The Theatres Trust

Technical Backstage Survey 2009

Survey by the Historical Research Committee of the Association of British Theatre Technicians for The Theatres Trust

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1 Introduction

For most people the backstage of a theatre is a mysterious and magic place, full of technical jargon and weird and wonderful machinery. The reality for those who work there is somewhat more prosaic, and words like cramped, dark, and even dangerous, are more likely to come to mind. The other most likely epithet, from either side of the house curtain, is likely to be 'antiquated'. This project arose from the work of The Theatres Trust in considering proposals to modernise these areas, and its realisation that the backstage areas of theatres often contain things that are actually of technological or even scientific interest.

Fortunately the Trust is able to harness the advice of a group of experts whose knowledge of this subject is unrivalled. Since 1995 the members of the Historical Research Committee of the Association of British Theatre Technicians (ABTT HRC) have been regularly advising the Trust on Planning and Listed Building applications that relate to backstage areas wherever it appears that important material may be at risk. Their approach to the potential loss or removal of an item like the historic revolving stage at the London Palladium Theatre has been the same as that of the Trust – totally pragmatic – and, working together, both organisations have established procedures and precedents for dealing with such requests in a sensitive and constructive manner. Each party recognises that theatres constantly need to change and adapt, and that if they were solely preserved as museum pieces they would surely stagnate. But material that is essentially technological in its nature becomes obsolete far more quickly now than in the past, and historic material is now being lost at an alarming rate. Some recent examples are given at Appendix C. And whilst there is no desire to stand in the way of change, with hindsight sometimes in the past uniquely important machinery and equipment and the records of it have been lost through unintentional lack of knowledge, rather than by necessity.

It also seemed important to have access to and some understanding of the theatre technical design innovations of yesteryear if the public and the engineers and designers of tomorrow are to understand fully the development of theatres' design. So it was decided to see whether it would be possible to draw up and agree a short-list or Register of remaining items of historically important or significant items of technical material in existing theatres. The collective experience of the Trust and the ABTT HRC over the last 12 years has demonstrated the need to know what material is out there and what is important. Then if something does need to be moved or altered it can at least be properly recorded and/or salvaged. And if the material concerned is not important people are able to know quickly. Leading on from this, there needed to be a methodology for recording the items concerned and to see whether a system could be devised whereby particularly important material might be given some degree of protection.

Furthermore, The Theatres Trust is often being called upon to facilitate historic building recording surveys in relation to conditions attached to planning consents. These conditions are usually imposed by the Local Authority Archaeologist (or the Archaeological Service) and/or the Local Authority Conservation Officer. The Rating system used for this Survey has been devised with reference to guidelines for recording historic buildings that have been agreed and set down by the appropriate National and professional bodies. Further details are set out at Appendix D.

2 Methodology for the Survey

This project was facilitated by Peter Longman in his capacity as a Consultant to The Theatres Trust. The members of the ABTT HRC, under their Chairman Roger Fox, acted as a Steering Group and met on 11 occasions between September 2006 and October 2007. Their knowledge and expertise provides the content of this Survey and the Trust is most grateful to the ABTT for its support in this venture.

The initial brief was drawn up between The Theatres Trust and Roger Fox on behalf of the HRC. Requests for further advice, particularly on individual items on the draft lists, were sent out on behalf of the Steering Group to around 30 individuals, 20 of whom made significant responses.

An initial list of 109 items was drawn up for the HRC to consider and this was gradually expanded to a maximum of around 240 and then refined down to a Register of 176 by the HRC as comments and suggestions were received from those consulted. The draft text of this Survey was reviewed regularly by members of the HRC, and a small number of people outside the organisation were invited to comment on it before it was finalised.

Lists of the members of the HRC who participated in the project and all those outside who had a significant input are given in Appendix E. Without their efforts and enthusiasm this project would simply not have been possible, and thanks are due to them all. Particular thanks are due on behalf of the Trust and

the ABTT to Roger Fox, Joe Aveline, Brian Legge and Peter Longman, who together formed the nucleus of the group.

3 Objectives of the Technical Backstage Survey

The following objectives were agreed by The Theatres Trust as the terms of reference:-

1 Prepare an agreed and authoritative list of items of historically important technical material in existing theatres throughout the UK;

2 Ensure that equipment and materials most at risk are identified;

3 Offer appropriate references for incorporation into Statutory List Descriptions for existing theatres, both in use and not in use, and thereby support the work of English Heritage and the appropriate bodies in Scotland, Wales and Northern Ireland;

4 Help inform public understanding through education and interpretive practice, using in situ examples of technical material as well as others in 'museum' and private collections;

5 Enable theatre owners to know whether there is material within their buildings that is likely to present an obstacle to future alterations, and if so to know whether recording would be an acceptable alternative in the event of a planned demolition or loss;

6 Make sure that key material is not lost without being understood or a record made;

7 Develop and share experience on appropriate conservation and restoration techniques and standards;

8 Agree basic recording requirements and terminology for theatre technology; and

9 Augment the records of The Theatres Trust and other appropriate bodies.

4 Criteria for inclusion on the Register

The Survey was undertaken on a UK wide basis in accordance with TheTheatres Trust's remit. Perhaps unsurprisingly, the great majority of the places identified as containing important material are in England and in Scotland. Only two were identified in Wales and none in Northern Ireland, although this may reflect the extent of the Steering Group's knowledge as well as a relative lack of traditional theatre buildings. The Gaiety Theatre on the Isle of Man was included on account of its interest and importance, although technically it is not part of the UK.

As a general yardstick material has only been included if it is either tailor made to its specific location or permanently fastened down and not intended to be moved until the time comes for its replacement. By definition, most of the material involved is located in the backstage areas of theatres, but there are some items, particularly relating to lighting, in auditoria and elsewhere. And it was also decided to include examples of where technology has been applied to enable the configuration of an auditorium to be changed, as this has become an increasingly important aspect of theatre design over the last 50 years.

It was also agreed at the outset that loose items such as lighting and portable equipment would have to be excluded from the Survey. Not only would it have been very difficult to draw up a comprehensive list, but it would also have been impossible to devise a method whereby such material could be protected under any formal system. In practice many important examples of equipment have found their way into collections - either public like that of the Theatre Museum, which has a large store in south London, or those privately amassed by enthusiastic individuals over the years. If a building or part of one is threatened or such items become redundant and are replaced they can readily be moved to a place of safety. Clearly there are borderline cases though – an early lighting follow-spot on its stand can weigh well over a hundred kilos and its removal may be impractical. And although in theory a Strand Grandmaster lighting control is capable of being taken apart and reassembled, this is not advisable and at 3 tonnes this is best classified as a fixture. Modern lighting control desks are not fixed to the infrastructure and tend to be changed regularly to meet the ever increasing sophistication of shows and of the equipment available, whereas dimmer racks are fixed to the infrastructure and often outlive several control desks.

Theatre scenery painted on canvas was by its nature fragile, and early examples are now rare, so it was decided to include these, particularly when they were purpose-made for a particular location and form an integral part of the decorations (e.g. an Act Drop) or of the backstage fittings. Examples already held in museum collections have been excluded, but it should be noted that some of the pieces of scenery identified as located in theatre buildings have no historical connection with the theatres concerned.

A few of the buildings included are not theatres per se but freestanding scenery painting workshops. This is now a rare building type and several of the few remaining examples seem to be under threat, even though some of them are Statutorily Listed. As their purpose was essentially related to the backstage activities of theatre life (most modern examples form an integral part of a theatre that produces its own work) it

was decided to include them.
Inevitably there is a grey area between items that are interesting and important in their own right or as examples of their type, and others that are merely curiosities. Being the narrowest or most awkward example of a theatre get-in does not of itself qualify for inclusion in the Survey, but being the best surviving example of a type that reflects the time when scenery was 2 dimensional and lightweight and could be posted through a large vertical 'letterbox' does seem to be worthy of note. Some unusual features (like the downstage bridges at Drury Lane) were introduced for a particular production and were retained because they enhanced the theatre's facilities; otherwise if elements survived it was simply because there was no subsequent need to move them.

The Survey also found examples of unsuccessful new technology. The architect of the Nottingham Playhouse incorporated into the auditorium, as an architectural element, one of the first exposed lighting bridges. It was never used, but remains as a significant architectural feature in what is now a grade II* listed building. This feature was not a good or important example of its type and it has not been included in the Survey. And although the design of the Gardner Arts Centre at Brighton (also listed at grade II* on account of its architectural merit) reflects an early attempt at a variable format auditorium, it was widely criticised and never fully completed. For this reason it has been given a lower rating.

Some uses of technology are not peculiar to theatre buildings and it was decided not to include examples for that reason. There are, for instance, good examples of central vacuum systems for cleaning at Drury Lane, the Glasgow Pavilion and the Royal Shakespeare Theatre at Stratford-upon-Avon. But these also exist in hotels and other large public buildings. Smoke vents that open automatically in the event of fire (often known as Haystacks or lanterns on account of their shape) are a prominent feature on the roofs above the stages of many theatres and were manufactured and installed by stage engineering specialists. However, versions are also to be found in factories and other types of industrial building. Nevertheless the Trust's records are being amended to include such information on good or important examples of vacuum systems and smoke vents, and owners should be notified. Most theatre owners (and theatre technical staff in particular) take great pride in their buildings and appreciate unusual historic features even where they do not specifically relate to theatre use.

