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Advice to Theatre Owners and Managers regarding Suspended Fibrous Plaster Ceilings; Survey, Certification, Record Keeping etc.

Introduction:

1.1 This guidance

This guidance is primarily directed to operators and employers who manage theatres which have suspended fibrous plaster ceilings comprised of materials susceptible to damage from water ingress, vibration, impact, overload and age.

A suspended fibrous plaster ceiling is a ceiling which hangs below the structural framework of a building with a gap in between the two and is made of fibrous plaster, a form of lightweight construction using cast plaster generally found incorporating timber laths and hessian scrim.

The purpose of this document is to provide good guidance to operators and employers as well as plaster inspectors and structural engineers on how to inspect, certify and record the condition of such ceilings within their premises.

Suspended fibrous plaster ceilings should be inspected as to their condition by competent plaster inspectors and structural engineers to ensure as far as reasonably practicable that the premises are safe for public occupation. Due regard should be given to the often complex circumstances of individual premises with construction materials and methods, overall design and the maintenance regime being taken into account. The need for comprehensive understanding and inspection of all elements of the suspended fibrous plaster ceiling and its structure means that there may be omissions in some inspection and maintenance regimes, surveys and records existing prior to the issue of this guidance which will need to be addressed.

Many theatres in the UK were built with suspended fibrous plaster ceilings above the auditorium as well as in public spaces such as foyers. These tend to be unique to the individual premises by way of design, workmanship, form, integration and materials. Not all theatre ceilings or parts thereof are constructed using suspended fibrous plaster and those which are not are not covered by this guidance.

Of particular concern in suspended fibrous plaster ceilings is the use of plain (unreinforced) hessian wadding ties to support ceiling structures. As it is possible these may fail due to age alone, they should be considered as deleterious materials which are likely to require reinforcement. If these are found to be present their condition should be ascertained and any necessary works to ensure safety undertaken as soon as reasonably practicable. Where it is not reasonably practicable to inspect any part of a suspended fibrous plaster ceiling or structure, it

should be presumed in the absence of verifiable evidence to the contrary that plain (unreinforced) hessian wadding ties have been employed.

The Health and Safety at Work etc Act 1974 places duties on employers and the self-employed to ensure, so far as is reasonably practicable, that people are not exposed to risks to their health and safety while on their premises. This duty covers employees, contractors and the public using a theatre. Other duties within this legislation require those in control of premises to take measures to ensure, so far as is reasonably practicable, that all plant and substances within their premises are safe and without risk to health. Theatre operators and employers should appoint competent people to assist with their health and safety duties. See below for further guidance on competence.

1.2 The principles:

So far as is *reasonably practicable*:

1.2.1 The structural parts supporting suspended fibrous plaster ceilings should be inspected by and a report confirming their satisfactory condition be provided by a competent structural engineer.

1.2.2 The plaster parts of a suspended fibrous plaster ceiling should be inspected and certified as satisfactory by a competent plaster inspector.

1.2.3 All suspended fibrous plaster ceiling surfaces should be inspected from both above and below unless access is not possible despite having taken all reasonably practicable steps to provide it, in which case other safety measures should be considered as discussed below.

1.2.4 In order to determine the source(s) of any past, present and future water ingress as well as building movement, all those parts of the theatre where water ingress and movement relevant to a suspended fibrous plaster ceiling are possible should be inspected including the relevant exterior parts of the building.

1.2.5 Particular attention should be paid to the condition of the attachment of all supporting structural elements of the suspended fibrous plaster ceiling to each other and to the primary structure of the building.

1.2.6 Suspended fibrous plaster ceilings should be inspected regularly according to the conditions found. Each inspection report should make recommendations for individual timescales for re-inspection of those parts of the building covered in the report.

2. Recommendations for theatres containing suspended fibrous plaster ceilings:

2.1 Baseline survey:

2.1.1 Baseline survey: A thorough one-off survey of existing conditions should have been or should be carried out by a competent structural engineer and by a competent plaster inspector. The surveyors between them should ensure that a

complete survey of all relevant parts has been carried out. All parts of suspended fibrous plaster ceilings are to be surveyed and inspected from above and below wherever access is reasonably practicably achievable.

2.1.2 Purpose of the baseline survey: The baseline survey should adequately record the condition of those internal and external parts of the building associated with suspended fibrous plaster ceilings with reference to any existing and potential water ingress and the structural integrity of the suspended ceilings. This should be undertaken by the competent structural engineer and plaster inspector to produce a clear, detailed, documented record (including sketches and photographs) of the construction of the ceiling and how it is supported from the main structure of the building.

2.1.3 Guidance on baseline survey contents: The method of the survey and the extent of the matters requiring inspection should be thorough and detailed in the context of the construction, size, age and condition of the building. It is recommended that operators and employers consider with their structural engineer and plaster inspector which areas may be relevant to the inspection of the suspended fibrous plaster ceiling. Complex ceiling and structural arrangements are likely to exist and a complete assessment of their construction and integration should be provided.

