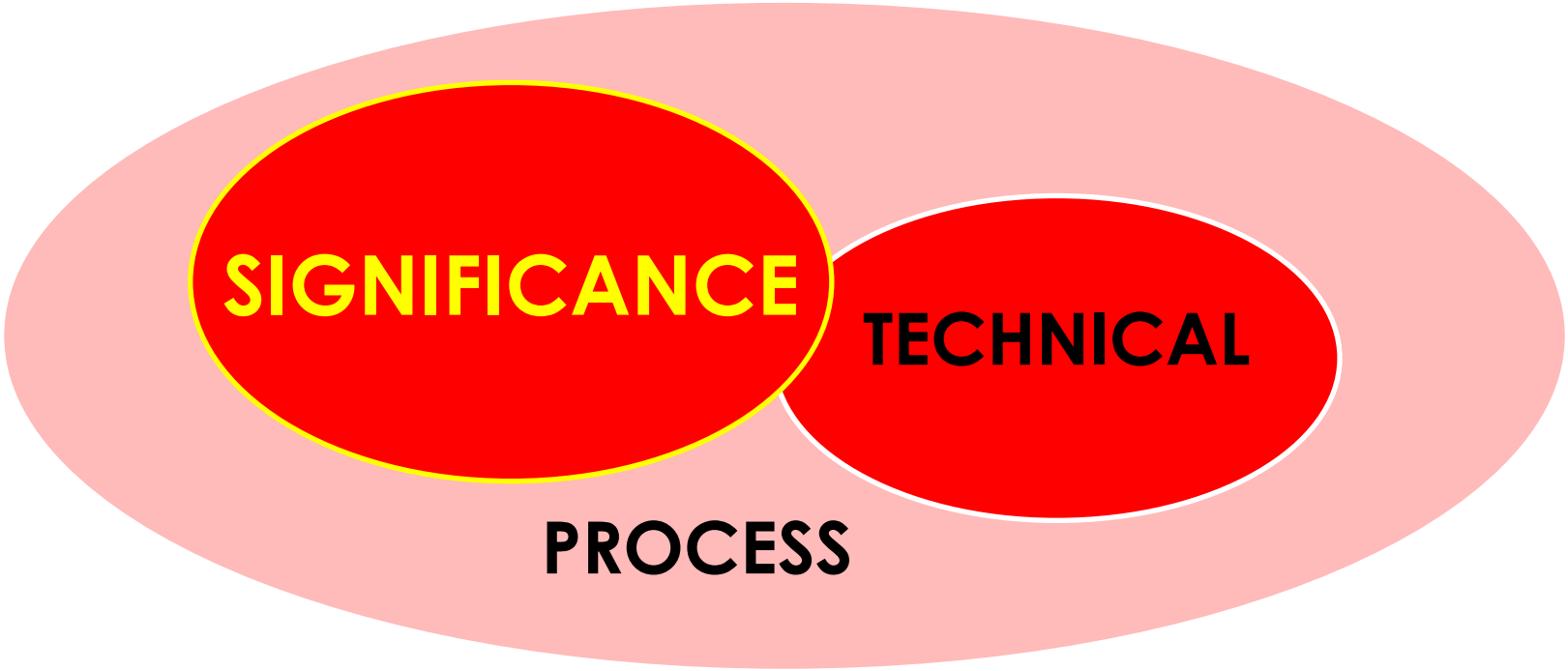
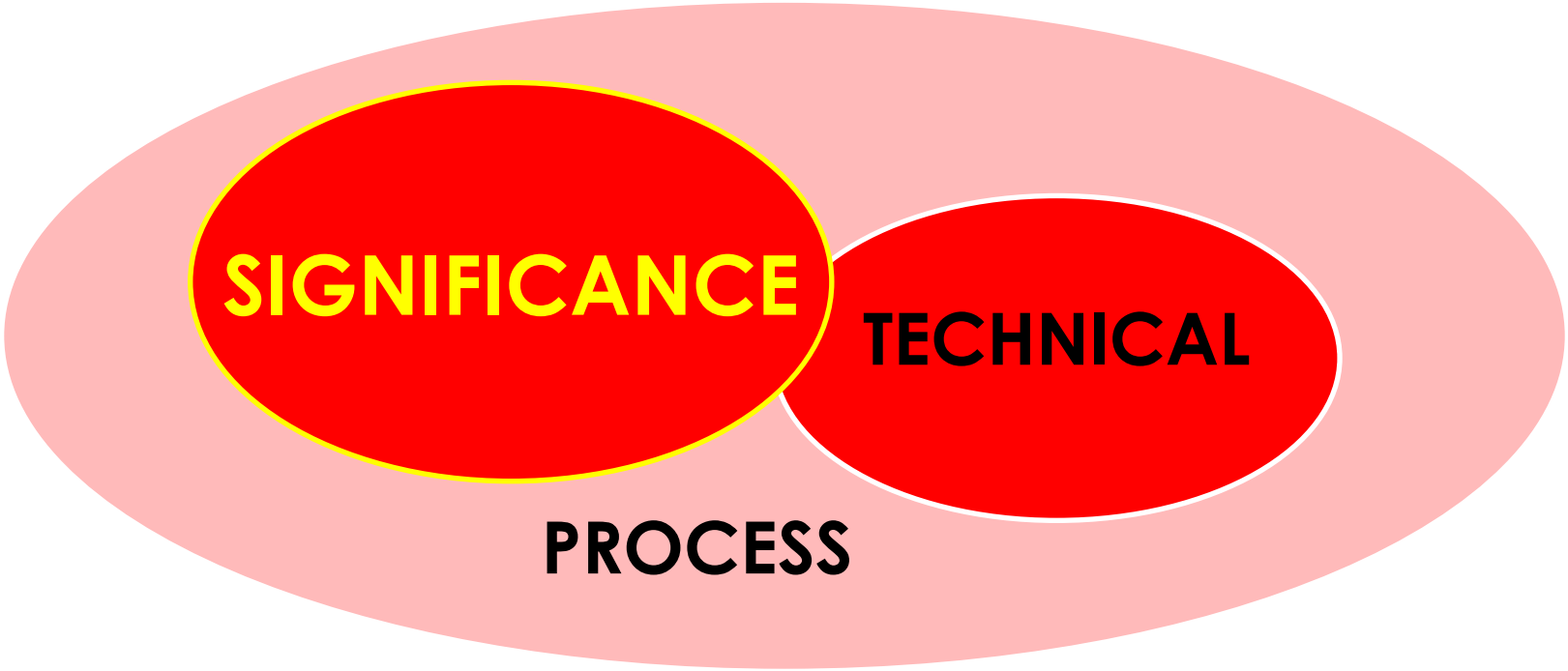
Planning Retrofit

