguarding the built heritage and promoting its understanding. They are compiled and maintained by Historic Scotland on behalf of the Scottish ministers, in accordance with the Planning (Listed buildings and Conservation Areas) Act 1997. The planning act does not include any fire

safety considerations. A building is defined as a man made structure, from pigsties and water pumps to cathedrals. The interior of any listed building is automatically covered by the listing.

Listed buildings are divided into three categories, A, B, and C(S), where a building of class A is of international or national importance and buildings of class C(S) are of local importance.

B) Ancient monuments

Scotland has more than 6500 scheduled monuments that reflect much of the nations history, often before records were given. Examples of monuments are: Roman forts, medieval castles, abbeys, cathedrals, monuments to Scotlands' industrial heritage, and pillboxes built during WWII. Historic Scotland makes around 20 grants to private owners to help towards the repair and conservation of monuments, and works with owners and groups to improve the management of many more.

13.2.2 Portuguese regulations, Decreto-Lei n.º 426/89 - Decree Precautionary measures against fire risk in old urban areas

Section I: General

Art 1.º: Object

2 – In this context, old urban areas are sets of buildings with homogeneous characteristics that allow to consider them as representative of cultural values, namely historic, architectonic, urbanistic or merely affective whose memory shall be preserved. The competence to identify these areas belongs to the City Hall, after hearing the entities with specific competence in the fields that contribute to their delimitation and qualification.

Art 2.º: Field of application

1 – All the buildings inside old urban areas, not higher than 20 m or having more than 7 storeys, irrespective of the type of occupation.

2 – For the buildings classified as national monuments and the buildings having public value and the corresponding protection areas, the application of these measures depends on a specific authorization of the IPPAR (Instituto Português do Património Arquitectónico), after hearing the SNB (Serviço Nacional de Bombeiros, the fire services)

3 – For those buildings where the construction type or the architectonic characteristics prevent the application of some of the requirements of this decree, the City Hall shall define the adequate measures to be applied, after hearing the SNB.

Art 3.º : Execution process

The City Hall has the responsibility of taking the initiative to promote the necessary actions to improve the fire safety conditions in old urban areas.

The inspection of all the buildings and support systems of the old urban area, as well as the planning of all the necessary actions to be undertaken shall be performed by special committees working in the dependency of the City Hall or by external offices engaged for that purpose. These committees and external offices shall have an interdisciplinary nature: architecture, civil works, building systems, urban social action and fire fighting.

Section II: Reduction of the risk of fire ignition

Art 4.º Electrical circuits

Art 5.º Gas pipes

Art 6.º Smoke and gas ducts

Art 7.º Roofs

Art 8.º Work by hot points or naked flame

Art 9.° Licence for occupation

Art 10.° Education actions

Section III: Limitation of fire propagation

Art 11.° Isolating adjacent buildings

Art 12.° Isolating autonomous fractions in the same building

Art 13.° Interior compartmentation

Art 14.° Openings in internal shafts

Art 15.° Isolating plumbings

Section IV: Availability of egress means

Art 16.° General

Art 17.° Protected communication paths for common use in each storey

Art 18.° Protected stairs for common use

Art 19.° Unprotected egress paths

Art 20.° Means for emergency egress

Section V: Means for the intervention of the fire brigade

Art 21.° Points for alert calls

Art 22.° Access conditions

Art 23.° External fire hydrants

Art 24.° Fire fighting groups for local support

Art 25.° Previous intervention plans

14.2.3 Swedish law 1988:950 – law concerning heritage

This law contains a number of chapters on different kinds of heritage including one chapter on churches. The second paragraph states that church buildings and church grounds shall be maintained in order to prevent that their cultural historic value shall diminish and that their visual aspects and character are neglected.

The sixth paragraph states that all inventories of cultural historic value shall be well kept and maintained.

The seventh paragraph states that a list of all inventories mentioned in paragraph sic shall be kept.

No direct mention on the fire protection is done in this law.

13.2.4 Archiefbesluit 1995 (Regeling Bouw en inrichting archief ruimten en archiefbewaarplaatsen), The Netherlands, (Archive regulation 1995 (regulation building and layout archive rooms and archive deposits))

This regulation concerns the building and layout of archive rooms. It includes requirements concerning:

- Reaction to fire
- Fire resistance
- Climate control

- Layout of the room (distance between shelves, between shelves and heating appliances and height of shelves)
- Fire prevention:
 - o The place and number extinguishers,
 - o Eventual sprinkler installations
 - o The fire detection systems
 - o General fire prevention measures

13.3 ANALYSIS OF THE ANSWERS TO DEFINE COMMON GOALS AND OBJECTIVES

13.3.1 Regulations

The common goal of the regulations studied is (of course) to the fire protection of cultural heritage.

In the Portuguese regulations for city centres this can be divided into a number of sub-goals: - Reduction of the risk of fire ignition, -limitation of the fire propagation, -availability of egress means, -means for the intervention of the fire brigade.