Finally, for reasons that will become apparent later in reference to the Statutory Listing System, material that is less than 30 years old has generally been excluded. It is in any case difficult to assess the respective importance and influence of technological material until some time has elapsed, although there are of course exceptions. But, running counter to this, there is the rapid process of change and the fact that much modern material of a technological nature is likely to have become redundant and been replaced well within a 30 year period. There is therefore a real risk that all examples of some important modern material may be lost.

5 The Rating System

Part of the Survey's purpose was to develop a system for rating items. The system established by the Steering Group takes account of their intrinsic importance and condition, as well as rarity and the degree to which an item represented a new technological advance or perhaps the end of a line. The ratings also relate to the opinion of the Steering Group on the extent to which it felt that any loss should be resisted and what steps should be taken to ensure that a record be made in the event of loss. The levels of recording recommended relate to those set out in the 2006 English Heritage publication Understanding Historic Buildings – a guide to good recording practice.

The Rating System set out below has four categories, with an A as the most important:-

A An exceptional and rare (possibly sole) surviving example of its type, of UK-wide importance. Adds significantly to the interest of the (historic) building. Likely to be in good and original condition and sufficiently complete to be restorable to working order were that to be considered appropriate. Every effort should be made to retain intact and in situ. Removal should only be permitted in the most exceptional circumstances and then on a temporary basis if at all possible and against a guaranteed promise of full reinstatement and if possible, betterment. In the event of any loss there should be a full recording, including photographs and measured drawings and, where appropriate, a film/video of the item in operation, to sufficient detail to enable the original to be reproduced. Material removed should be offered for re-use or display onsite or elsewhere, and a working model created as part of a permanent display related to the item.

B A significant and excellent example of its type in UK-wide terms, that contributes significantly to the interest of the (historic) building. Likely to be in

good condition and sufficiently complete to enable a credible recreation to be completed if necessary. Could represent a technological breakthrough or the end of a line, or be the last surviving example. Worth retaining unless this materially inhibits the future beneficial use of the building. Any loss would have to be fully justified and any material removed offered for re-use or display on site or elsewhere. In the event of any loss, recording etc conditions should be as for category A above.

C Of interest as a good example of its type, possibly demonstrating a 'first' or a 'one off' and having significance as such. Any loss would have to be justified. In the event of loss or removal measured drawings and a photographic record should be required.

D A surviving example of a feature that was once common. Not necessarily complete or in good or original condition, but in the event of loss or removal, of sufficient interest to be worth making a photographic record in order to increase understanding.

6 Ensembles

It soon became apparent that there are a small number of theatres where the backstage areas contain so much important material that it was unrealistic to attempt a comprehensive inventory of individual items. Some of these areas could even be described as time capsules – hardly used and virtually untouched and relatively complete. Others are still in active and full use but have somehow survived with much of their special historic interest essentially intact. Each of these buildings has so much original or unusual technical material that, in addition to the individual items included on the Register, its entire backstage area should qualify for identification as a special category or 'ensemble' in its own right and (where this has not already happened) should be fully recorded as a matter of urgency.

One building that would certainly have been included on the list of ensembles, the Royal Shakespeare Theatre at Stratford-upon-Avon, has been the subject of a major redevelopment during the course of work on this Survey, and in consequence no longer qualifies as an 'ensemble'. It was decided to retain at the end of the list of 'ensembles' the description that it would have had, although the references to the theatre in the individual lists have been updated to reflect the alterations now being made.

It is probably no coincidence that each of the ten buildings remaining on the 'ensembles' list is already protected by statutory listing, all but one of them at a high grade. As it happens, several of them are unlikely to be subject to pressure for significant changes, for they are no longer in intensive theatrical use and are already effectively being 'preserved' mainly on account of their heritage interest. But others are still in active and intensive use, and they include commercially owned theatres in London's West End that need to be constantly upgraded to meet the demands of audiences and the producers who hire them and the technical requirements of incoming shows. If aspects of some of their backstage areas still resemble museum pieces it is only because of the lack of money (and time between shows) to make the necessary improvements. It is worth pointing out here that it is generally easier to justify making radical alterations that are necessary for an historic building to continue in its originally intended use, than if that building is in the 'heritage attraction' category. Section 8 identifies how the balance between heritage and active use can be managed in such a context, and the case studies outlined in Appendix B illustrate how this has already been achieved in practice.

7 Protection through the Statutory Listing System

A certain number of buildings have been statutorily listed by the appropriate Government authority on account of their special architectural or historic interest, and any proposal to alter one in such a way that affects its special interest is subject to Listed Building Consent under the planning system. Clearly a building can be considered for listing on account of its technical interest as much as for its architectural interest. But an architectural interest is usually far more obvious, and most formal List Descriptions concentrate on that aspect. Indeed the publicly visible exterior of a building is usually described in far more detail than its interior, and it is unusual to find any written reference to the technological aspects of a building. Whilst the exterior of a theatre building may well be of special architectural interest, this is a particular aspect that relates to the built environment. In the context of the building's theatre use it is the audience's relationship to the acting area, the nature and aspect of the acting area, the internal construction and decoration, and historical associations that largely give a theatre building its unique cultural, historical and architectural interest. However if a building is statutorily listed this status covers all aspects, both inside and out, so it is very relevant for this Survey to include a note of any theatre's listing status when compiling records.

In order to be statutorily listed a building normally has to be 30 years old, and this has been generally used to define a cut-off point for the Survey. (Buildings that

are less than 30 years old can be listed, but only at the higher levels of grades I and II*.) In fact under the present rules it is possible for later additions to a listed building, such as (for example) a modern mechanised orchestra pit elevator system, to be covered, provided that they are of intrinsic interest or as part of a building's organic history. Unfortunately this Survey did not have the resources to investigate examples of modern (i.e. less than 30 years old) material. In any case it is not at all easy to decide on the relative importance of technological material until a significant passage of time has elapsed and it can be considered in a broader context.

It is worth noting that the listing system is currently under review, and the criteria may become more flexible. Indeed one suggestion included the possible listing of a single part of a building so that, for example, a stage house could be listed in its own right.

8 The effect of being on the Register

Some items, like the complex wooden stage machinery at London's Her Majesty's Theatre, are large and their potential significance is fairly obvious. But other examples, like the traces of early electrical wiring and circuitry in the disused theatre at Alexandra Palace, may easily be overlooked, even by an expert. Such is the range of subject matter covered in this Survey that it would not be realistic to expect any one individual to be able to recognise everything. Nor would the sort of material covered by this Survey normally fall within the experience of architectural historians, listed building inspectors, or local authority conservation officers. Nevertheless it is essential that this attempt to record and protect such material has their support, and that the technological aspects of a building be equally recognised alongside its architectural and historic interest. The most obvious way to achieve this is by ensuring that technological features of interest are formally recognised under the Statutory Listing process.

The items identified as a result of the Survey should form a discrete Register, held by The Theatres Trust, and be specifically referred to in the Statutory List Descriptions drawn up by English Heritage and its counterparts in Scotland, Wales and Northern Ireland as these are udpated. The fact that a particular part of the building has been specifically mentioned in the List Description and forms part of the official Register should help alert owners to take account of it when formulating proposals.

In the event of any proposed alteration/removal where a building is statutorily listed it is likely that the Planning Authority will require a full justification as part of the application process. This will normally need to be supported by a Conservation Statement, Conservation Plan or an Historic Building Justification Statement prepared on behalf of the applicant, usually by an independent expert. This will describe and explain the relative significance of the various aspects of the building. For several years The Theatres Trust has been encouraging the owners of significant listed buildings to have such documents prepared and ready as a matter of course. More recently, Management Agreements have been introduced for complex listed sites or buildings. As part of the new heritage protection system in England and Wales the Government is committed to statutory provision for these, now called Heritage Partnership Agreements (HPAs). Owners can now enter into HPAs that would identify important technical equipment (as well as other aspects), and reduce the number of unnecessary consent applications by managing change through the Agreement.

If the removal or alteration of an item on the Register were envisaged, the granting of Listed Building Consent would depend on The Theatres Trust's Register rating and whether such 'loss' could reasonably be avoided. Conditions would be attached to any consent. A Local Planning Authority or English Heritage (and its counterparts elsewhere in the UK) would require a proper recording to be undertaken to appropriate standards as a condition of any consent. These conditions might also include some of the following: temporary removal followed by reinstatement and (if possible) betterment; permanent removal to a 'museum' or re-use elsewhere following an advertised offer on these lines; a filmed/video/digital recording(s) of the item in operation; construction of a working model and associated material (that may include some salvaged parts) for permanent public display with appropriate interpretative material, and possibly a publication.

There are precedents for measures such as these. Indeed as early as 1970 there was a requirement to make measured drawings and construct and display a scale model of the wooden stage house and its machinery at the Bristol Theatre Royal when the original was replaced. Precedents set over the last 20 years have enabled this Survey to establish what might be termed 'good practice'. More information is given in Appendix B, and this experience has also been reflected in the proposals for a Rating System (see above at Section 5).