Three elements…



Planning Retrofit

Three elements…



All buildings have some 'significance' even if its tiny…

Planning Retrofit

BS 7913: 2013: Section 4: Heritage values and significance

4.1 Use of significance in the management of the historic Environment

*"Significance **represents a public interest**…"*

"Research and appraisal into the heritage values and significance of the historic building should be carried out to ensure that decisions resulting in change are informed by a thorough understanding of them". This is proportionate.

"Understanding the significance of a historic building enables effective decision…"

Planning Retrofit

BS 7913: 2013: Section 4.2 Values contributing to significance

*"Heritage has **cultural**, **social**, **economic** and **environmental** values. The attributes that combine to define the significance of a historic building can relate to its physical properties or to its context"*

So SIGNIFICANCE can be a very broad value and it MUST be UNDERSTOOD

Planning Retrofit

BS 7913: 2013: 4.2 Values contributing to significance

Heritage values assessed into groups:

a) **aesthetic value** - ways in which people draw sensory and intellectual stimulation from a place;

b) **communal value**, - the meanings of a place for people who relate to it in different ways, associations with social groups and individuals;

c) **evidential value** -potential of a place to yield evidence about the past (e.g. archaeology); and

d) **historical value** - ability of a place to demonstrate or illustrate an aspect of the past or association with historic figure or event.

Planning Retrofit

OR Individual heritage values:

1) architectural, technological or built fabric value;
2) townscape characteristics;
3) spatial characteristics;
4) archaeological value;
5) artistic value;
6) economic value;
7) educational value;
8) recreational value;
9) social or communal value;
10) cultural value;
11) religious value;
12) spiritual value;
13) ecological value;
14) environmental value;
15) commemorative value;
16) inspirational value;
17) identity or belonging;
18) national pride;
19) symbolic or iconic value;
20) associational value;
21) panoramic value;
22) scenic value;
23) aesthetic value;
24) material value; and
25) technological value