13.3.2 Guidance documents

In the guidance documents a number of different points come up:

In the Swedish documents for churches the following points are mentioned; - limit ignition sources and arson possibilities, - establish order /list of rescue for objects, - point out objects sensitive to water during fire fighter operations, i.e. glass windows, - name a person responsible for safety.

In the Swedish document for fire safety of cultural heritage the following points are mentioned: - control, planning and organisation of building, - minimising fire spread, -measures to facilitate suppression, and - salvage.

In the Swedish document concerning fire protection of wooden cities the following measures to prevent fire are mentioned; - Administrative/organisational measures; -Information to public, control of electrical installations, etc. - Measures to prevent fire spread; assure suppression methods, repair old walls, etc.

In the Scottish guideline “Fire risk management in heritage buildings” the benefits of reducing the risk and consequences of fires are explained. A risk analysis is demanded in order to: identify ignition sources, fire spread sources and fire fighting capabilities. It also states the importance of management of fire safety. This document also mentions the importance of fire safety on construction sites.

In the Scottish document “ The installation of sprinkler systems in Historic buildings” the main goal is to show how sprinkler installations can be installed in historical buildings with minimal disruption to the historic fabric.

In “Fire protection measures in Scottish historic buildings” it is stated that the best form of protection is to prevent fire happening in the first place, therefore every effort should be made in terms of training, management and the removal of risk. Also measures to minimise fire spread and to enable salvage are discussed.

In three Dutch documents concerning fire safety in windmills the following points are mentioned: -fire prevention , - lightning protection, and - mitigation / repression measures, including how and why to install sprinklers.

14 Conclusion

Fire regulations /Cultural heritage regulations

In 10 out of the 13 countries that have replied to this query cultural heritage is not mentioned in the fire regulations. In six of the 10 countries, where no mention is made to cultural heritage in the fire regulations, there are cultural heritage regulations and these regulations include fire safety aspects.

The different countries have different reasons for introducing regulations. A number of countries have introduced regulations after large incidents (like the Chiado fire in Portugal) or wars. Other countries have paid more attention to already existing rules after large incidents have taken place (i.e. Italy).

There are three countries that have specific goals concerning life and health safety for cultural heritage. In all other countries these goals are stated in the fire regulations but are not specific for cultural heritage.

Property and content protection is mentioned in the fire safety rules specifically for cultural heritage in six countries that have answered to the query. The Portuguese regulations also mention continuity of function, social activities, and environmental protection specifically in the fire regulations with respect to cultural heritage.

The specific fire safety goals for cultural heritage are in most countries (where they exist) both functional and prescriptive.

A differentiation in the fire regulations with respect to cultural heritage building categories is made in some countries. As an example in Italy libraries, museums and archives are subjected to a number of extra prescriptive rules.

Analysis of the answers to define common goals and objectives:

The general goal in all countries is to ensure the fire safety of an historic building safe with minimum alteration to the historic fabric itself. In order to guarantee this, the regulations and guidance documents studied point on the importance to be involved in every stage of fire protection of cultural heritage. This means to have an integral overview of all risks of; - ignition, - fire spread, -mitigation, and -salvage and to ensure management and responsibility of risks. It is also obvious that the fire protection of cultural heritage calls for a need of performance based solutions. Prescriptive regulations for cultural heritage would imply unnecessary altering of the historic character of the building.

Guidelines

In a number of countries not regulations but guidelines were introduced after a number of fires (i.e. Windmill guidelines in the Netherlands, Fire risk management guideline, and Fire protection guideline in Scotland). Guidelines have also been created after large projects have taken place in fire protection of cultural heritage (eg. Sprinkler guidelines for windmills in the Netherlands, Sprinkler guidelines in Scotland, and protection of wooden cities in Sweden). These guidelines are usually just guidelines but can be made more official in the sense that in order to receive subsidies from different government bodies the guidelines have to be followed (as it is done for mills in the Netherlands. A number of these guidelines have been further studied in chapter 14 of this document.

International cooperation

An international cooperation on guideline and regulation level can be seen as useful. Other countries could as an example benefit from the different guidelines available in the various countries and apply them to their own specific heritage.

Annexe 1: List of countries from which answers have been received with contact person