The great majority of the items that feature in this Survey and on the Register are in buildings that are statutorily listed, but 25 of the 176 items are in unlisted buildings. Some of the 21 buildings concerned may qualify for listing in their own right and in some instances their technological interest could be a significant factor. On the face of it though, the procedures set out above would clearly not apply unless the building concerned was listed. However The Theatres Trust has established precedents whereby Planning Authorities have been encouraged to impose recording conditions in relation to Planning Applications for unlisted buildings, particularly in Conservation Areas or where buildings are contained within a Council's Local List. There may also be scope to propose some theatre buildings for statutory listing on account of their technological interest. As an example, the Churchill Theatre at Bromley is now 30 years old, and following the recent losses at the Royal Shakespeare Theatre at Stratford-upon-Avon it may now house the most significant mechanised stage installation in the UK since that at Drury Lane. A statutory listing there could now be restricted to the theatre's stage house alone. It might be useful for The Theatres Trust and the ABTT to look at the list of theatres concerned to decide on any priority cases for statutory listing.

9 Managing change

It is not the intention of Government that Listed Building Status should unduly restrict changes where they are necessary, nor is it the intention of this Survey to prevent theatre buildings from being effectively used and modernised when appropriate. The members of the ABTT HRC have many years of experience working in theatres, and have considerable knowledge of developing new technology to improve efficiency and working practices. The Theatres Trust was established to protect theatre use and has always championed the need to improve building stock. It promotes the value of theatre buildings and champions their future, providing a unique source of knowledge and information on theatres.

The procedures set out in this document and the examples of good practice cited at Appendix B are all derived from this standpoint and demonstrate that the Trust and the ABTT HRC, as well as the Planning Authorities concerned and English Heritage, have consistently taken a pragmatic view. There has been a universal welcome to this Survey by theatre practitioners who have accepted that this is not an attempt to retain items that are no longer usable or to prevent them from making necessary changes. Sadly the main factor restricting the improvement of most theatre buildings over the years has been money, or rather the lack of it. This problem is particularly acute for those theatre buildings in the commercial sector in London's West End. Even in the subsidised sector where improvements have been made it is surprising how often the money has run out at the pass door and in those areas that are not normally seen by the public.

10 Some practical issues for discussion

A decision is still required on where records should be retained and how many copies would be needed. Many local authorities already have clear policies on where to deposit recording reports. Outside London the local or County Record Office is an obvious repository, as well as the local studies section of local libraries. It would also seem logical for the building's owner to have a copy. The Theatres Trust should hold the master record, even if it contracts out the management of this to another party. As an alternative, this responsibility could conceivably rest with The National Monuments Record (in England), the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS), the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW), and the Monuments & Building Record within the Northern Ireland Department of Environment.

Whilst any of these bodies is likely to have a shortage of physical storage space, it is assumed that all future records will be created in digital form. However one 'master' set should be held in hard form, as it is likely that electronic records may deteriorate and the technology required to read stored digital material of a particular file type may become obsolete and make them unable to be accessed. Already we are finding that film and video recordings referred to in this Survey as having been made less than 10 years ago are no longer compatible with today's reading devices/ technology and will have to be copied or transferred to a more modern system.

Full records of everything on the Survey could probably eventually fit within four 2 drawer filing cabinets. At one extreme, the detailed records and documentation now being made for the understage machinery at the Theatre Royal Drury Lane is likely to take up an A4 box 15cm thick. However that is a particularly complex example – most of the items on the lists are unlikely to require recording in the immediate future, and their records will only require a few sheets of paper and photographs. There is a more significant issue. Wherever they are kept, there will be little point in creating these records if the resource cannot be made publicly accessible and kept up to date. And if the records are to be made

freely available it will be important to clarify any issues relating to Copyright, and to ensure that the rights of authors over the drawings and other material they produce are appropriately protected.

Recording must be carried out to proper standards. Most local authorities have advice on how to record buildings, and this will follow guidance set out by the official bodies listed at Appendix E. It will also be important to establish a list of appropriate contractors for this purpose. This is especially the case for backstage equipment where a number of specialists may be required to feed into a single report.

Clearly it will be important for the Survey and its recommendations to have the formal support of English Heritage and other official bodies. In the first instance further discussions are needed with English Heritage to follow up their encouraging initial response. The Association of British Theatre Technicians should also be asked for its formal endorsement, as its members have been and are likely to continue to be involved in advising. Westminster City Council has also proved to be a sympathetic Planning Authority with much practical experience of these issues, and should be worth consulting. Local authorities collectively could be consulted via specialist officers' umbrella bodies or one of the professional planning or conservation bodies.

This information also needs to be incorporated into The Theatres Trust's theatre records in the light of the two year Theatres Records Project which will update the Trust's records, and review the status of all the entries. It is planned to include all UK theatres and to make it more accessible on line. This Survey can be seen as part of an ongoing campaign to raise awareness of our theatrical heritage and to enhance the Trust's role as the National Advisory Public Body for Theatres.

The brief records contained in the Register will need to be extended and in some instances checked. Much of this could be undertaken as opportunities arise. Theatres Trust staff and volunteers visit several hundred theatres in the course of each year in the course of their work. ABTT HRC members, theatre owners, Stage Management Association members and many other 'experts' could doubtless be enlisted to help in the data gathering and verification process. It is quite likely that other candidates for inclusion will come to light, especially once this Survey is 'published' and the contents of the Register become generally known. In the course of establishing the Trust's Theatre Records Project it may be possible to issue some simple guidelines to help people recognise material that is of potential interest, and encourage them to report potential items to the Trust and to the members of the ABTT HRC.

Working in this way it should be possible to maintain the Register and to ensure that it is updated on a regular basis. However the Register can never be regarded as 'complete' as such. It can only be regarded as a valid appraisal of the situation at given moment in time. It will also be necessary for an expert group - presumably the HRC - to review the Register as a whole together with the respective ratings given to all the items on it, for things will be lost and other new ones will come to light or become eligible for inclusion. In the opinion of the Steering Group, such a review is essential and should probably take place after 3 years for some types of material.

11 The need for further Survey work – and paying for it

The Steering Group has taken a pragmatic approach to this. Completing and refining this basic Survey would cost very little – it has only involved part of the time of one part-time Consultant to date, but there has been considerable help from members of the ABTT HRC, who have not claimed any expenses and have worked on a voluntary basis. Clearly, if the Trust is going to engage the help of members of the ABTT HRC for specifically requested visits or reports, reasonable expenses would have to be reimbursed and it might be appropriate to consider offering an honorarium. As mentioned in the previous section, a great deal more can be achieved in terms of checking and updating if it is incorporated into the Theatre Records Project, which will also be capturing information through the day-to-day work of the Trust.

The detailed recording of individual theatres is probably best done on a case-by-case basis as hitherto, building on the precedents set out in Appendix B. In practice many of the recent alterations to theatres in London's West End have been demanded by incoming producers rather than by owners, and the owners have negotiated for the producers to pay the costs involved (including reinstatement where appropriate). In other instances the developer or an incoming producer has been required to pay, or the recording exercise has formed a legitimate part of the cost of a bigger modernisation project.

Experience to date suggests that owners, whether in the private or the public sector, are only likely to spend money on research or Survey work if it can be demonstrated to be a prerequisite to obtaining consent or funding for essential alterations or improvements.

Nevertheless, more theatre owners should be encouraged to have basic Conservation Management Plans done on their buildings as a matter of course, and the Trust and the ABTT HRC can help ensure that proper notice is taken of technical aspects when these are done.

In an ideal world it might be suggested that all the items featured on the Register should be inspected as part of a comprehensive recording exercise. However in practice it would be difficult to argue for this when other features of the buildings, not least their architectural ones, remain unrecorded. However, potential sources for external funding for a complete UK-wide Survey include the following:-

Heritage Lottery Fund - the exercise would also need to form part of a substantial educational programme that would be likely to add hugely to the costs and complexity of the operation and require substantial additions to the basic Survey. HLF budgets are facing cutbacks and there will be increased competition for funds. Some individual theatres could benefit as a spin-off from major awards for restoration projects, such as Leeds Grand, Wiltons Music Hall and Hoxton Hall in London and the Tivoli in Aberdeen, but generally there have been fewer successful HLF bids from theatre buildings in the last couple of years;

Other charitable sources, perhaps theatre or education-related, particularly if design and technology education is focused upon;

English Heritage via its Historic Environment Enabling Programme (HEEP) to assist in financing the general Survey work already started. This could be linked to its enhancement of Statutory List Descriptions generally;

Manufacturers and suppliers might be approached for help, but are probably better considered as sponsors; Sponsors might be interested if this could be linked to an exhibition or event with an associated publication. The Theatre Museum / V&A could also be approached;

The National Monuments Record (now part of English Heritage), the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS), the Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW) and the Monuments & Building Record within the Northern Ireland Department of Environment should be approached in context of their ongoing recording process and might help with individual high priority buildings, perhaps those on the 'ensembles' list;

Some theatre owners or operators might be prepared to contribute towards the cost of Survey work on their buildings if they could be persuaded that it was in their interests to do so and that other parties were offsetting part of the costs for them.

12 What would it cost?

The Steering Group was asked what it might cost to undertake a full Survey of all the material featured in the Register. As explained above, it would not be realistic or appropriate to conduct such a Survey, and any figure must inevitably come with caveats. However this issue has been discussed with a number of individuals and organisations that have relevant experience, including working on the case studies cited in Appendix B. Clearly the recording of the backstage machinery at the Royal Shakespeare Theatre represents one end of the spectrum of what might be entailed. This included engineers preparing construction drawings as well as operational ones and making photographs sufficient to enable the original installation to be recreated in full and working form. Specialist consulting engineers spent a total of 12 person days on site and a further 28 in the studio to make a record. In addition architectural photographers spent a couple of days on site to complete the official photographic record and representatives of the Museum of London Archaeology Service also did a survey. There may be a further half dozen installations on the Register where that degree of work would also be needed. At the other end of the scale, all that may be needed are a few photographs with descriptive notes including what the item is made of, and an indication of its size and of its location in relation to a sketch plan.