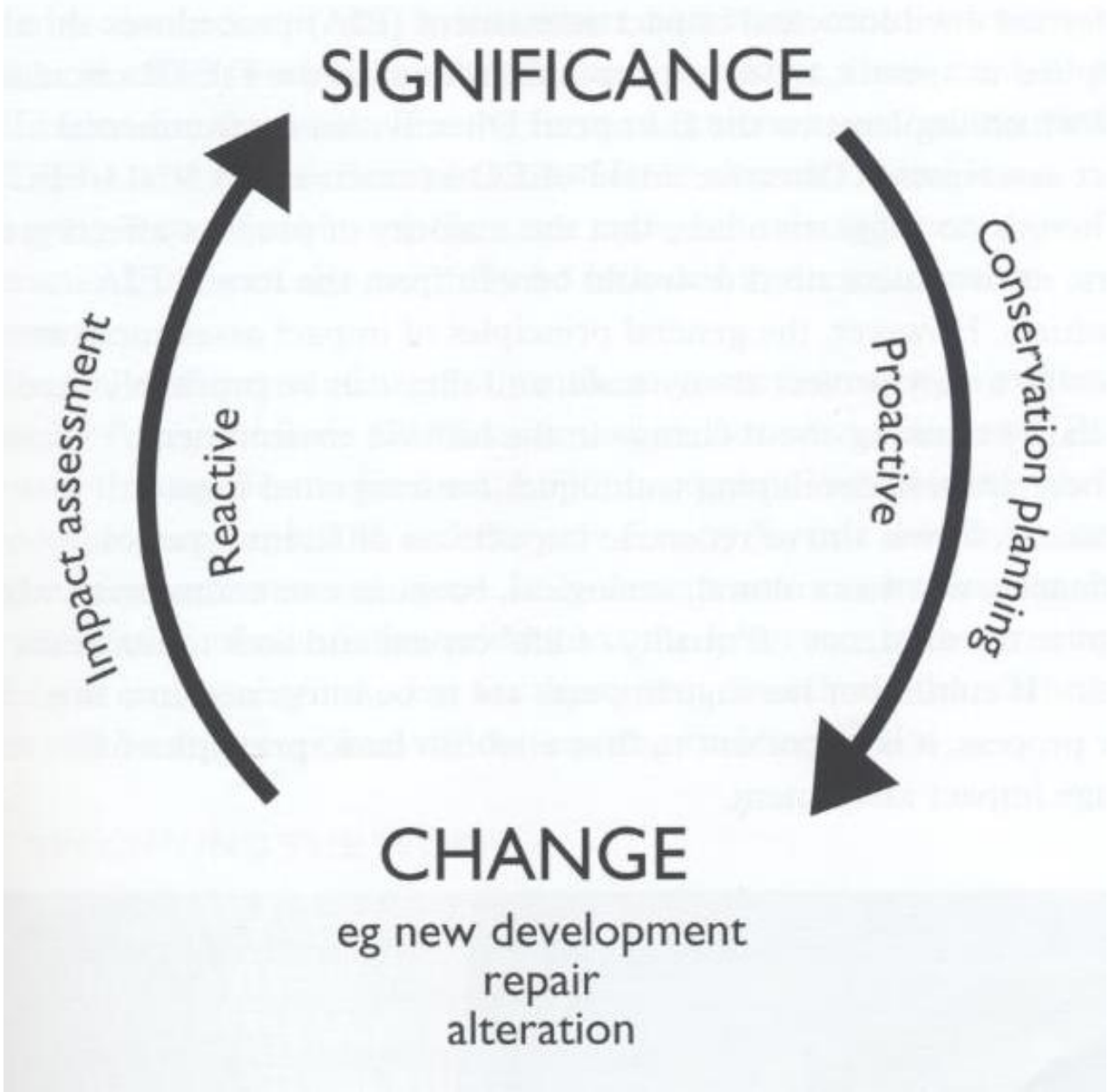
Planning Retrofit

BS 7913: 2013: Section 4.3 The assessment of significance

A wide range of factors contribute to significance and their relative importance varies:

- **Physical components**,
- Immediate and wider **setting**,
- **Use and associations** (e.g. with a particular event, family, community, or artist and those involved in design and construction).