Country	Contact Institute	Contact person	Address
Austria (A)	University of Innsbruck Institut für Stahlbau, Holzbau und Mischbau Technologie	Prof. Hans Hartl	Techniker Strasse 13 A-6020 Innsbruck, Austria Tel: +43 512 507 68 89 or +43 1 526 82 65 Fax: +43 512 507 29 04 or +43 1 526 82 66
Belgium (B)	University Ghent	Ir. Emmy Streuve	Ottergemsesteenweg 711, B-9000 GENT - Belgium Tel +32 - 9 243 77 66 Fax +32 - 9 243 77 51
Belgium (B)	Fire Brigade Bruges & Service for monuments and city views in Bruges	Cdt. Ing. Anthierens Arch. I. Leye	Brandweer@Brugge.be monumentenzorg@brugge.be
England-Wales (E-W)	Warrington Fire Research Consultants	Steve Cooper	Holmesfield Road, Warrington, UK WAI 2DS, United Kingdom Tel: +44 - 1925 655 116 Fax: +44 - 1925 644 660
France (F)	CSTB	Michel Curtat	Avenue Jean Jaures 77420 – CHAMPS-SUR-MARNE BP2, FRANCE Tel: +33 - 1 64 68 83 25 (or 83 28) Fax: +33 - 1 64 68 85 23
Germany (D)	University of Braunschweig iBMB	Reinhold Dobbernack	Beethovenstrasse 52 38106 Braunschweig, Germany Tel: + 49 - 531 391 54 88 Fax: +49 - 531 391 59 00
Greece (GR)	Aristotle University of Thessaloniki Civil Eng. Department	Prof. Kyriakos Papaioannou	Universtiy Campus P.O. BOX 429 54006 Thessaloniki, Greece Tel: +30 - 310 995793 or +30 - 310 995777 Fax: +30 - 310 995729
Hungary (H)	Npc. Quality Control and Innovation in Building (ÉMI)	Dr. Tamas Banky	Dioszegi ut 37, 1113 Budapest, Hungary Tel: 39 - 1 372 61 44 Fax: 39 - 1 372 61 28 @: tbanky@mail.emi.hu
Italy (I)	University of Venice Dept. of Architectural Construction	Prof. Ario Cecotti	Santa Croce 191 30135 Venezia, Italy Tel: 39041-2571307 Fax: 39041-5223627 ario@iuav.it
The Netherlands (NL)	TNO Building and Construction Research	Ir. Leen Twilt	Van Mourik Broekmanweg 6 2600 AA Delft, Netherlands Tel: +31 - 15 276 34 93 Fax: +31 - 15 276 30 25
Portugal (P)	Direcção Geral dos Edifícios e Monumentos Nacionais	Engº Vasco Costa Engº Luís Guedes Ramos	Address: Praça do Comércio – Ala Oriental –2º andar 1149-005 Lisboa Phone: (351) 21 8817000 Fax: (351) 21 8870101

Portugal (P)	Ministério da Cultura IPPAR – Instituto Português do Património Arquitectónico	Paulo Pereira Vice-president -IPPAR	ppereira@ippar.pt
Scotland (SC)	Warrington Fire Research Consultants	Steven Cooper	Holmesfield Road, Warrington, UK WAI 2DS, United Kingdom Tel: +44 - 1925 655 116 Fax: +44 - 1925 644 660
Spain (E)	Instituto del Patrimonio Historico Espanol	Juan A. Herraез	Antonio.herraез@ihpe.mcu.es
Sweden (S)	Fire Safety Nordic	Tomas Rantatalo	Orkestergatan 55 S-371 49 Karlskrona, Sweden Tel: 46 - 455 307 042 Fax: 46 - 455 311 688
Switzerland (CH)	Consultant Fire Engineer	Favre, Jean-Paul	Hallwylsh. 24 CN 3000 Berne 6

Annexe 2: Overview of questions and answers from each country

A1: Position of fire safety of Cultural Heritage in the regulatory system

Table A1-1: General information on regulations of fire safety of Cultural Heritage.

QUESTION A1-1		
Is Cultural Heritage addressed by the Fire Regulations of your country?	<i>Yes</i> - I, B (only if there is a change to structure), CH, E-W(not explicitly), F (only if there is a change to structure), N ^{*1} , P	<i>No</i> -A, B (mostly), D, E, F, GR, H, NL, S, SC
QUESTION A1-2		
Is Cultural Heritage addressed by other parts of your Regulatory System?	<i>Yes</i> - A ^{*2} , B, D, CH, E-W, F ^{*3} , GR, I, N, NL, S, SC	<i>No</i> - H
QUESTION A1-3		
Does the legislation on Cultural Heritage include fire safety aspects?	<i>Yes</i> - A, B, D, I, N ^{*4} , NL, SC	<i>No</i> -CH, E-W, F, GR, H, S

^{*1} According to the Norwegian fire law museums and historic buildings are to be inspected by the fire brigade every four years. On the basis of these inspections the fire brigade prescribes relevant measures to the owner with a time limit. The municipal government are required to keep lists of all historic buildings.

^{*2} There are some regulations in federal law for listed historic monuments; building regulations in provinces rarely take care of cultural heritage.

^{*3} the regulations on fire safety are under the control of different ministries depending on the use of the building

^{*4} The cultural heritage law includes a passage requiring owners to contact the cultural heritage authorities when a building is damage by fire. The cultural heritage authorities will then decide if the building, or part of the building, is going to be reconstructed.

Table A1-1^a: General information on regulatory aspects of fire safety of Cultural Heritage.