Costings were obtained for Surveys of different levels of complexity and, applying those figures to a rough breakdown of the Register, produced a figure of £750,000. This included an allowance for specialist photography, some overnight travel and subsistence, and a contingency of 15%. This total does not of course include any allowance for meeting the sort of conditions that might be imposed were any of the items to be removed, such as dismantling or re-erection (let alone betterment) or making models or other interpretative material and displays. Costs such as those would only occur in the event of a loss, whereas it could be argued that all material of a historic or technical interest should in theory be recorded as a matter of course regardless of whether it was under any threat.

13 Benefits that have already arisen from the Survey

The potential benefits from the Survey are set out in Section 3. During the last 12 months the basis for a

Register has been established, currently comprising some 176 items. A Rating System has been developed to indicate relative levels of importance and appropriate recording and other conditions to be applied in the event of any threat or loss. Proposals in that regard are now at the point that discussions may be opened with English Heritage and other appropriate official bodies. And precedents and examples of good practice stretching back over 20 years have been identified that can be built upon as the basis of future policy and practice by heritage and planning authorities. Even during the last 12 months the Survey has influenced the course of major developments at two of the most famous and important theatres in the UK. Much new material is now available to help augment the records of The Theatres Trust, and the limited publicity that has been generated has already started to raise awareness of this aspect of the UK's theatrical heritage among those working in or on theatre buildings. Perhaps most significantly, that increased awareness has not led to fears that these efforts are intended to frustrate the progress of change. Instead, they have been welcomed as means to ensure that change may be managed more effectively.

Appendix A: The lists of items on the Register - and understanding them

The Register attached to this Survey comprises 10 separate lists or sections each of one page. Their headings are Above Stage, Below Stage, Get ins, Miscellaneous, Paint Frames/Workshops, Safety/ Natural Ventilation, Scenery/Act Drops, Sound/Light/ Electric, Stage Revolves/Surfaces, and Variable Formats. The Ensembles that have been identified (see Section 6 above), together with the description that would have applied to the Royal Shakespeare Theatre at Stratford-upon-Avon, are on an 11th sheet. There are 176 items on the basic lists, rated between A – D. Some theatres house more than one item, so the total number of theatres that feature on the lists is 96. Interestingly, 33 of these theatres (and 70 of the items) are in London, perhaps evidence of the relative lack of money spent on improvements there over the years. The Trust's records now contain further information relating to examples of things noted during the Survey that were not necessarily complete or even rare, and not therefore worthy of special protection, although they might be regarded as of local or theatrical interest. Although consultations have ranged fairly widely, the response from some quarters has been disappointing, and it is possible that some significant material has been missed. But the Steering Group are reasonably confident that the great majority of what one would expect to find has been included. Inevitably there will be scope for discussion on some of the decisions on individual ratings, and there are places where a visit is ideally needed to confirm the judgement made. Within each section of the Register, every theatre is identified by its town and generally known name. The statutory listing grade is given when applicable. Descriptions of the items of interest are generally confined to one line and are simply to enable the material to be identified in the way in which it might feature in a List Description. The final column contains the Rating, using the system set out in full at Section 5 above. This may be summarised as follows:

A - an exceptional and rare (possibly sole) surviving example of its type, of UK-wide importance and adding significantly to the interest of the building.

B – a significant and excellent example of its type in UK-wide terms and that contributes significantly to the interest of the building.

C – of interest as a good example of its type, possibly demonstrating a 'first' or a 'one-off' and having significance as such.

D – a surviving example of a feature that was once common, not necessarily complete or in good or original condition.

A star * in the final column denotes a building that features on the list of 'ensembles', where the backstage areas contain so much important material or are so unaltered that it has not been realistic for this survey to attempt a comprehensive inventory of individual items.

NOTE - the Register lists, including 'ensembles', may be found at the end of this document.

Appendix B: Precedents and good practice

Apart from the creation of a formal Register of important items, what is now proposed is not new. Even the creation of a list has some precedents, notably the original Curtains!!! Gazetteer published in 1982, and The Theatres Trust's Guide to British Theatres of 2000. A report on important wooden stage machinery in London theatres was undertaken for the former Greater London Council (GLC) as long ago as 1972. And, over

the years there have been a number of precedents (mainly in central London) whereby the planning authorities have required special measures to be taken in recognition of the importance of backstage technical installations.
It seems worth devoting a few lines to each of these, if only to show how practice has evolved.

Some time after the report on wooden machinery referred to above, the GLC commissioned measured drawings and a photographic record on the Alexandra Palace Theatre, the Playhouse in Northumberland Avenue and the theatre in the Normansfield hospital in Richmond. Her Majesty's Theatre in the Haymarket had been recorded as part of the 1972 report.

Interestingly, three of these four have survived sufficiently intact to be included in the list of 'ensembles'. The other one, the understage of the Playhouse, was further restored with modifications to meet health and safety and escape requirements as part of a planning agreement when the theatre was brought back into use in 1987 and an enabling commercial development was permitted on its roof. When the long running musical Phantom of the Opera opened at the Her Majesty's in 1986 the planning authority set a condition whereby the modern machinery for its special effects was cunningly interlaced into the forest of old timbers, and those parts that had to be removed were carefully recorded and will have to be reinstated when the show eventually closes. More recently, when the Normansfield hospital was closed in 1997 and its site was redeveloped it was made a condition of the planning consent that the theatre's stage machinery and unique collection of scenery should be restored and stored on site as part of a scheme to open the theatre for public access, and this has now happened.

When London's Royal Opera House was closed for a major refurbishment and extension it was recognised that its entire backstage area would have to be rebuilt and enlarged if the theatre was to continue in its role of housing opera and ballet productions at an international standard. The theatre is a Grade I listed building (and a Scheduled Ancient Monument) and its stage house contained very important machinery and other material that would certainly have earned an A rating, and almost certainly inclusion on the list of ensembles. Pragmatically, it had been agreed as a condition of the Listed Building Consent granted in 1995 that the RCHME (now part of EH) should be given the opportunity to photograph and record the backstage areas and machinery. In 1997 it was further agreed that a filmed record should be made of the machinery in use and that elements of it should be offered for reuse or for transfer to a museum. Some things did find their way into the Science Museum collection, and there is now a filmed record alongside the drawings and the photographic one. Parts of the wooden stage machinery from other Victorian and Edwardian theatres have been given a new life in the re-created understage of the Gaiety Theatre on the Isle of Man, or are in stores awaiting a prospective re-use.

The revolving stage at the London Palladium was probably the best known piece of stage machinery in Britain, famous to several generations of television viewers for its starring role in the finale of the weekly show Sunday Night at the London Palladium. But by 2001 it was redundant and unreliable and took up a lot of valuable space that was needed to house the flying car for a stage production of Chitty Chitty Bang Bang. However it was also an important example of its type, and the news that it was under threat created national interest. This was the first occasion on which the full procedures now being recommended in this Survey were put into effect. The Theatres Trust and the members of the ABTT HRC were involved in advising the planning and heritage bodies and worked with the full co-operation of the theatre's owners. Although restitution or re-use elsewhere were clearly unrealistic, a detailed measured set of drawings were made together with a photographic record, and some material was salvaged to be incorporated in a future display. Unfortunately the revolve was no longer operable so it was not possible to make a film record of its mechanism in operation from below the stage, and there does not appear to be any archive footage showing this. But the Register now includes other (albeit less elaborate) operable revolve mechanisms in theatres elsewhere, so this should be possible on future occasions.

Although finding an appropriate long term use for the derelict theatre at Alexandra Palace sometimes seems a hopeless task, the building has been subject to ongoing interest from English Heritage which has invested significant sums of money in a photographic survey and measured drawings of the stage area to augment and update the early GLC one. There has also been an archaeological 'dig' in the stage basement that has helped to piece together something of the multi layered history of this part of the building. And, in a separate but complementary report, the uniquely important gas and early electrical evidence has been examined. Such information will be essential for whoever has to produce the full Conservation Plan that will be needed before clear proposals for future use can be agreed.

The scenery and prop construction and painting Workshop at Newport Street in Lambeth is (or was) probably the most complete and best of the few remaining examples of its type and was statutorily listed at Grade II on those grounds. Unfortunately the closure of the original business and a change of ownership led to proposals for a change of use that, whilst preserving the (uninteresting) exterior, would have severely compromised the interior including most of the paint frames and other material that gave the building its special interest in the first place. However, the Conservation Plan, prepared by experienced historic building experts on behalf of the owner, proposed a full recording together with the creation of a permanent display and a detailed publication describing the building and other examples of its type. Although the planning authority has now granted consent for the scheme, there has been a delay in implementing it, and no demolition work has been carried out yet. Nevertheless the recommendations in the Conservation Plan do seem to have posed a useful precedent, and a full measured survey and photographic record has recently been made involving members of the English Heritage recording team.