Planning Retrofit

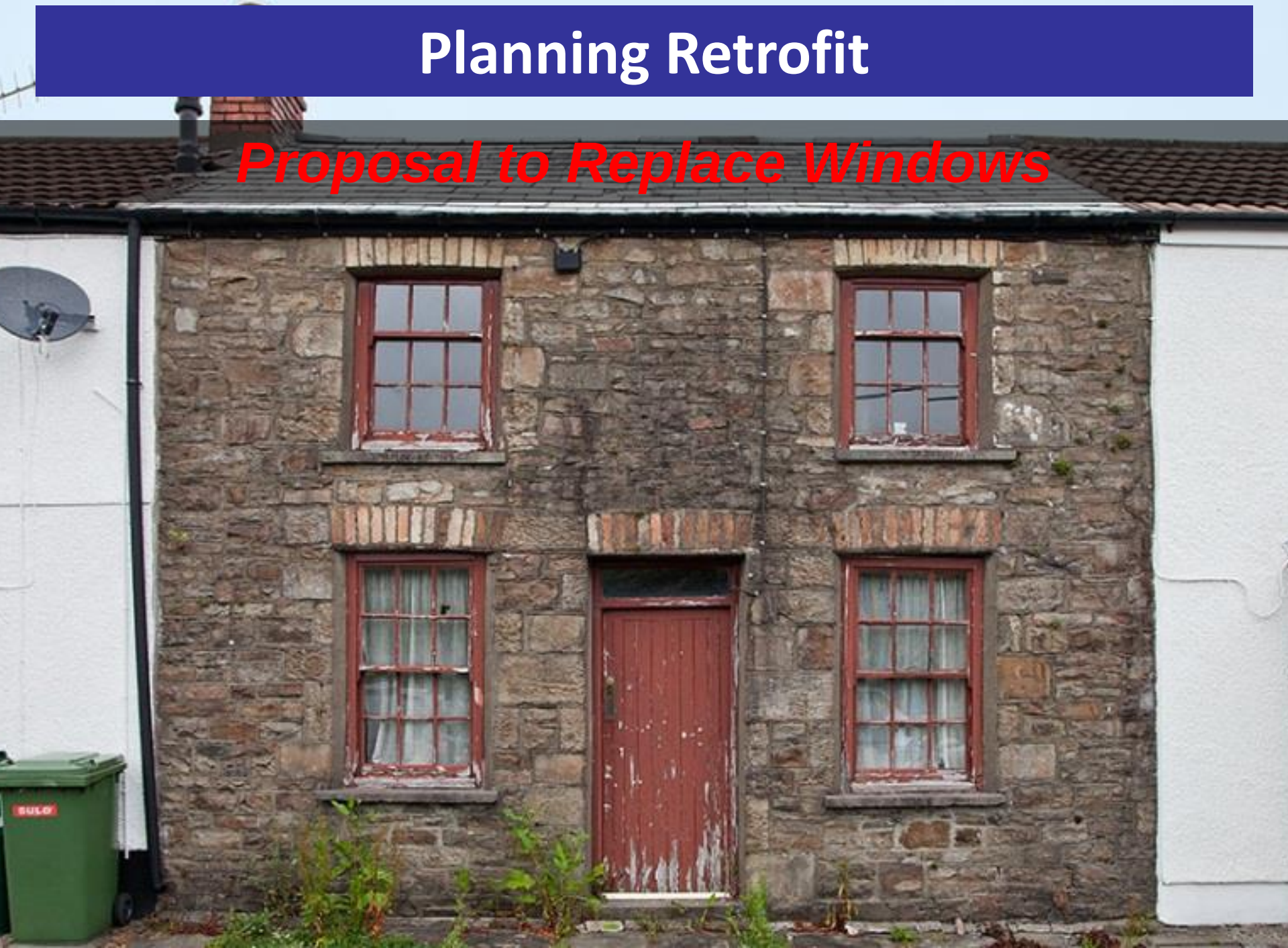


Planning Retrofit

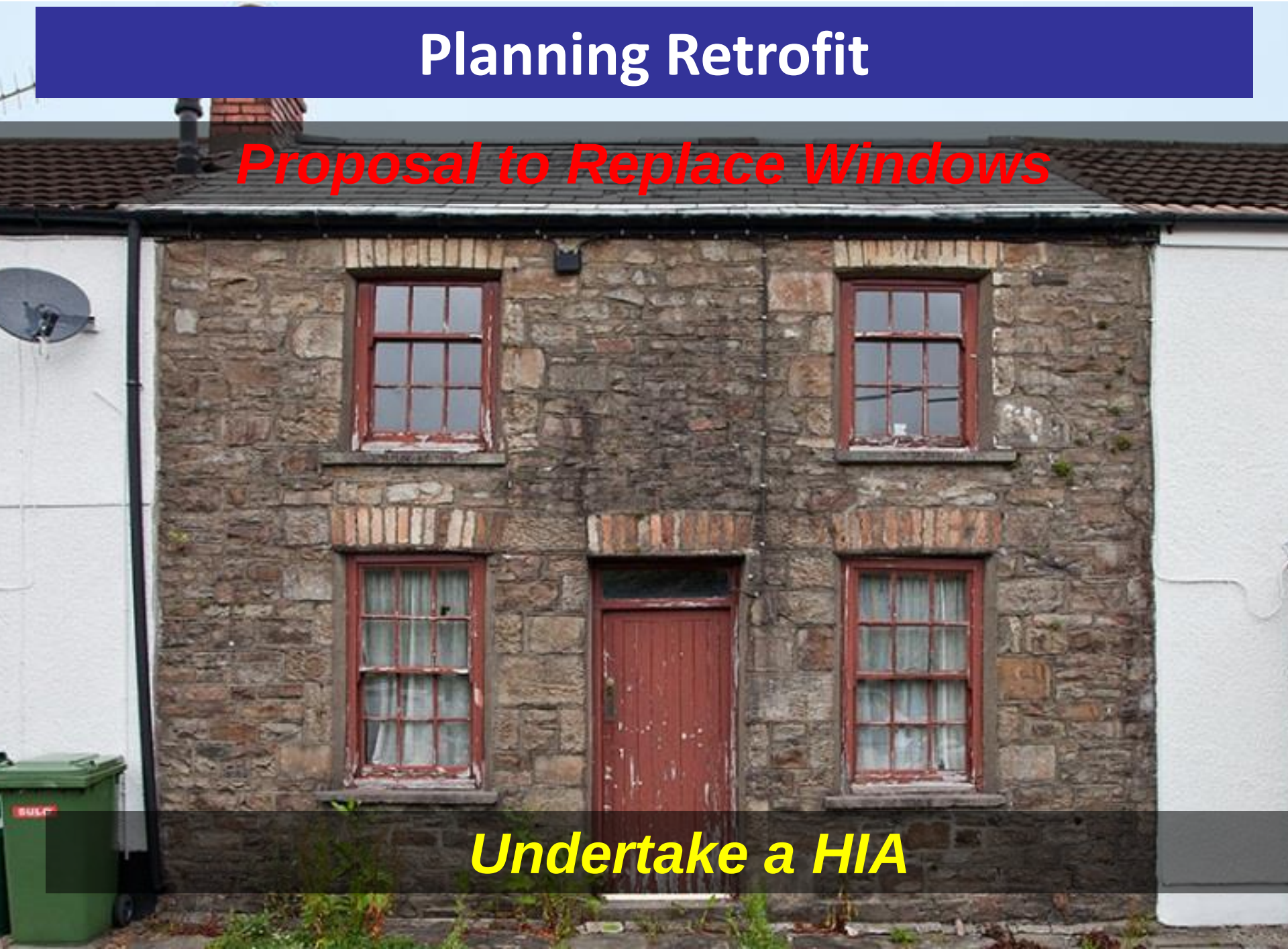
BS 7913: 2013: Section 5.9 Heritage impact assessments (HIA's)

- Measure impact of proposals on significance and determine mitigation.
- Must understand and articulate the 'significance' value.
- *"HIAs can be carried out at various levels of scale and complexity, from the effects of building works on a small structure to the effects of major development in a world heritage site".*

Planning Retrofit



Planning Retrofit



Planning Retrofit

Proposal to Replace Windows - HIA

Issues to consider are:

1. **Why?**
2. **Necessary?**
3. **Alternatives?**
4. **Impact on significance?**
5. **Mitigate impact – if its possible – how?**

Planning Retrofit

Heritage impact assessments (HIA's)

- Justify the work - why is it necessary? Is it REALLY necessary?
- Identify impact of proposals on significance of the site – not just aesthetics but a broader and deeper meaning
- Develop Proposals for mitigating adverse impact ~ design alternatives ~ further investigation – other means to minimise heat loss!

HIA Process

Proposal to Replace Windows

Proposed Work (from specification/ drawings)	**Significance of Fabric Effected** (explain why fabric is important)	**Potential Impact of Work** (decide whether the proposals put the fabric at risk)	**R & A Information** (information of a technical & significance nature & the process of obtaining it)	**Possible Mitigation** (ways of minimising any adverse impact)
Renew windows				

HIA Process

Proposal to Replace Windows

Proposed Work (from specification/ drawings)	**Significance of Fabric Effected** (explain why fabric is important)	**Potential Impact of Work** (decide whether the proposals put the fabric at risk)	**R & A Information** (information of a technical & significance nature & the process of obtaining it)	**Possible Mitigation** (ways of minimising any adverse impact)
Renew windows	Rare unaltered appearance (AESTHETIC) Illustrates a style of living (COMMUNAL) Helps to illustrate aspects of a past life (HISTORICAL)			

HIA Process

Proposal to Replace Windows

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Renew windows	Rare unaltered appearance (AESTHETIC) Illustrates a style of living (COMMUNAL) Helps to illustrate aspects of a past life (HISTORICAL)	Destroy unaltered appearance and the appearance of past life / community		

HIA Process

Proposal to Replace Windows

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Renew windows	Rare unaltered appearance (AESTHETIC) Illustrates a style of living (COMMUNAL) Helps to illustrate aspects of a past life (HISTORICAL)	Destroy unaltered appearance and the appearance of past life / community	Is the work necessary due to condition? Can they be thermally improved? How will new perform? Payback?	