A1-1^a. GENERAL REGULATORY ASPECTS			
What is the nature of the fire safety rules for Cultural Heritage? (please delete where appropriate)	public law B, CH, D, E-W, N, I, NL, S	Civil law P	no formal status D, H, NL
Since when have these rules been in use? (please specify)	A- appr. 60 years B- 1993-1994 CH - 1950 D: (Lower saxony 1978) E-W - last edition 2000 I - 1942* ¹ NL -1988 (1995 Archives) P - 1989 S -1986-1988 SC - 1948		
Which rules were used before? (please specify)	A: Different building rules in countries of the Austrian Hungarian Monarchy B: Norms or none at all CH- ? D: General rules from around 1900 E-W -Previous edition I -none NL - Same from 1965 P -none S -? SC - old rules for scheduled monuments from 1882 (buildings mainly not in use in their original form)		
Why were they changed? (please specify if relevant)	A- WWII B- Insufficiency CH- improved rules D: Precise regulations for historic buildings E-W - to reflect changes in, amongst other, environmental requirements concerning insulation requirements I - More attention to fire safety rules has been paid after two important fires in the 80's: at the Cinema Statuto in Turin and in an antique dealing exhibition in Todi. NL -decentralisation P - Chiado fire in 1988 S: ? SC - Also listing of buildings, use of building not far from origin		
Is the field of application of "Cultural Heritage" defined in your national regulation	Yes: See question A1-5		No: See question A1-5

*¹: 'Approval of the rules for the execution, the testing and the operation of the technical installations in buildings valuable for art or history and in buildings containing libraries, archives, museums, galleries, collections and objects of cultural interest.'

Table A1-1^b: General information on organising fire safety of Cultural Heritage.

A1-1^b. GENERAL ORGANISING ASPECTS						
	Owner	Government			Management	Other
		Central	Reg.	Local		
Who is responsible for fire safety of Cultural Heritage?	A, B, CH, D, E-W, I, N, NL, P, S^{*123}	E-W, F, GR (ministry of culture), I, N, P, SC^{*1}	B, CH: (canton), I, P, S^{*3}, SC^{*2}	B, D, E-W, F, I, N, NL, P, SC^{*3}	B, CH, I, NL, P	I- When in the building there is a yard the responsible are the fire and the management.
Who sets priorities? (please tick)	B, N, P, S^{*123}	E-W, I, N, NL, P, S^{*123}, SC	B, (N), P, S^{*123}	B, D, (N), NL, P	B, P	CH- Fire authority
Who is funding? (please tick)	A, B, D, E-W, I^{*1}, N, NL, P, S^{*123}, SC	I, N, NL, P, S^{*3}	B, I, (N)	B, I, P, S^{*3}		E-W - English heritage NL -private org.

I^{*1}: The private owner can get refunds from the government, **SC^{*1}**: Historical Scotland, **SC^{*2}**: Fire Brigade, **SC^{*3}**: Building control officers **S^{*1}**: The Swedish planning and building act, **S^{*2}**: The Rescue service act, **S^{*3}**: Kulturminneslagen,

Table A1-2: Goals for society, based on the general fire regulations and specific to Cultural Heritage.

A1-2. GOALS FOR SOCIETY			
c) Which of the "goals for society" are covered by the general Fire Regulations (i.e. NOT specific to Cultural Heritage)?	goal	covered by general Fire Regulations	Specific for Cultural Heritage
d) Which of these goals are specific to Cultural Heritage? (please tick, if relevant)	<i>2.1 life and health safety</i>	A, B, CH, D, E-W, F, GR, I, N, NL, P, S, SC	CH, I, P
	<i>2.2 property protection</i>		
	- structure	A, B, CH, D, GR, I, N, P*, S	B, CH, D, I, N, NL, P, S
	- content	A, CH, GR, N, P*	CH, D, I, N, NL, P
	<i>2.3 environment</i>	A, D, GR, NL, P*	P*
	<i>2.4 continuity of function</i>		
	- business	P*	P*
	- social activity	P*	P*
	<i>2.5 others (give details)</i>		
	*- only as a consequence of 2.1		

Table A1-3: Nature of the requirements with regard to fire safety of cultural heritage.

