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*The Challenge of Installing
Building Services in Historic
Buildings*



Heating

- Usual problems – not enough heat being generated – requirements and expectations have changed
- Heating system has been altered and 'mucked about with' many times over the years
- The radiators are painted the wrong sort of colour for maximum effectiveness
- Poor, or total lack of, controls/badly located thermostats

Interesting point.....

Building services are often viewed as the 'youngest' and least historically significant part of a listed building



Example of lost early Perkins heating system



Existing early systems can be put to good use



Why was one destroyed and the other saved?

- The first church did not ask for advice from English Heritage or CIBSE Heritage Group
- The second church wanted to keep its heating system but needed it to perform more effectively
- The solution agreeable to all was very simply adding a better pump set, adding additional plain radiators and replacing some pipework and introducing a zoning system to the heating layout so that it could be controlled more effectively.

General guidance for listed buildings

- Save money and history by reusing existing equipment such as pipework and radiators. Rare 'Perkins' and 'Grundy' heating systems capable of being incorporated into expanded and enhanced schemes.
- Rare examples of equipment that cannot be reused should be left preserved insitu and bypassed. Install another heating system in addition as the National Trust have done at Craigside House.
- Early survivors are beginning to be included in the listing system so will be protected.
- Reuse existing holes, slots and risers to run pipework - even if this is not necessarily the most efficient way of installing the system, it is preferable to drilling new builders work holes.
- Run the system in conservation mode as background heating at say 8 – 9 deg C, it will be easier on the building fabric and will require less in the way of response time from the heating system

An example of a heating system still in operation and unaltered except for boiler and pumping set



Shipdam, Norfolk



Other examples



Lighting

- If a listed building has no use then it will fall into decay, modern building use requires modern lighting standards
- This does not necessarily cause conflict, the two can sit in harmony
- Let the new or additional lighting follow the rhythm of the building and the existing lighting – in some cases the heritage light fittings can be upgraded with modern lamps



Lighting has developed more quickly than heating

We have come from candles and oil to gas and electric light

Now we are in the age of the LED which actually could be the listed buildings friend

They operate at lower temperatures and emit no UV. Now they are available in a range of colour temperatures and last up to 35,000 - 50,000 hours

They also come in shapes and sizes that mimic their predecessor the 'light bulb'

LED replacements for tungsten candle lamps



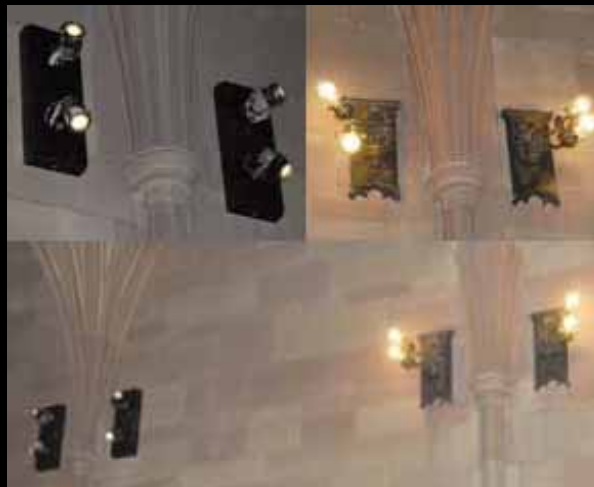
LED replacements for GLS lamps



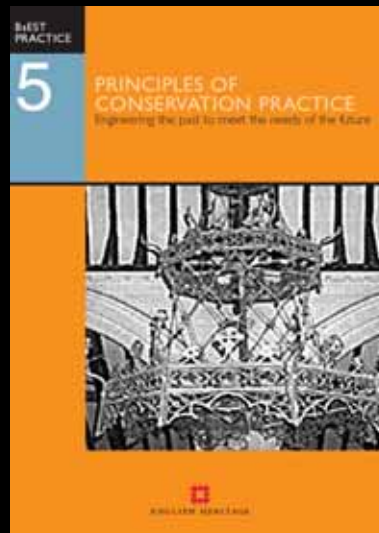
Samples of heritage lighting in use



Supplementing existing lighting



Available guidance



Rules of engagement

- Minimum intervention – unless this is followed irreplaceable historic fabric loss will occur.
- Where routes for services already exist they must be reused even if they do not provide the optimum route.
- Traditional installation methods may have to be abandoned and a little lateral thinking take place before a solution may be found.
- You may find that small items such as light fittings may have to be mounted on a patch to ensure that fixings can be obtained in mortar joints rather than into brick or stonework, making all fixings totally reversible and therefore leaving no permanent scarring.
- When carrying out work in a heritage building use this as an opportunity for a survey of the building as often there are no records plans

Decision making flow chart



My Alter-ego?

I am Senior Building Services Engineer for

English Heritage



I am part of a small team, expressly employed to help you with any issues concerning building services and your heritage building stock

Thank you

Any questions??