HIA Process

Proposal to Replace Windows

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HIA Process

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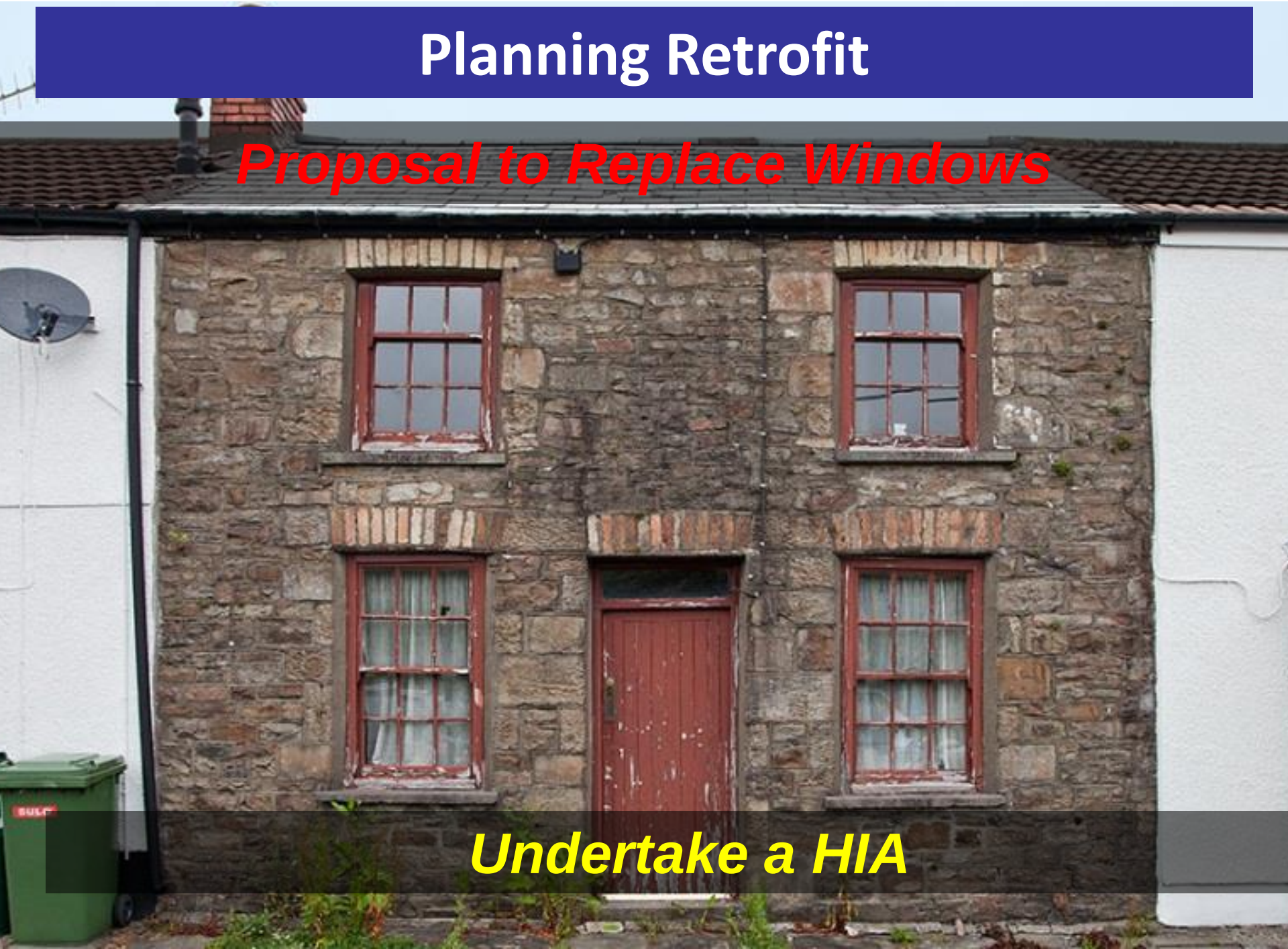
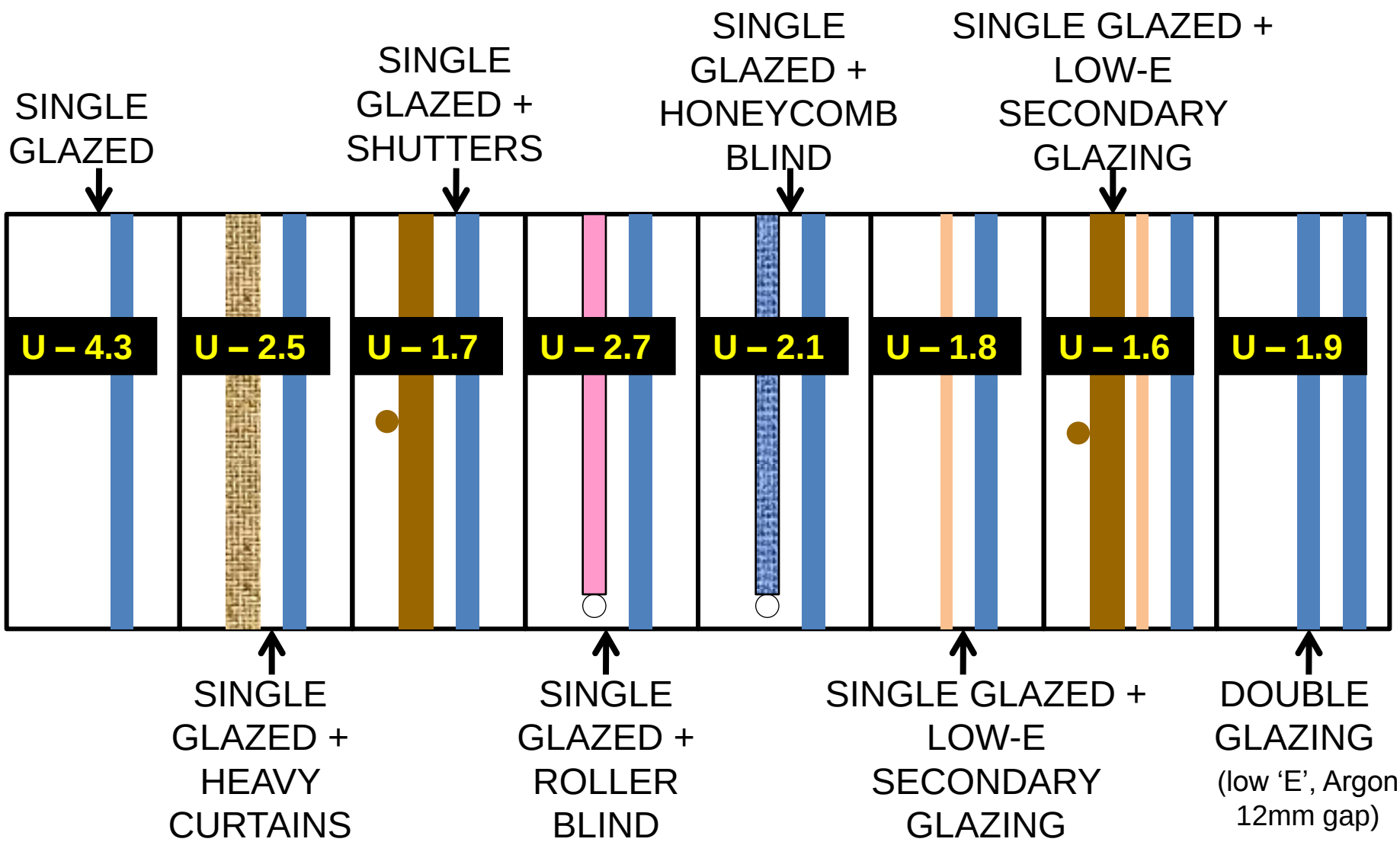
Planning Retrofit