A1-3. NATURE OF REQUIREMENTS				
Are the goals identified in table 2, expressed in functional/ performance or in prescriptive requirements? Please give examples				
(a) Goals covered by the Fire Regulations in general (i.e. NOT specific to Cultural Heritage) (please tick)	Goal	Functional/ performance requirements	Prescriptive requirements	please give example(s)
	3.1 life & health safety	(CH), D, E-W, I ^a , NL, P ^a , S	A, B, CH, I ^b , NL, P ^b , SC	E-W: Building reg. for fire are all expressed as functional requirements I ^a : The building must be provided of a safe evacuation path; I ^b : -The evacuation path must have a width e.g. of 90 cm. NL -Safe distances etc. P ^a -The structural members shall have enough fire resistance to limit the risk of collapse, namely during the egress period and the fire fighting operations. S- Alterations to a building shall be carried out with care thus paying attention to distinctive features as well as to constructional, historical, environmental and architectural values. (PBL, SFS 1987:10)
	3.2 property protection			
	- structure	(CH), I, S	B, CH, D, I	S: "Owner of building or other premises shall keep the building with efficient equipment for prevention of fire or other accidents and provide other means needed to prevent fire and limit the consequences in case of fire" (RaL, 1986:1102)
	- content	(CH)	A, CH	
	3.3 environment	D	A, NL	
	3.4 continuity of function			
	- business			
	- social activity			
3.5 other (give details)				
(b) Goals specific to Cultural Heritage (please tick)	3.1 life & health safety	(CH), I ^a , P ^a , S	CH, I ^b , P ^b	I ^a : The building must be provided with a safe evacuation path; I ^b : -The evacuation path must have a width e.g. of 90 cm. P ^a - The requirements in this regulation aim at reducing the risk of fire initiation and propagation, allowing the safe egress and facilitating the fire fighting operations. S- The general rules in the building code are relevant for alteration of cultural heritage
	3.2 property protection			
	- structure	(CH), I, P ^a , S	B, CH, I ^b , NL, P	I ^b : New furnishings must present specific fire reaction properties NL -Fire resistance, lightning protection, sprinklers P ^a - Fire resistance of beams

	- content	(CH), I ^a , P ^a	CH, I, NL, P	I ^a : Warehouses must be separated from rest of building NL-idem P ^a -Compartmentation
	3.3 environment			
	3.4 continuity of function			
	- business			
	- social activity			
	3.5 other (give details)			

Table A1-4^a: Building categories, referred to in the fire safety rules for Cultural Heritage.

4^a. SPECIFIC RULES			
DIFFERENTIATION WITH RESPECT TO BUILDING CATEGORY			
Do the fire safety rules for Cultural Heritage refer to specific building categories? (please tick and specify where relevant)	Building category	Specifically referred to	Please give reference, where relevant
	<i>Castle, palace</i>		
	<i>Church / Temple¹</i>	S	
	<i>Hospital</i>	CH	
	<i>Home (of historical person)</i>	CH	
	<i>Hotel, dwelling,</i>	CH	
	<i>Industrial building</i>	CH	
	<i>Library</i>	I, NL	I- President of the Republic's Decree n. 418, 30th June 1995 NL- Regulations concerning archives (1995)
	<i>Market building²</i>		
	<i>Monastery</i>		
	<i>Monument</i>		
	<i>Office, school</i>	CH	
	<i>Stadium</i>	CH	
	<i>Theatre / Cinema</i>	CH	
	<i>Windmill</i>	NL	Informal rules
	<i>Other Building - Please specify</i>	A- general CH- Museums F- I- Museum I- other NL -Top 100 list and blue shield P- Every building inside historic centres SC- Distinction made between listed buildings, ancient monuments and conservation areas. S-All Cultural historic buildings owned by the state	A- objects are individually treated with respect to the owner by "mittelbare Bundesverwaltung" (indirect Federal Government administration) and building regulations of the provinces are used, also other authorities are included. I- Museums: Cultural Heritage Ministry Decree n. 569, 20th May 1992 I- Other: All the buildings belonging to Cultural Heritage must fulfil general requirements with regard to fire safety in relation to the relevant fire risk. The buildings belonging to Cultural Heritage used as museums, libraries and archives must fulfil specific rules containing also prescriptive requirements; while for all the other utilisation they must submit to Fire Regulation in general (Derogation from the rules are provided for the ways of carrying out, but not for the fire safety level to reach). NL-special care taken P- DL 426 /89 (Decree) - Fire safety measures for historical centres S- A risk analysis should be made for all these buildings, however not looking at the personal safety since these rules are already available.

¹ Including mosque, synagogue.

² Including shopping malls, shops.

Table A1-4^b: Historical sites, referred to in the fire safety rules for Cultural Heritage

A1-4^b. SPECIFIC RULES			
DIFFERENTIATIN WITH RESPECT TO HISTORICAL SITES			
Do the fire safety rules for Cultural Heritage refer to type historical sites? (please tick and specify where relevant)	Site category	Specifically referred to	Please give reference, where relevant
	<i>City</i>	A, P	A-most of the province capitals P- Historical zones - <u>World Heritage</u> : Angra do Heroísmo; Évora; Sintra (historical centre); Santarém (application) DL 426/89 (Decree) – Fire safety measures for historical centres
	<i>District</i>		
	<i>Open air museum</i>		
	<i>Other - Please specify</i>		

Table A1-4^c: Building contents, referred to in the fire safety rules for Cultural Heritage

A1-4^c. SPECIFIC RULES			
DIFFERENTIATIN WITH RESPECT TO BUILDING CONTENTS			
Do the fire safety rules for Cultural Heritage refer to the type of contents? (please tick and specify where relevant)	Content category	Specifically referred to	Please give reference, where relevant
	<i>Archaeological / historical objects</i>		
	<i>Art objects</i>	A	Museums (to be checked)
	<i>Books / Archives</i>	A, I, NL	A: Nationalbibliothek (to be checked) I: President of the Republic's Decree n. 418, 30th June 1995 NL: Archive regulations
	<i>Films / Photographs</i>	A	Filmarchiv (To be checked)
	<i>Other - Please specify</i>		

Table A1-5: Organisation of fire safety of Cultural Heritage in practice.