2.1.4 Baseline survey outcome: The outcome of the baseline survey is to produce detailed plans, drawings and photographs of suspended fibrous plaster ceilings from above and below where reasonably practicable that clearly indicate the main primary supporting structure(s) along with the secondary ceiling structures, where the suspended elements are located and how they are all connected to each other. Making reference to the current asbestos survey, the plans etc. should be annotated in such a way as to enable theatre operators, employers, contractors, plaster inspectors and structural engineers to be absolutely clear as to which part they are referring or describing. Sketches and photographs should be used. When the baseline survey has been completed, it should comprise of condition reports, plans, drawings, photographs, sketches, notes etc., with any requirements for remedial works and their particular time scales carefully noted and a certificate in accordance with paragraph 2.13 below.

2.2 Access:

To enable access to ceilings from above or below, inspection hatches, platforms or other means of observing ceilings should be considered. In any case where it is not reasonably practicable to gain access to a ceiling from above or below, methods to limit the fall of any plaster to a distance that will not cause damage to the public may need to be employed and must be considered. Until any such necessary methods are employed, the ceiling should be regularly monitored for changes clearly visible to the eye and the advice of a plaster specialist sought as to any interim measures that are necessary.

2.3 Unreinforced Wadding Ties:

If it is not reasonably practicable to gain access to a suspended fibrous plaster ceiling from above or below, it should be presumed that unreinforced hessian wadding ties may have been used, in the absence of verifiable evidence to the

contrary. However, a proportionate approach to assessing the risk posed by the possible use of unreinforced hessian wadding ties should be taken. A competent plaster inspector may be able to advise on the likelihood of the use of unreinforced wadding ties given the evidence visible in a directly related location. Ceiling elements of small area and weight suspended at low height over less densely occupied locations will represent less risk than large areas and weight suspended at height over locations of dense occupation. If plain (unreinforced) hessian wadding ties have been found to be present and there is evidence of failure in any, consideration should be given to the consequences of further failures. This consideration should include the advice of a competent structural engineer. The employment of a method to maintain the safety of the ceiling such as netting should be considered. This may involve an interim measure while permanent remedial works are completed.

2.4 Obstructions to inspection:

Any obstructions to the visual inspection of suspended fibrous plaster ceilings should be removed wherever reasonably practicable. This would include, inter alia, fibrous insulation and may require the (temporary) removal of floors and the like from above. In circumstances where physical inspection is not possible due to lack of space, remote viewing devices should be considered if they will provide significantly improved inspection opportunities.

2.5 Cleanliness of ceiling voids:

Ceiling voids (the volumes above ceilings) should be kept clean and free of debris. The cleanliness should be of such a standard as to allow reasonable visual inspection of all attachment points but cleaning should not be carried out in such a manner as to cause damage to the suspended fibrous plaster ceiling and the associated structure(s). The voids should be well lit and consideration given to emergency lighting.

2.6 Caveats and Disclaimers:

The conclusions and expert advice as to matters of fact contained in inspection reports and surveys provided by structural engineers and plaster inspectors should be expressed as clearly and categorically as possible. To the extent that inspection reports or surveys contain expert opinion, that opinion should be clearly identifiable as such and, where appropriate, should be justified by reference to identified matters of fact and, if necessary, specified assumptions. The structural engineers and plaster inspectors should request, and theatre operators and employers should ensure, as far as reasonably practicable, that the structural engineers and plaster inspectors are given access to all areas necessary for the purposes of carrying out the relevant inspection and where access is not reasonably practicable that other measures are taken as described in this guidance. The structural engineer or plaster inspector carrying out the inspection or survey should not seek to limit or exclude liability via a general or blanket limitation.

2.7 Re-inspection intervals:

The baseline survey and each subsequent inspection should give recommendations as to the maximum interval before the next inspection of the various suspended fibrous plaster ceilings in the various parts of the premises. The intervals recommended for the structural parts may differ from the intervals recommended for the various plaster parts. Inspections subsequent to the baseline survey should be

carried out with reference to the baseline survey and in accordance with this guidance. The interval(s) prior to the next inspection should be determined independently by the structural engineer and plaster inspector in relation to their respective areas of inspection.

2.8 Maintaining Records:

Theatre operators and employers should compile and maintain a register of all suspended fibrous plaster ceilings in their theatre comprising all surveys, inspection reports, plans, dated photographs, maintenance records, permits to work and access records. All areas within the theatre covered by the ceiling inspection/certification regime should be cross-referenced to the current asbestos survey. The baseline survey should form the basis for all future inspection and maintenance of suspended fibrous plaster ceilings and the plaster inspectors and structural engineers should request and theatre operators and employers should make available all records on subsequent inspections.

2.9 External parts:

The suspended fibrous plaster ceiling management system should include regular inspection of the external roof and roof void above for signs of disrepair and water ingress including reactive inspection after heavy storms and any adjacent building works. The satisfactory maintenance of the roof should be considered a high priority.

2.10 Management System

Theatre operators and employers should have in place a robust management system for the regular visual inspection of suspended fibrous plaster ceilings for obvious signs of damage or disturbance that ensures any such obvious damage or disturbance is reported to and reviewed by a plaster inspector and if necessary a structural engineer to establish its priority as soon as is reasonably practicable. An appropriate member of the theatre operator/employer's staff should be present, where safe to do so, during the inspection of ceilings and structures by the competent plaster inspectors and structural engineers.