Windows

Research by Glasgow Caledonian University



Planning Retrofit

External Wall Insulation

EWI – Assess the Impact by undertaking a HIA

Work out the significance of the ‘terrace’ and how this work impacts:

Planning Retrofit

Planning Retrofit

Proposal - EWI

Issues to consider are:

1. **Why?**
2. **Necessary?**
3. **Alternatives?**
4. **Impact on significance?**
5. **Mitigate impact – if its possible – how?**

Planning Retrofit

Heritage impact assessments (HIA's)

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HIA Basic Process

Proposed Work (from specification/ drawings)	**Significance of Fabric Effected** (explain why fabric is important)	**Potential Impact of Work** (decide whether the proposals put the fabric at risk)	**R & A Information** (information of a technical & significance nature & the process of obtaining it)	**Possible Mitigation** (ways of minimising any adverse impact)

Planning Retrofit

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HIA Basic Process

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Install EWI				

HIA Basic Process

Proposed Work (from specification/ drawings)	**Significance of Fabric Effected** (explain why fabric is important)	**Potential Impact of Work** (decide whether the proposals put the fabric at risk)	**R & A Information** (information of a technical & significance nature & the process of obtaining it)	**Possible Mitigation** (ways of minimising any adverse impact)
Install EWI	*A terrace is built as a building – homogeneous appearance is important especially with continuation of decorative features*			

HIA Basic Process

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Install EWI	*A terrace is built as a building – homogeneous appearance is important especially with continuation of decorative features*	*Loss of homogenous appearance especially regards the features*		

HIA Basic Process

Proposed Work (from specification/ drawings)	**Significance of Fabric Effected** (explain why fabric is important)	**Potential Impact of Work** (decide whether the proposals put the fabric at risk)	**R & A Information** (information of a technical & significance nature & the process of obtaining it)	**Possible Mitigation** (ways of minimising any adverse impact)
Install EWI	*A terrace is built as a building – homogeneous appearance is important especially with continuation of decorative features*	*Loss of homogenous appearance especially regards the features*	*How rare or popular this design was in the locality? Was there a reason for the design? Why was it built? How rare is a terrace without EWI? Wider setting considerations*	

HIA Basic Process

Proposed Work (from specification/ drawings)	**Significance of Fabric Effected** (explain why fabric is important)	**Potential Impact of Work** (decide whether the proposals put the fabric at risk)	**R & A Information** (information of a technical & significance nature & the process of obtaining it)	**Possible Mitigation** (ways of minimising any adverse impact)
Install EWI	*A terrace is built as a building – homogeneous appearance is important especially with continuation of decorative features*	*Loss of homogenous appearance especially regards the features*	*How rare or popular this design was in the locality? Was there a reason for the design? Why was it built? How rare is a terrace without EWI? Wider setting considerations*	*Is EWI really required? (payback, other means of saving energy). Is IWI more appropriate? EWI design the same as existing elevation*

Suitable for EWI?