The National Theatre Studio (formerly the Old Vic Annex) near Waterloo is a more recent example of a workshop building, having been constructed in 1957/8. It included workshops and an important paint frame, but unlike that at Newport Street, this building also had some architectural merit, as an early example of the New Brutalist movement. It was statutorily listed in 2005 just as alterations were being proposed including the removal of the paint frame. A conservation statement was prepared and Listed Building Consent was eventually granted, subject to some detailed matters to maintain the architectural integrity of the exterior, retaining elements of the interior, and a full recording of the paint frame. The paint frame had effectively become redundant and its presence compromised the future use of the building's internal spaces. It has now been removed, but its 'shadow' continues to dominate the layout and the external profile of the building.

The Theatre Royal at Drury Lane features on the 'ensembles' list and is a Grade I listed building. Architecturally and historically it is one of the most important theatres in the world and ought to be a high priority candidate for a full Conservation Plan. Such a study would have to include the extensive backstage areas, still among the most ambitious in the UK and with elements potentially dating back over 200 years. Over many years alterations to the building have been made on a piecemeal basis and usually against tight timetables to meet the demands of an incoming production. The production of The Lord of the Rings that opened in the summer of 2007 necessitated the removal of elements of the stage lifts and bridges, parts of which were discovered to be the only surviving examples of their type in the world.

Once again the Trust and members of the HRC were called on to advise the owners and the planning authority and English Heritage. The owners commissioned a specialist report with drawings and plans, and it was eventually established that the production could be accommodated by the temporary removal and storage of some of the material. Listed Building Consent for the works was granted on the basis of a full recording being undertaken in stages as the works took place with drawings to a sufficient standard to enable the original to be reproduced, and on the basis that the bridges would be reassembled and put into working order at the end of the run. The producers of the show, who had agreed with the theatre's owners to meet the costs of the work, were required in addition to deposit a sum of money sufficient to guarantee reinstatement in the event of failure of the show. In essence what has been agreed here is fully in accordance for what should happen in similar circumstances elsewhere for material of this importance. From the theatre owner's point of view the fact that the stage bridges will have been restored to working order should make it easier for the theatre to accommodate large and complex shows in the future.

During the course of this Survey it became apparent that the Grade II* listed Royal Shakespeare Theatre at Stratford-upon-Avon contained a uniquely important set of stage machinery and equipment, designed to the latest standard at a time (1932) when there was relatively little activity in theatre (as opposed to cinema) construction. Its mechanised stage, including bridges and rolling side stages are in effect the 'missing link' between Drury Lane and late 20th Century examples like the Churchill at Bromley, the National and the Barbican. And although the auditorium was widely criticised from the outset and has in consequence been radically and regularly altered, much of the backstage areas had survived relatively intact - to the extent that it became apparent, late in the course of this Survey, that they merited inclusion as an 'ensemble' in their own right. At the same time the owners of the building and their architects and consultants were at an advanced stage in preparing to close the building for the most radical overhaul and remodelling in its history, one that

would finally deliver a building that meets appropriate standards of audience comfort and a good relationship between performers and their audiences. But most of the material that would have justified the building's inclusion in the Register as an 'ensemble' was about to be removed.

Although the Conservation Plan on the whole building had paid relatively little attention to these areas (not surprising in the absence of an expert eye as part of the original team and a restricted brief) the client was aware of the special interest, and was assisted and encouraged in this by members of the ABTT HRC. Late in the day the theatre revised its application for Listed Building Consent to provide that the backstage areas would be fully recorded, alongside those public areas that were to be affected by the remodelling. Unusually, a detailed record of the backstage had also been made when the theatre was first opened – its importance and extent of groundbreaking technology had obviously been recognised at the time. Wherever possible material was retained in situ, whilst other items were salvaged for the theatre's own museum and archive, together with the measured drawings and film and photographic record that were specially compiled under expert guidance.

In closing this section it is perhaps worth mentioning that a project or an endangered item does not have to be of this scale or age for the principles described and recommended in this Survey to be applied. During the summer of 2007 proposals to remove some of the cable management windlasses at the Barbican Theatre in London and to alter the cyclorama at the Belgrade Theatre Coventry were both dealt with in this manner. Other examples are likely to arise in the near future.

Appendix C: Examples of material 'lost' or threatened during the course of the Survey

There is no sure way of knowing what material has been lost without record or prior consideration in recent years but, as already pointed out, even the fact that a building is Statutorily Listed has not guaranteed that important technological material would be spared. During the last 12 months members of the Steering Group have become aware of the following losses or threats to material that would otherwise have featured on the Register –

A rolling cone cyclorama, the last known working example, originally made for the Nuffield Theatre Southampton in 1963 and re-installed at Suffolk College Ipswich in c1993, was recently removed. Both buildings are unlisted.

An unusual 2 part descending safety curtain at Criterion Theatre London was apparently replaced at this Grade II* listed building during the last few years.

The unique and important complex of stage bridges at Theatre Royal, Drury Lane, was saved and enhanced following its threatened loss to accommodate Lord of the Rings musical – see Appendix B.

A large and important paint frame – a key and dominant feature of the Grade II listed National Theatre Studio – was removed, but only after full recording condition had been agreed – see Appendix B.

Listed Building Consent has been given for the removal of the nationally significant paint frames and other material from the Workshop at 1-7 Newport Street, even though their existence had been the reason for the Statutory Listing of the building in the first place – see Appendix B.

Jigger ram (related to original hydraulic house curtain mechanism) at Grade II* listed London Palladium removed without internal agreement from its 'chimney', although now in store on site.

Nationally significant stage machinery and other material has been removed from the Grade II* listed Royal Shakespeare Theatre. Although not properly identified in the Conservation Plan, it was noted by ABTT HRC and has now been fully recorded with some material salvaged – see Appendix B.

An unusual and potentially important grid installation and other material from 1880 and 1900 was removed without consent or any record from the Grade II* listed Spa Theatre in Scarborough in spring of 2007.

This list is certainly not exhaustive, but it does indicate the urgent need for this Survey as well as the way in which TTT and ABTT HRC have already been able to work together with owners and planning and heritage bodies to ensure that appropriate records are made and the effects of any loss of important material may be mitigated.

Appendix D: English Heritage and other Standards for surveying work

The Rating system used in this Survey (see Section 5) refers to the level of recording that should be necessary in the event of items on the Register being lost, removed or altered. The level or extent of recording recommended relates directly to the importance of the item concerned and its rating on the Register. These recommendations have been produced with particular reference to Understanding Historic Buildings: A guide to good recording practice by English Heritage (2006).

Other relevant publications include English Heritage's 2003 publication Measured and Drawn: Techniques

and practice for the metric survey of historic buildings, and Historic Scotland's recently published Guide for Practitioners - Measured Survey and Building Recording (2004).

Historic Building Recording guidelines in general were set out by the Royal Commission on the Historical Monuments of England (RCHME) in 1996 and by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) in 1997, and with reference to the Association of Local Government Archaeological Officers (ALGAO) 1997 document Analysis and Recording for Conservation and Control of Works to Historic Buildings, and the Standard and Guidance for the archaeological recording of standing buildings and structures published by the Institute of Field Archaeologists (IFA) in 2001.

The main national repository for records relating to the built environment in England is the National Monuments Record in Swindon. This was the public archive of the RCHME, which merged with English Heritage in 1999.

Outside England, the RCAHMS operates in Scotland and the RCAHMW in Wales, whilst the Northern Ireland Department of Environment houses the Monuments and Buildings Record there.

Appendix E: List of those involved or who responded to the consultations

Members of the Historical Research Committee of the Association of British Theatre Technicians who regularly attended meetings and formed the Steering Group for this project:-
Roger Fox - Chairman
Joe Aveline
Jason Barnes
Alan Cohen
Graeme Cruickshank
Phil Edwards
Michael Hall
Don Hindle
Brian Legge
Peter Longman
Richard Pick
Merlin Shepperd
Jane Thornton
Donald Walker
Mark White

Others who responded to requests for help or advice include -
Ian Albery, John Allen, Peter Angier, Fran Birch, Ted Bottle, Richard Brett, John Earl, John Faulkner, Andy Hayles, Michael Holden, James Laws, Mark Price, Barry Pritchard, Francis Reid, Peter Roberts, Mhora Samuel, Michael Sell, Joanna Smith, Clare Sorensen and David Wilmore.