A1-5. ORGANISATION IN PRACTICE						
Is there a common practice in your country? (please delete where appropriate)	Yes: A, B, CH, D, F, H, I, NL, P, S				No:	
Are there guidance documents concerning fire safety of Cultural Heritage? (please specify)	<p align="center"><u>YES</u></p> <p>A: Bundesdenkmalamt CH: E-W: Documents from English heritage and CADW (Wales) provide guidance only and are not mandatory E: The Instituto del Patrimonio Historico Espanol publishes guidelines with recommendations about fire detection and fire suppression systems. These guidelines are based on recommendations of international organisations such as Icomos. F: Yes, for buildings or contents under the control of the ministry of culture. GR: For buildings or contents under the control of the ministry of culture. N: The Directorate for Cultural Heritage has produced guidance documents on emergency lighting, automatic fire extinguishing systems, fire protection strategies etc. NL: Various publications from the Netherlands department of conservation, among others; Sprinklers in mills, Lightning protection installations, Fire protection in windmills. A publication from Netherlands Institute for cultural heritage: Guideline for making a calamity plan. P: Specific guidance documents applicable to specific buildings where the fire risk is higher, such as National Palaces of IPPAR (but not as a general rule) (*) S: "Fire Safety in Cultural Heritage Buildings", "Fire safety in wood-cities" Handbooks made by Rescue Services Board and National Heritage Board, "Protecting the church against fire and theft" Handbook made by the National Heritage Board. SC: Fire protection measures in Scottish historic buildings, (TAN 11), The installation of sprinkler systems in historic buildings (TAN 14), Fire risk management in heritage buildings (TAN 22)</p>				<p align="center"><u>NO</u></p> <p>B, D, I, H: There is no guidance document existing in this area. In the practice in <u>every case</u> the National Office for the Protection of Ancient Monuments (OMVH) determines individual fire safety requirements (asks the opinion of local or higher level Fire Authority). These requirements have to be followed compulsorily by the owners, designers, building authority etc. (OMVH is a very strong authority.)</p>	
Is the field of application of "Cultural Heritage" defined in your national regulation?	<p><u>Yes</u> A: Venice Charta, 1964 B: CH: In the fire regulations D: GR: There are details definitions on the ancient monuments and the later movable and steady monuments where the public law is applied. I: The field of application of 'Cultural heritage' consists of all the things of historic, artistic, demo-ethno-anthropologic, archaeological, archivist and book interest. NL: As in annexe 3 P: DL 120/97 (Decree) – Defines the nature, field of action and responsibilities of IPPAR S: Kulturminneslagen KML</p>				<p align="center"><u>No</u> E-W, H, N</p>	
	Owner	Government			Management	Other
		Central	Reg.	Local		
Who is responsible for fire safety of Cultural Heritage? (please tick)	A, D, E-W, F, H, I, P, S	E-W, F, H, I, P	F, I, P	B, D, E-W, F, I, P	I, P	H- OMVH CH: Cantonal fire authority
Who sets priorities? (please tick)	P, S	A, E-W, F, H, I, P	A, F, P	A, B, F, P	P	CH: Cantonal fire authority
Who provides funding? (please tick)	A, B, D, E-W, F, H, I, P	A (sometimes) , F, H, I, P	A (sometimes) , B, F, H, I, S	A (sometimes), F, H, P, I		E-W: some available from English heritage

<p>Is there any specific role for the insurance companies with regard to fire safety of Cultural Heritage? (please specify)</p>	<p>A: No B: No CH: ? D: By change or misuse insurance may expire. E-W -Only with regards to protection of property. Also extra measures may be required F: If French state is the owner, it is in charge of the risks and insures the building. Private owners have to insure the property through insurance companies. GR: Occasionally H: NO I: NO N: UNI fondet, a foundation associated with one of the major insurance companies, has been funding fire protection of several cultural heritage properties. NL: NO P: The general laws in insurance policies concerning fire apply only to the private owners as overall insurance related to the property and ownership (compulsory) in all buildings, including those which have been “classified” as cultural heritage (for instance, buildings within historical centres or zones) S: The Swedish Church has an insurance company that specialises in the insurance of churches. They also give out booklets and spread information concerning the protection of churches. SC: by reduction of premies</p>
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A2: IDENTIFICATION OF BODIES IN CHARGE WITH FIRE SAFETY OF CULTURAL HERITAGE

Table A2-1: Specification of the involvement, itemised according to building categories