BS 7913: 2013: Manage Significance

5.9 Heritage impact assessments (HIA's)

Building Regulations

Generally

Extensions need to meet current building regulations

Work to existing buildings does not need Approval unless extensive work is being undertaken – maintenance and repairs do not need approval

Generally buildings need to be upgraded when:

- **A 'material change of use'**
- **Energy status**
- **Previously unheated spaces converted e.g. garage to lounge.**
- **More than 50% of a thermal element is being renovated (e.g. render)**
- **More than 25% of the external envelope is being changed or renovated.**

Building Regulations

Consequential improvements

Section 12 – L1B

Dwellings of architectural or historical interest

4.1.3 Where consequential improvements are undertaken they should only be undertaken where they are technically, functionally or economically feasible. Those improvement measures identified here should typically be feasible.

Building Regulations

Consequential improvements

Section 12 – L1B
Dwellings of architectural or historical interest

4.1.3 Where consequential improvements are undertaken they should only be undertaken where they are technically, functionally or economically feasible. Those improvement measures identified here should typically be feasible.

Shouldn't there be proof of technical feasibility?

Building Regulations

Exemptions

Section 12 – L1B
Dwellings of architectural or historical interest

12.1 Exempt historic and traditional buildings

12.1.1 Works to the following classes of building are exempt from the ***energy efficiency requirements*** where compliance would unacceptably alter the character or appearance of the buildings:

a. listed in accordance with Section 1 of the Planning (Listed Buildings and Conservation Areas) Act 1990; or

b. in a conservation area designated in accordance with Section 69 of the Planning (Listed Buildings and Conservation Areas) Act 1990; or

c. included in the schedule of monuments maintained under Section 1 of the Ancient Monuments and Archaeological Areas Act 1979.

Building Regulations

Special Considerations

Section 12 – L1B
Dwellings of architectural or historical interest

12.2 Historic and traditional buildings where special considerations apply

12.2.1 In addition, special considerations apply to works to the following three classes of non-exempt existing buildings:

a. of architectural and historic interest and are referred to as a material consideration in a local authority's development plan or local development framework; or

b. of architectural and historic interest and are within national parks, areas of outstanding natural beauty, registered historic parks and gardens, registered battlefields, the curtilages of scheduled ancient monuments, and world heritage sites; or

c. of traditional construction with permeable fabric that both absorbs and readily allows the evaporation of moisture.

Building Regulations

Special Considerations

Section 12 – L1B
Dwellings of architectural or historical interest

12.2 Historic and traditional buildings where special considerations apply

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c. of traditional construction with permeable fabric that both absorbs and readily allows the evaporation of moisture.

1 in 3 of buildings in Wales!

Building Regulations

Special Considerations

Section 12 – L1B
Dwellings of architectural or historical interest

12.2.2 Work to such buildings is required to comply with the ***energy efficiency requirements*** as far as is reasonably practicable. In considering what is reasonably practicable, the work should not unacceptably alter or mar the character of the building or increase the risk of long-term deterioration.

Use BS 7913: 2013 to support applications for Special Considerations

Best Practice: BS 7913: 2013

6.10 Some common repair issues

6.10.1 Dampness (see 6.3.6.2)

"Dampness is often caused by:

a) the external ground levels being higher than the internal floor level; or

b) ***the insertion of modern non-porous materials.***

It might be possible to remedy a) by improving the draining of the ground by a French drain or by creating a dry area or open trench. It might be possible to remedy b) by the selective removal of these materials where possible."

Walls – IWI Application Process

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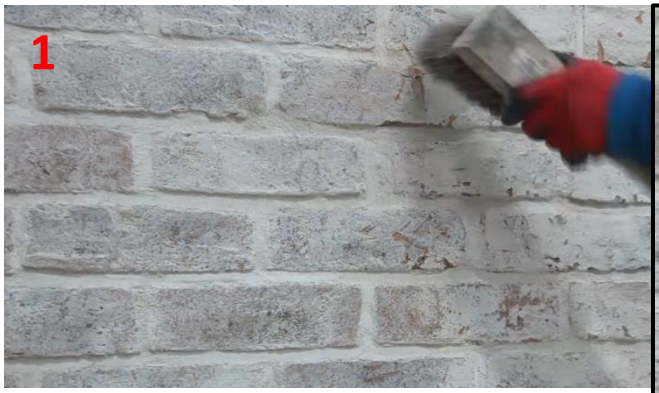

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IWI – Making sure it is undertaken properly..

IWI – Making sure it is undertaken properly..

HOW?

Project Supervision & Quality Management

BS 7913: 2013: Section 8.2 Project supervision

1. Breaking down the specified work into activities.

2. Work out the critical stages when it can go wrong.

3. Determine what can be done to mitigate risk of specification non compliance

Making sure work is properly implemented

Project Supervision & Quality Management

BS 7913: 2013: Section 8.2 Project supervision

PROJECT SUPERVISOR
Outline test/ inspect methodology & process in accordance with specification