Type	Town	Theatre	Listed	Item	Rating
Ensembles	Abercrave	Craig y Nos	I	Private theatre built for Adelina Patti in 1891 as an addition to her house. Hardly altered since and in occasional use, though badly neglected and at risk. Tilting auditorium floor to create ballroom level with the stage. Small sunken orchestra pit extends beneath stage. Vestiges of understage machinery. Above stage intact with fly tower and hemp lines and original act drop and house tabs mechanisms. Very important act drop and some scenery.	*
Scenery, act drops	Abercrave	Craig y Nos	I	1891 act drop of Patti as Semiramide attributed to Hawes Craven but possibly Joseph Harker	A*
Scenery, act drops	Abercrave	Craig y Nos	I	c. 6 pieces of original scenery, incl cloths, from 1890's still survive, now in poor condition,	D*
Stage surfaces	Abercrave	Craig y Nos	I	unique (?) curiosity in having slight negative rake	C*
VF - Auditorium floors	Abercrave	Craig y Nos	I	oldest (1891) tiltable auditorium floor to create ballroom level with stage, still workable.	A*
Scenery, act drops	Aberdeen	His Majesty's	A	houses c40 good quality backcloths from former Howard and Wyndham circuit c1900 - 1950s	C
Stage revolves	Aberdeen	His Majesty's	A	platform and substucture from big revolve (c1933 not functional since 1982) still supports stage	D
VF - Reducing capacity	Aberdeen	His Majesty's	A	1906 - rear area of stalls designed to be screened off - details improved in 1982	D
Sound, light, electric	Aberdeen	Tivoli	A	rectifiers under stage, magazine battens above, carbon arc follow spots with asbestos curtains on lamp housings in lime box, Grandmaster switchboard on S/R perch. Survey may yield even more.	B
Sound, light, electric	Ashton-under-Lyme	Tameside Hippodrome		original gas control plate survives from earlier 1904 theatre	C
Above Stage	Bath	Old TR (Orchard St)	II	battens, possibly for fixing painted cloths on back (former stage) wall of 1750 theatre, now a Masonic Lodge	C
Sound, light, electric	Birmingham	Old Rep	II	elements of old fixed lighting bridge, housed only known Fortuny system in UK - pre WW1	B
VF - Complete systems	Bolton	Octagon		best example of variable format using bleacher seating - TIR, end, or thrust stage - 1967	B
Get-ins	Bournemouth	Pavilion	II	purpose made lift in downstage right corner 1934	D
Stage revolves	Bournemouth	Pavilion	II	large revolve - 11m - (and other material) from 1934 conversion to theatre for White Horse Inn	C
Sound, light, electric	Bournemouth	Pavilion	II	original Stelmar follow spots converted to Xenon still extant	C
Get-ins	Bradford	Alhambra	II	external get-in hoist for wardrobe	D
VF - Complete systems	Brighton	Gardner	II*	flawed, idiosyncratic, uncompleted (and never properly used) experiment by Sean Kenny, also had radial grid - 1969	D
Above Stage	Brighton	Theatre Royal	II	grid and some drums and shafts, double fly galleries and bridge across at upper level from 1866 rebuild	C
Get-ins	Bristol	Hippodrome	II	good example of typical Matcham of 1912 with access at near street level	C
Safety - Openable roofs	Bristol	Hippodrome	II	in 1912 Matcham - no longer in use but may still be operable	D
Misc - Thunder run	Bristol	Theatre Royal	I	early C19th (or earlier?) thunder run above auditorium - must be oldest in UK	A
Scenery, act drops	Bungay	Fisher Theatre	II	original proscenium canvas header c1828 - may predate Richmond (Yorkshire) scenery	B
Misc - Sun burner	Buxton	Opera House	II*	restored example from 1903, adapted in 1979 to working order	A
Paint frames, shops	Buxton	Opera House	II*	paint frame from 1903 including winch for it on back wall	C
Sound, light, electric	Buxton	Opera House	II*	original gas plate survives	C
Above Stage	Buxton	Opera House	II*	significant elements from 1903 including scenic forks	B
Safety - Safety Curtains	Cambridge	ADC		rare 1935 (or earlier) 2 piece by Merryweather, counterweighted and rising out of floor	B

Type	Town	Theatre	Listed	Item	Rating
Ensembles	Cambridge	Festival	II*	Georgian theatre remodelled for Terence Gray in 1926 to give one of UK's earliest experimental 'open' stages with timber revolve, Schwabe lighting and fixed cyclorama per continental mininmalist ideas. Hardly altered or used since, and now a Buddhist Centre. A hybrid ensemble facing William Wilkins Snr's horseshoe auditorium of 1814. A hugely evocative and important space.	*
Misc - Cyclorama	Cambridge	Festival	II*	1926, fixed as part of first modern open stage ensemble in UK c.12m high	A*
Sound, light, electric	Cambridge	Festival	II*	concrete bridge to support 20 concealed Schwabe horizon floods for lighting cyclorama c1926	A*
Stage revolves	Cambridge	Festival	II*	important 4.6m wooden turntable manual revolve, part of 1926 creation of first modern open stage	A*
Sound, light, electric	Chatsworth	Chatsworth House	I	houses some very old lighting battens - electric installation on gas ?	C
Scenery, act drops	Chatsworth	Chatsworth House	I	act drop by William T Hemsley from 1897 on a tumbler and in use, plus c. 30 other pieces	B
Above Stage	Chatsworth	Chatsworth House	I	elements from fit ups of 1897 through to Edwardian period, mainly used for box sets	D
VF - Auditorium walls	Colchester	Mercury		retractable side walls based on scaffold towers to create/reveal open stage - 1972	C
Misc - Cyclorama	Coventry	Belgrade	II	purpose built 2 dimensional as rear stage wall in UK's first large post war theatre 1958	C
Above Stage	Douglas IoM	Gaiety	yes	original 1900 scenic forks all in situ, original drum and shaft on grid	B
Below Stage	Douglas IoM	Gaiety	yes	complete and workable re-creation per 1900 incorporating much material salvaged from elsewhere	B
Misc - Sun burner	Douglas IoM	Gaiety	yes	burners reinstated with electric simulation	C
Paint frames, shops	Douglas IoM	Gaiety	yes	paint frame, with counterweights and original timber windlass complete with paint floor	B
Scenery, act drops	Douglas IoM	Gaiety	yes	elaborate 1900 act drop by Wm Hemsley, restored and in use - arguably the best in UK	A
Sound, light, electric	Douglas IoM	Gaiety	yes	original 1900 gas plate for front of house and emergency lighting survives in situ in box office	D
Above Stage	Edinburgh	King's	A	'transformation' drum/s and shaft/s still remain above the grid	C
Paint frames, shops	Edinburgh	King's	A	original 1906 paint frame reportedly in situ, may still be intact and in use	C
Scenery, act drops	Edinburgh	Royal Lyceum	A	stores house big collection of cloths ex Howard & Wyndham circuit, now owned (and used!) by Edinburgh Gang Show	C
VF - Auditorium walls	Eton	Farrer		1969 - proscenium/forestage and auditorium front side walls adjust to create limited thrust/arena stage	D
Sound, light, electric	Farnham	Redgrave	II	first multi-position access programmable show/working/cleaners lighting control in UK - 1974	D
Ensembles	Glasgow	Britannia	A	Music hall developed from 1857-1906 - unused and untouched since 1938, though stage has had temporary insertion on it and fire has done some damage above - primitive electric and gas fittings, and traces of basic suspension systems over stage. Deserves the 'time capsule' epithet. A full and detailed recording is needed to assess its full technological interest.	*
Sound, light, electric	Glasgow	Britannia	A	early wiring, gas and other fittings in building untouched since 1930's	C*
Above Stage	Glasgow	Citizens	B	drum and shafts on grid from 1878	C
Below Stage	Glasgow	Citizens	B	significant elements (traps, bridges, cradles) from 1878 - the best in Scotland	C
Get-ins	Glasgow	Citizens	B	very good example with separate narrow internal 2-part doors from paint and carpentery shops - c1878	B
Paint frames, shops	Glasgow	Citizens	B	complete and early (1878) paint shop and frames attached to theatre and still in use	A
Paint frames, shops	Glasgow	King's	A	complete paint frame with crossover bridge on downstage side, from 1904	C
Sound, light, electric	Glasgow	King's		dedicated low level provision for foh lighting (carbon arc), in grand circle boxes (1904?)	B
Safety - Openable roofs	Glasgow	Pavilion	B	in 1904 Bertie Crewe theatre and still opened regularly	A