A2-1: INVOLVEMENT IN CULTURAL HERITAGE: DIFFERENTIATION WITH RESPECT TO BUILDING CATEGORIES						
Please indicate - nature - level and - scope of the involvement of your organisation in Cultural Heritage. (please tick)	Building category	Government and governmental controlled initiatives (please tick, where relevant)			Government supported (please tick)	Other (please specify)
		central	regional	local		
	<i>Castle</i>	A, GR, H, P		B, D	A, P	H: OMVH
	<i>Church / Temple³</i>	H, P	A: (sometimes)	B, D	A : (sometimes), GR, P	A: church E-W: Insurance H: OMVH SC: Church of Scotland, Episcopal Church etc.
	<i>Hospital</i>	A, E-W, GR, SC: (National health service)		B, D		
	<i>Home (of historical person)</i>	E-W, GR, P		A, B, D, H	P	H: OMVH SC: Historic Houses Association, Architectural Heritage Society of Scotland
	<i>Hotel, dwelling, palace</i>	E-W, P		A, B, D, E- W, H	P	GR: private H: OMVH
	<i>Industrial building</i>	E-W		A, B, D		GR: private H: OMVH, church
	<i>Library</i>	A, E-W, H, P, SC: (Scottish Libraries and Information Council)		B, D, E-W, GR, H	A, I, P	H: OMVH
	<i>Market building⁴</i>	E-W		B, D		GR: private H: OMVH
	<i>Monastery</i>	H, P	A	B, D	P	A: Church E-W: Exempt from all legal fire requirements H: OMVH, Church
	<i>Monument</i>	A, E-W, GR, H, P		B, D, H	P	H: OMVH

³ Including mosque, synagogue, etc.

⁴ Including shopping malls, shops, etc.

	<i>Office, school</i>	E-W, P		B, D, GR, H, SC: Local Authority Education Departments	I, P	H: OMVH
	<i>Stadium</i>	E-W, GR		B, D, H		H: OMVH
	<i>Theatre / Cinema</i>	A, E-W, H		A, B, D, GR, H		H: OMVH SC: Theatre history group
	<i>Windmill</i>			B, D, H		E-W: Insurance GR: private H: OMVH
	<i>Other Building - Please specify</i>					

A: Castle of Schönbrunn may be a good example, to be completed on request

E-W: The England and Wales Building Regulations apply to all buildings but does not explicitly mention heritage or historic buildings. These regulations apply to all new building work, material alterations and material changes of use. The guidance documents do recognise that heritage properties may present particular difficulties and does, therefore, recommend that a fire-engineered approach may be the only suitable method of arriving at a satisfactory solution. There are other pieces of legislation that also apply, but none explicitly mention heritage or historic buildings, once again, they apply to all buildings by type or occupancy characteristics rather than by age.

H: National Office for the Protection of Ancient Monuments (OMVH)

I: IUAV is a public university mainly supported by the Government. IUAV has direct responsibility on fire regulations to be fulfilled inside the building (an old Monastery) as a School as well as a Library. IUAV is the Owner and the Manager at same time. External Controller is the local Representative (Commander) of the National Body of Fire Brigades, that depends directly from the Interior Ministry of Italy. The National Body of Fire Brigades controls every building in Italy –concerning fire safety- no matter if it is part or not of the Cultural Heritage. The Superintendent to the Cultural Heritage –locally based- may argue with the Fire Brigades local Commander, but final decision is to that last one.

NL: Organisations in charge: central: Netherlands Department for Conservation (RDMZ), local: each community has a “monument bureau” acting as contact point for cultural heritage matters; its size and authority depends on number of monuments in that community.

S: Comment concerning A2-1 to A2-2: In Sweden the National Heritage Board (Riksantikvarieämbet), has the national responsibility for control of the listed (byggnadsminnesförklarade) cultural heritage in Sweden. On the regional plane the control is governed by the county administrators environmental delegation. These organisations are helped by the cultural heritage law (KML). Also the local government is responsible, through the city architect (or similar) or the local conservator, for the local governing of the cultural heritage with the help of the planning and building act. Concerning historical places that are not listed, the National Heritage board, the county administrators, and the regional museums are involved for advice and remittance.

SC: Guidance in the form of Technical Advice Notes is provided on the fire protection of historic buildings. These are referenced, and hence given status, by the *Memorandum of Guidance on listed buildings and conservation areas*, the document that fleshes out the Planning (Listed Buildings and Conservation Areas) (Scotland) Act 1997. There is no distinction made in the Memorandum between the fire protection of different building categories.