2.11 Ceiling voids:

Ceiling voids, in particular those above an auditorium, should be classified as "Permit to Work" areas, and access granted only to those persons issued with such a permit. Records should be kept of all persons who have access to ceiling voids and the purpose of their presence. A recommended form of Permit to Work is set out below.

2.12 Structural Works and other equipment installation:

Any structural works or additions of suspension points or the installation of any equipment that may impact a suspended fibrous plaster ceiling, particularly that inducing vibration, should only be undertaken with the prior approval of a structural engineer.

2.13 Ceiling Certificates:

Ceiling 'certificates' should be obtained as confirmation and evidence that the premises may be safely opened to the public in accordance with the latest guidance in the Technical Standards for Places of Entertainment. See section M1 Certification.

2.14 Competent persons:

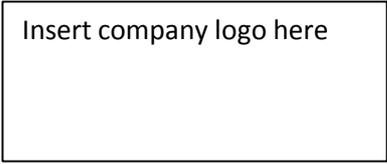
Inspection, repair work and maintenance should be carried out by competent persons of sufficient demonstrable experience (both in the technical aspects of the work and compliance with current health and safety regulations) in the inspection and maintenance of theatres with suspended fibrous plaster ceilings. Plaster specialists do not generally hold recognised professional qualifications or industry accreditation. It is recommended that theatre operators and employers consider the contents of Appendix B: “Assessment of Plaster Specialist Competence” when appointing a plaster specialist.

2.15 Listed premises:

Repairs to ceilings and means of access including access and inspection hatches in statutory designated listed premises may require Listed Building Consent depending on the method and extent of work proposed.

Whilst all due care has been taken in the preparation of this document, the Association of British Theatre Technicians together with its members, officers and employees cannot be held responsible for any omission or error contained herein or for any damage or injury arising from any interpretations of its contents.

Permit to Work



Authorisation for the works described herewith in only the locations specified below is granted only when this permit is signed on behalf of the Theatre Management.

Contracting Company Name: _____

Number of Personnel Entering Void: _____

Names of Personnel: 1. _____ 2. _____ 3. _____

Signed On Behalf of Company: _____ Date: _____

Void Awareness Course Completed: Yes/No

Name of Void Guide on behalf of *(insert name of theatre)* Theatres: _____

Asbestos Register Checked: Yes/No

Location Code in Asbestos Register: _____

Location Name: _____

Radio Communication with Stage Door: Yes/No Stage Door Radio Number: _____

Time Work Started: _____ Expected Completion Time: _____

Risk Assessment / Method Statement attached: Yes/No

Description of work being carried out:

Comments after Completion of Works including any observations about the condition of structure or ceiling:

Time work was completed: _____

Key for Void Returned: Yes/No

Signed on behalf of *(insert name of theatre)* Theatres: _____ Date: _____

Appendix B- Assessment of Plaster Specialists' Competence in inspection and/or other services

In any works, including inspection, to be carried out on or involving suspended fibrous plaster ceilings, it is essential that the contracting theatre can demonstrate that all appointed plaster specialists have sufficient competence to undertake the project. The training, skills, experience and knowledge needed to achieve the competence required will depend on the hazards and risks present and the complexity of the work. Plaster specialists are currently unlikely to hold recognised professional qualifications or industry accreditation. In the absence of such third party assurance, theatres are expected to undertake independent assessments of the competence of plaster specialists for the scope of services they wish to contract.

Competence is defined by the Health & Safety Executive as the combination of training, skills, experience and knowledge that a person has and their ability to apply them to perform a task safely. Other factors, such as attitude and physical ability, can also affect someone's competence.

The Health & Safety Executive provide full guidance in relation to assessing competence at www.hse.gov.uk/competence/what-is-competence.htm

In relation to the appointment of plaster contractors, examples of the steps you could take include:

- Identify in your scope of works all services you want the contractor to do and consider the health and safety implications of the works.
- Provide potential contractors with this information and ensure they know and understand what is expected.
- Ensure contractors who may supply plaster inspection or other services have read and understood this guidance.

In relation to the appointment of plaster specialists for either inspection or other services, examples of the questions you could ask include:

- What arrangements will you have for managing the work? Who will be responsible; will subcontractors be used and what evidence can be provided of their skills, experience, training and knowledge; how will the work be supervised; what checks do you make on equipment and materials?
- Do you have a written health and safety policy? What is your recent health and safety performance including accidents and ill health over the last 5 years? Has the HSE ever taken action against you? What health and safety information and training do you provide for your workers?
- What expertise do you have for working with suspended fibrous plaster ceilings in historic buildings including: training qualifications; details of experience (including working in confined access areas, working at height and hot works); references; risk assessments carried out; method statements developed and reports written?
- Do you have appropriate insurance and if so, to what limit?
- Are you members of a trade association or professional body?
- Will you be producing a safety method statement for the job?