Type	Town	Theatre	Listed	Item	Rating
Scenery, act drops	Glyndebourne	Opera House		Caspar Neher backcloth from 1938 festival - 'vivid colours and well preserved' - in archive	B
Sound, light, electric	Halifax	Alexandra Hall		stage with first Strand Grandmaster with Cecil round plate dimmers (1930s) now part of office building	D
Sound, light, electric	Halifax	Playhouse	II	concrete lighting bridge probably by Harold Ridge - 1949 or earlier.	D
Paint frames, shops	Harlow	Playhouse		moving paint bridge - 1971 theatre - oldest known extant example (cf Theatr Clywd 1974, Warwick 1975)	C
VF - Auditorium walls	Horsham	Christ's Hospital	II*	early (1975) use of moveable towers on castors intended to create proscenium opening and, in theory, other formats	B
VF - Complete systems	Hull	Donald Roy/ Gulbenkian	II*	early (1969) adaptable theatre for university drama dept. - periaktoid and bleachers, crossover doubled as paint bridge	B
Above Stage	Hyde	Theatre Royal	II	late example (1907) of wooden grid, but jointed by bolted-on cast iron hangers, fly floors on steel beams. Unusual roof structure and orientation above	C
VF - Stages	Inverness	Eden Court	A	sliding stage to reveal orchestra pit - 1976	C
Safety - Safety Curtains	Leeds	City Varieties	II*	roller safety curtain in firebreak stud wall	C
Get-ins	Leeds	Grand	II*	cloth slide from 1879 - the only known surviving example in the UK	A
Paint frames, shops	Leeds	Grand	II*	original 1879 paint frame now motorised (original timber drum and shaft still in situ), plus 2nd paintshop/frames above upstage	B
Safety - Safety Curtains	Liverpool	Olympia	II*	hydraulic ram from 1905 still in situ	D
Sound, light, electric	Liverpool	Royal Court	II	grand master still in situ - used until 2005! 2 original Stelmar follow spots (1938) remain in their room	C
Stage revolves	Liverpool	Royal Court	II	large 10.5m and important feature (by Lift and Engineering) from 1938 rebuild	B
Below Stage	Llandudno	Grand	II*	important wooden installation from 1901 - the best in Wales	B
Sound, light, electric	London	Adelphi	II	early dedicated provision for high level foh lighting from auditorium sides - from 1930 remodelling	C
Above Stage	London	Alexandra Palace	II	large wooden fly floors and grid from 1875 with drums and shafts, best and most complete example of its type	A*
Below Stage	London	Alexandra Palace	II	large and impressive installation of 1875 etc, but in disrepair and a restoration would be conjectural	C*
Ensembles	London	Alexandra Palace	II	Massive white elephant rebuilt in 1875 and altered at various times to 1922, but the stage house, unused for 70 years, still has important wooden understage and unique above-stage installations. Also rare gas and electric material, probably from 1875 and c1922 respectively. Some items acquired from around the UK for the collection of a (now defunct) Museum of Theatre Technology is also stored on the site and must also now be at risk.	*
Sound, light, electric	London	Alexandra Palace	II	early electric wiring - c14 colour coded dip sockets, battens, floods and liquid dimmers c1922; also evidence of gas installation incl pipes/hoses c1875	A*
Stage surfaces	London	Alexandra Palace	II	downstage stage surface (probably replaced early C20 as part of electrics lighting changeover) still shows tops of bridges etc and carpet cut	C*
Sound, light, electric	London	Apollo	II	first dedicated low level provision for foh lighting (carbon arc), between the boxes - 1901	B
Above Stage	London	Barbican	II	anchor chain counterweighted compensating lighting cable management windlasses	C
Safety - Safety Curtains	London	Barbican	II	cranked design 10'' thick with rockwool filler, 2 piece, oil buffer - by Knights (HSE) 1982.	C
VF - Auditorium walls	London	Beck		top-hung side auditorium moveble walls to adjust proscenium width - 1977	D
Below Stage	London	Churchill, Bromley		elaborate 1977 continental style installation, incl working set lift and unused side stage wagons	B
Paint frames, shops	London	Cochrane		complete scenery workshops including paint frame for training theatre from 1965 - now threatened	B
Safety - Openable roofs	London	Coliseum	II*	jigger ram and other elements from Matcham's 1904 rotating 'hit and miss' example	C
Safety - Safety Curtains	London	Coliseum	II*	original hydraulic ram on proscenium wall d/s/l and house curtain ram on proscenium wall d/s/r	C

Type	Town	Theatre	Listed	Item	Rating
Sound, light, electric	London	Coliseum	II*	multi cellular horns built into auditorium above front stalls exits c1930's	C
Stage surfaces	London	Coliseum	II*	timber stage surface and remnants of important 1904 triple revolve buried below new top	D
Above Stage	London	Comedy	II	1881 wooden grid including 3 good drums and shafts from various dates, types and makers	C
Above Stage	London	Drury Lane TR	I	elements from very old (1822) and later flying systems; only theatre still using pig tails as sole rope locks ?	B*
Below Stage	London	Drury Lane TR	I	unique complex including elements from 1896 Asphelia system (imported from Vienna) and 4 c1898 and 1931 electric bridges	A*
Ensembles	London	Drury Lane TR	I	Predominantly 1812 - 1920's and still in use. Potential for earlier evidence from 1672 if properly investigated, but main interest relates to metal stage bridges (some imported from Vienna and now unique) and backstage scene docks and paint frames. The whole building is a high priority candidate for a full Conservation Plan, but the backstage areas are at particular and constant risk as an inevitable consequence of the theatre's intensive use as one of the most important and successful venues in the West End. Recent works necessitated to accommodate a production of 'The Lord of the Rings' set a useful precedent for how change can be managed in such a sensitive environment.	*
Paint frames, shops	London	Drury Lane TR	I	important paint frames and scenery stores still in use - mainly rebuilt early 1900s	A*
Safety - Safety Curtains	London	Drury Lane TR	I	good example (?1923) with painting on front face and hand winch	B*
Scenery, act drops	London	Drury Lane TR	I	misc cloths of various ages in stores backstage	C
Below Stage	London	Duke of York's	II	large horizontal drum in stage cellar reputedly for Peter Pan in 1904	C
Safety - Safety Curtains	London	Duke of York's	II	c.1894, may be oldest surviving workable hand winch	C
Stage surfaces	London	Duke of York's	II	very early (?pre 1900) example of original c.1892 raked stage being levelled	D
Paint frames, shops	London	Flitcroft Street	II	Elms Lester Painting Rooms (1903 & 1934) - now a design studio - frames intact and in some use	B
Get-ins	London	Garrick	II*	possibly the narrowest exterior two tier doors, a good example from 1889	C
Above Stage	London	Her Majesty's	II*	very good grid, drums and shafts from 1897 as part of complete installation	A*
Below Stage	London	Her Majesty's	II*	best and most complete original wooden stage installation in UK - 1897	A*
Safety - Safety Curtains	London	Her Majesty's	II*	water hydraulic with full stroke piston cylinder (?1897), now only known working example	B*
Stage surfaces	London	Her Majesty's	II*	reputedly the first flat stage in Britain - 1897 and part of complete installation	A*
Ensembles	London	Her Majesty's	II*	The most complete and important original (1897) wooden stage installation in the UK both above and below, also the first flat stage in the UK. Home since 1986 to the long running 'Phantom of the Opera', a most appropriate choice, the technical demands of which were carefully interleaved into the Victorian structure on the basis that any original material temporarily removed will be reinstated at the end of the run. A good example of how a uniquely important heritage interest can be shown to be compatible with a role as a working theatre.	*
Misc - Thunder run	London	Her Majesty's	II*	original thunder run from 1897 on stage left gallery	A*
Safety - Safety Curtains	London	Lyric	II	hydraulic safety curtain still working here - ? DATE	C
Stage revolves	London	Lyric	II	large and important revolve from 1932 - 11.5m - replaced 2 original hydraulic lifts from 1888	B
Stage revolves	London	Mermaid		small hand operated revolve from 1959	D
VF - Auditorium floors	London	New London		auditorium/stage revolve with lifts to form auditorium seating stepping, plus periaktoids to define stage area - 1973	B
Paint frames, shops	London	Newport Street	II	the most ambitious and complete early (1913) workshop to have survived as a unit, now threatened	B
Above Stage	London	Normansfield	II*	unique surviving grooves set (incl long groove) and partial flying system from 1879, recently restored	A*

Type	Town	Theatre	Listed	Item	Rating
Ensembles	London	Normansfield	II*	1879 time capsule, complete with the UK's largest collection of original purpose built scenery and fittings, many of them believed to be unique survivals. The only scenic groove system still extant and in use, traces of original gas fittings, early electric lighting still in use, original act drop tumble mechanism. All preserved practically intact, largely through lack of use, being in a private theatre in a former psychiatric hospital - far and away the most ambitious of its type. Now largely restored and returned to a public use.	*
Misc - Sun burner	London	Normansfield	II*	Fine original from 1879 plus some ducting (also remains of smaller stars in basement)	A*
Safety - Sprinkler System	London	Normansfield	II*	extensive manually operated sprinkler system from 1879 including control panel and taps [? Sprinkler or gas]	A*
Scenery, act drops	London	Normansfield	II*	most complete surviving set of scenery in UK - c.1879 - over 100 pieces by well known makers, designed for groove system or on tumblers	A*
Scenery, act drops	London	Normansfield	II*	1879 act drop for tumbler mechanism - (currently rolled and in store) - replica now in use on original roller and counterweight etc	A*
Scenery, act drops	London	Normansfield	II*	6 of the set portraits by Ballard for original Savoy Theatre production of Ruddigore now fastened to walls	A*
Sound, light, electric	London	Normansfield	II*	early electric lighting battens c 1930 (restored), footlights1922-36, board c1950, traces of gas fittings	B*
Paint frames, shops	London	NT	II*	major workshop facility from 1976 - incl 3 paint frames on hydraulic and lateral lifts and 1 fixed side frame	B
VF - Complete systems	London	NT - Cottesloe	II*	the NT's demountable studio space in courtyard form, hugely admired and imitated - 1977	B
Safety - Safety Curtains	London	NT - Lyttleton	II*	first in UK with 2 piece from above and below - 1976. (Barbican was designed first)	C
VF - Stages	London	NT - Lyttleton	II*	adjustable stage rake from 1976 on hydraulic screw system and continental type adjustable sliding proscenium	B
Above Stage	London	NT - Lyttleton and Olivier	II*	a few original counterweighted lighting cable windlasses, not in use (see also Barbican)	D
Above Stage	London	NT - Olivier	II*	grid hoisting installation, adapted from TV studio, unusual in a theatre situation	C
Stage revolves	London	NT - Olivier	II*	massive drum revolve conceived for 1976, unique in having 2 semi-circular elevators and revolving semi-circular disk at top - also forms alternative scenery access	A
Paint frames, shops	London	NT Studio (Old Vic Annex)	II	early (1957-8), purpose built workshop, now in use as studio/archive/education centre - paint frame recently recorded and removed	C
Above Stage	London	Palace	II*	2 drums and shafts from 1891	C
Below Stage	London	Palace	II*	substantial elements from 1891 installation incorporating rails for continental scenery chariots (now unique in UK)	B
Sound, light, electric	London	Palladium	II*	multi cellular horns built into auditorium above front stalls exits c1930's	C
Below Stage	London	Piccadilly		first modern demountable stage in UK - 1968	C
Stage surfaces	London	Piccadilly		first totally removable modular stage - 1968, still in use	C
VF - Reducing capacity	London	Piccadilly		moveable ceiling by Peter Moro to close upper circle - mid 1970's - first in UK? - now inoperable	C
Below Stage	London	Playhouse	II	substantially complete (no sloats) late wooden installation reinstated in 1907, restored 1987 with some new parts and safety elements	B
Misc - Thunder run	London	Playhouse	II	1907 (or earlier) working thunder run and cannon ball lift under stage against rear wall	C
Above Stage	London	Queen's	II	double purchase counterweight sets with hand winch adjustment to allow long travel of load for rigging	C
Paint frames, shops	London	Queen's Row/Horsley St	II	oldest commercial workshop - paint frames rebuilt by Harker 1904 - may be under threat	C
Sound, light, electric	London	Questors		very early exposed lighting bridges - 1964 (first were at Chichester 1962)	C
VF - Complete systems	London	Questors		originally claimed to be first (1964) flexible theatre space in England - relatively little altered since	C
Safety - Openable roofs	London	Shaftesbury	II	in 1911 Bertie Crewe theatre - and still opened on an occasional basis	B