Table A2-2: Specification of the involvement, itemised according to type of historical site

A2-2: INVOLVEMENT IN CULTURAL HERITAGE: DIFFERENTIATION WITH RESPECT TO HISTORICAL SITES						
Please indicate - nature - level and - scope of the involvement of your organisation in Cultural Heritage. (please tick)	Historical site	Government and governmental controlled initiatives (please tick, where relevant)			Government supported (please tick)	Other (please specify)
		central	regional	local		
	<i>City</i>	E-W, H, P	B	A, B, D, H	A, B, P	H: OMVH
	<i>District</i>	E-W, SC: National Parks	A, B	D, H		H: OMVH
	<i>Open air museum</i>	E-W	B	A, B, D, H, SC: Local authorities eg Highland Council for Highland Folk Park		E-W: Insurance H: OMVH SC: Independent Museums eg Auchindrain Open Air Museum
<i>Other (please specify)</i>						

A: addresses: see page 3, rules under development: Remarks: additional information may be given by:
Dipl.-Ing. Wolfgang THOMA, OIB Österreichisches Institut für Bautechnik, Schenkenstraße 4, A –
1010Wien; Senatsrat Dipl.-Ing. Ferdinand SCHMID, Nordbahnstraße 2/20 , A – 1200 Wien, Tel.: +43
1 9581289, +43 664 4614619, ferd.schmid@chello.at;
Dipl.-Ing. Irmgard EDER: edi@m37.magwien.gv.at , Bundesdenkmalamt, Vienna / Austria

B: If the owner wants a premium he needs to follow the prescriptions of Ministry of Monuments and
Landscapes. An owner of a protected monument (cf. blue shield) can't change without the fiat of this
Ministry.

Government controlled: protected monuments

Government supported: cultural heritage (not protected) – premiums for restorations/renovation

E-W: Planning and development regulations apply to all areas and sites. Heritage and historic sites are
explicitly deal with and the planning of new, additional buildings etc is strictly controlled.

NL: Complex of buildings is considered as one monument; specific requirements in zoning plan; no
specific rules written out.

Table A2-3: Specification of the involvement, itemized according to type of building content

A2-3: INVOLVEMENT IN CULTURAL HERITAGE: DIFFERENTIATION WITH RESPECT TO BUILDING CONTENTS						
Pls. indicate - nature - level and - scope of the involvement of your organisation in Cultural Heritage. (please tick)	Historical site	Government and governmental controlled initiatives			Government supported	Other (please specify)
		central	regional	local		
	Archaeological/ historical objects	A, H, P	B	B, D, H	A, B	E-W: Insurance H : OMVH
	<i>Art objects</i>	A, GR, P	B	B, D, GR	A, B, GR	A: owner E-W: Insurance SC: Scottish Museums Council
	<i>Books, archives</i>	A, GR, P	B	B, D, GR	A, B, GR	E-W: Insurance SC: National Libraries of Scotland, Scottish Records Office
	<i>Films/ photographs</i>	A, GR, P	B	B, D, GR	A, B, GR	E-W: Insurance SC: Royal Commission on the Ancient and Historical Monuments of Scotland
	<i>Other (please specify)</i>					E-W: Insurance

E-W: These matters are only dealt with by private insurance companies. There are no mandatory rules that deal with building contents.

NL: The RDMZ (The Netherlands department for conservation) has no responsibility for the building content, except for cultural items, which are specific for the building (e.g. church benches, altars, etc.). In The Netherlands the following special services exist (like RDMZ), also belonging to the Ministry of OC&W (Education, culture and science):

ICN (Instituut Collectie Nederland), The national institute for the management and conservation of movable cultural heritage.

ICB (Inspectie Cultuur Bezit), "the inspection for cultural property", undertakes inspections of national collections, formulates the law of conservation of cultural property, recuperates and restores Dutch cultural heritage.

S: The responsibility for building contents is with the owner of the contents. For non-private objects the responsibility lays, on a national scale, with one of the state museums and on a local scale with one of the regional museums.

Annexe 3: Definition of Cultural Heritage in the Netherlands

The Dutch Monuments and historic buildings act, 1988 (Annexe 3):

b. Monuments:

1. All objects / property that have existed for at least 50 years and that are of general interest because of their beauty, their meaning for science, or their cultural historic value.
2. Ground which is of general interest because of items on it such as stated above.

c. Archaeological monuments: The monuments, stated in b.2.

d. Protected Monuments: Non-movable monuments that are registered under this law.

e. Church Monuments: Non-movable monuments that are owned by a church community, an independent part of it, a body in which the church community is a part of, or another community on spiritual basis and which only or for a major part is used for collective practising of a church ceremony or life convictions.

f. City or village sights: groups of non-movable items that are of general interest because of their beauty, their mutual spatial or structural relationship, or their scientific or cultural historic value and in which groups of one or more monuments is present.

Annexe 4: Country abbreviations used in report

A	Austria
B	Belgium
BR	Brazil
CH	Switzerland
D	Germany
DK	Denmark
E	Spain
E-W	England Wales
F	France
GR	Greece
HK	Hong Kong
I	Italy
IC	Iceland
IR	Ireland
JP	Japan
L	Luxembourg
M	Moldavia
N	Norway
NL	The Netherlands
P	Portugal
R	Romania
S	Sweden
SC	Scotland
SI	Slovenia
Sing	Singapore
US	United States