Type	Town	Theatre	Listed	Item	Rating
Safety - Openable roofs	London	Shepherds Bush Empire	II	in 1903 Matcham - Seems unlikely that it is still operable	D
Below Stage	London	St Martin's	II	significant elements from 1916 - a very late and relatively complete example	B
VF - Complete systems	London	St Mary's College, Twickenham		very early (1963) adaptable studio space with fully trapped floor, 124 rostra and clip-on bench seats below continuous open grid. Also has/had(?) rudimentary cyclorama cone	C
Safety - Openable roofs	London	Victoria Palace	II	in 1911 Matcham - still workable	B
Get-ins	London	Victoria Palace	II	typical Matcham of 1911 (cf Bristol Hippodrome is a better example)	D
Scenery, act drops	London	Westminster School	I	2 backdrops from 1858 (CR Cockerell / Frederick Fenton)	A
Scenery, act drops	Macclesfield	Capesthorne Hall	II*	Gondola/Venetian scene act drop (c1890) in private theatre	C
Stage surfaces	Manchester	Opera House	II	3 motorised full prosc width elevators to travel -10 to +4ft with pit lift wagon to rear stage for band. 1950s	C
Above Stage	Margate	Theatre Royal	II*	1787 grid unlikely to have survived, so probably 1874, but fly rails and conical tab drum could be original	B
Misc - Sun burner	Middlesbrough	Empire	II*	original (1889) sun burner in auditorium mentioned in statutory list description	B
Sound, light, electric	Morecambe	Winter Gardens	II*	cap and casing electrical distribution on proscenium wall (1898?)	B
Above Stage	Newcastle-upon-Tyne	(Journal) Tyne	I	complete and workable installation from 1867, recreated after 1995 fire, original workshop above	B*
Below Stage	Newcastle-upon-Tyne	(Journal) Tyne	I	complete and workable 1867 installation recreated in 1996 after fire	B*
Ensembles	Newcastle-upon-Tyne	(Journal) Tyne	I	Complete backstage from 1867 rediscovered and restored to working order in the 1980's and then recreated in 1986 after a fire. Part of one of the best and most complete of the handful of mid-Victorian theatres that survive in the UK. Preserved by neglect and its early (1919) conversion to use as a cinema. Still underused and at some risk in its current role as a music venue.	
Paint frames, shops	Newcastle-upon-Tyne	(Journal) Tyne	I	carpenter's workshop 1867 above auditorium ceiling - may be only example left - this was once common practice.	B*
Sound, light, electric	Newcastle-upon-Tyne	(Journal) Tyne	I	gas footlights restored and adapted to working order - now unique in UK, but ? removed since	B*
Sound, light, electric	Newcastle-upon-Tyne	(Journal) Tyne	I	original gas plate survives, (also, per list description, 'complete switchboard for earliest electric lighting')	C*
VF - Complete systems	Northampton	Derngate		first large permanent multi form auditorium, based on moveable 2 storey towers and other units on air bearings - 1982	A
Above Stage	Northampton	Royal	II	some of fly tower contents appear relatively unchanged since 1889, including a drum and shaft	D
Get-ins	Northampton	Royal	II	get-in crane winch on SL fly floor	B
Paint frames, shops	Northampton	Royal	II	very important early paint shop and (altered) frame, adjacent to and which may predate present 1884 theatre	A
Scenery, act drops	Northampton	Royal	II	1896 act drop by Ernest Howard in store; a smaller one of 1879 by W Maugham from the earlier theatre was in Borough Museum	C
Stage revolves	Nottingham	Playhouse	II*	early example of lightweight modern construction - 1963 - 8m - misaligned and rarely used	D
Safety - Safety Curtains	Paignton	Palace Avenue		safety curtain on tumbler roller (1936) as no flying height, modified c1995	C
Stage surfaces	Penzance	Penzance Theatre	II	oldest surviving stage surface, complete with position of former traps - 1787	B
Misc - Thunder run	Plymouth	Globe	II	thunder run behind prosc arch with original cannon balls from 1831	B
VF - Reducing capacity	Plymouth	Theatre Royal		moveable ceiling to close upper circle designed in by Peter Moro as intrinsic part of his new building - 1982	C
Scenery, act drops	Richmond (Yorks)	Georgian TR	I	unique early C19 woodland scene (c.8 pieces now in theatre's museum), with replicas now on stage	A

Type	Town	Theatre	Listed	Item	Rating
Stage surfaces	Richmond (Yorks)	Georgian TR	I	surviving timbers below show position of former traps - 1788	A
Below Stage	Salford	Victoria	II	structural framework and elements of wooden machinery from 1899 incl evidence of scruto sliders	C
Scenery, act drops	Settle	Victoria Hall	II	act drop recently discovered depicts market square, now restored and rehung - c. 1888	C
VF - Reducing capacity	Shepton Mallet	Academy/Amulet		1974 - motorised ceiling descends to flat floor carrying raked seating - may be last working example	C
Scenery, act drops	Southborough	Salomon's Centre	II	unusual mahogany cloth rollers (top and bottom)	B
Above Stage	Southsea	King's	II*	original grid and set of winches etc from 1907, also smoke vents	B*
Below Stage	Southsea	King's	II*	interesting as late (1907) example of a wooden understage that was never fitted out	D*
Ensembles	Southsea	King's	II*	Important as the most unaltered example of a Frank Matcham theatre (1907) with much original material, and now under a management that is keen to exploit its heritage interest. Auditorium and front of house similarly unaltered. The whole building is now gradually being sensitively repaired and restored after many years of preservation through neglect.	*
Get-ins	Southsea	King's	II*	original external beam for hoisting skeps to wardrobe	D*
Misc - Riser microphone	Southsea	King's	II*	on chain mechanism and still workable, currently in store. (cf London Palladium in store, Sheffield Lyceum stored at Newcastle Tyne)	B*
Paint frames, shops	Southsea	King's	II*	typical and good example of paint frame from 1907, though not operable at present	C*
Ensembles	Stanford on Soar	Stanford Hall	II*	Stylish art deco theatre, originally built for private use and also equipped for cinema, from 1938. Original and rare Blackburn & Starling electro mechanical system (control and dimmer bank) in situ but disconnected. In use until 1980's. Original counterweight flying, Wurlitzer Organ (ex Theatre de la Madeleine in Paris) on organ lift, and unaltered projection room for film and slides and proscenium decorative lightng (Brenograph system). Dark since 2003 and under threat.	*
Sound, light, electric	Stanford on Soar	Stanford Hall	II*	1938 Blackburn & Starling electro-mechanical system (control and dimmer bank) in situ but disconnected. In use until 1980s - unique in UK and valuable	A*
Safety - Safety Curtains	Stoke on Trent	Mitchell Memorial		very good working example of asbestos roller curtain - 1957	C
VF - Auditorium floors	Stoke on Trent	Mitchell Memorial		earliest modern (1957) partially tilting auditorium floor	B
Above Stage	Stratford-upon-Avon	Royal Shakespeare	II*	Traces of former cyclorama track	B
Ensembles - ex	Stratford-upon-Avon	Royal Shakespeare	II*	The true importance of this building in technological terms only became apparent during the course of this survey and as plans for its major redevelopment were unveiled and demolition started. The 1932 building was technologically advanced for its day and far more had survived backstage than in its auditorium. Items of special interest included teak modular stage floor with 2 interlockable bridges, 2 rolling side stages and a set of tracks, counterweighting system, spiral staircase, dock door, remnants of tracking for plaster cyclorama, front of house lighting slots. Material not retained is being fully recorded and offered for salvage. Sadly this can no longer qualify as an ensemble, but it has been decided to retain this pre 2007 description here.	
Paint frames, shops	Stratford-upon-Avon	Royal Shakespeare	II*	paint frame bridge (1932) with shelf and upstand, guides stage left, plus small room for preparation	C
Above Stage	Wakefield	Stanley Royd	II	elaborate groove system from 1893 in disused former hospital theatre	B
Above Stage	Wakefield	Theatre Royal	II*	drum and shaft survives from paint frame - now stored on SR fly floor	C
Misc - Sun burner	Wakefield	Theatre Royal	II*	unrestored example from 1894	B

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