Project Supervision & Quality Management

BS 7913: 2013: Section 8.2 Project supervision

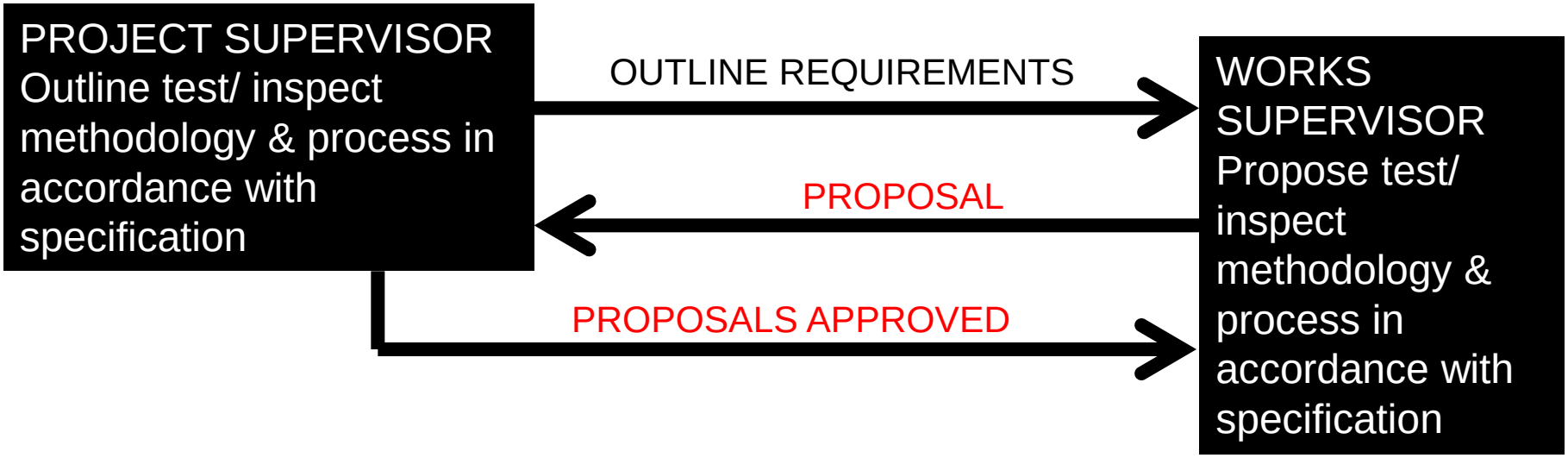
PROJECT SUPERVISOR
Outline test/ inspect methodology & process in accordance with specification

OUTLINE REQUIREMENTS →

WORKS SUPERVISOR
Propose test/ inspect methodology & process in accordance with specification

Project Supervision & Quality Management

BS 7913: 2013: Section 8.2 Project supervision



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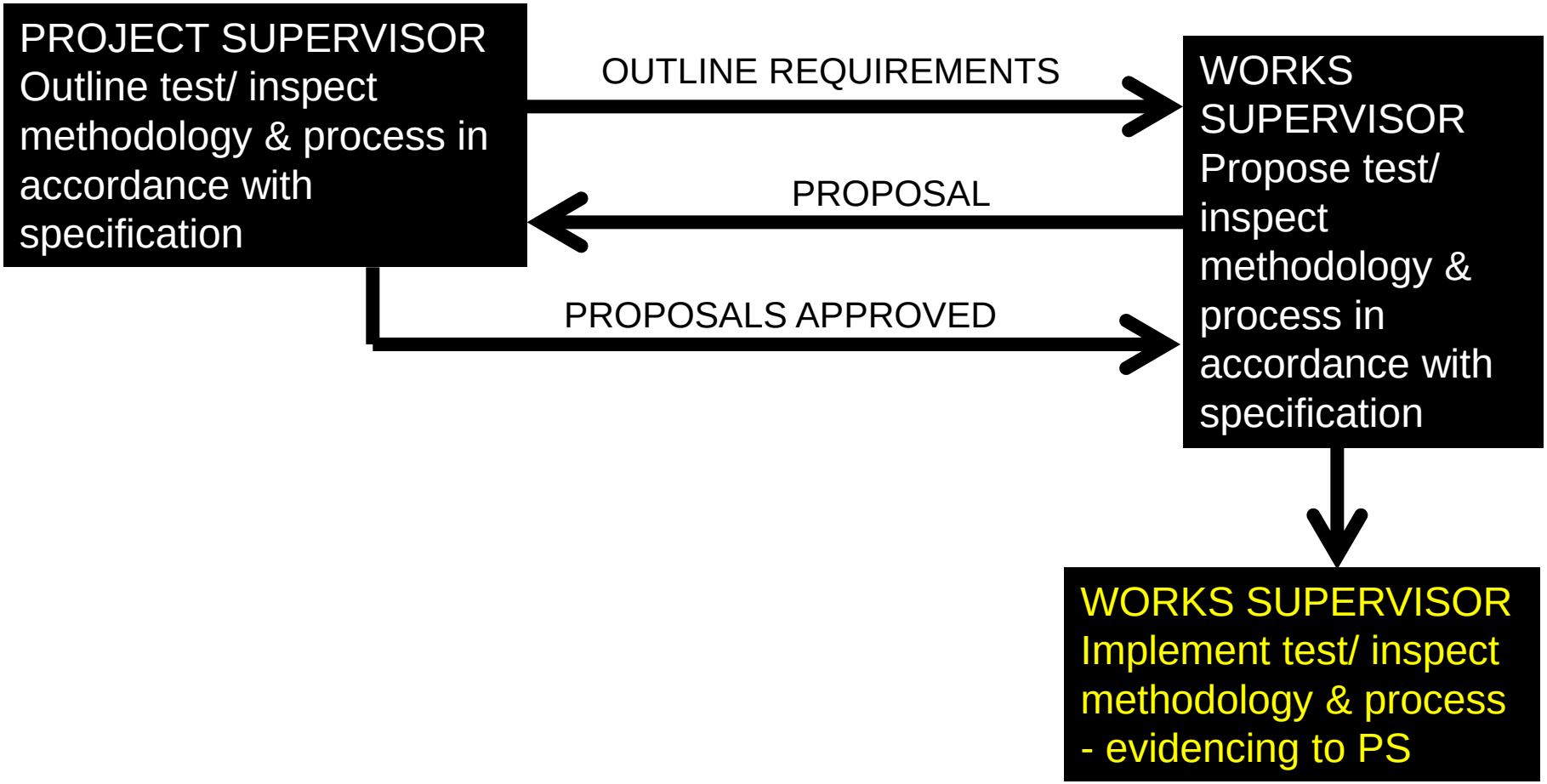

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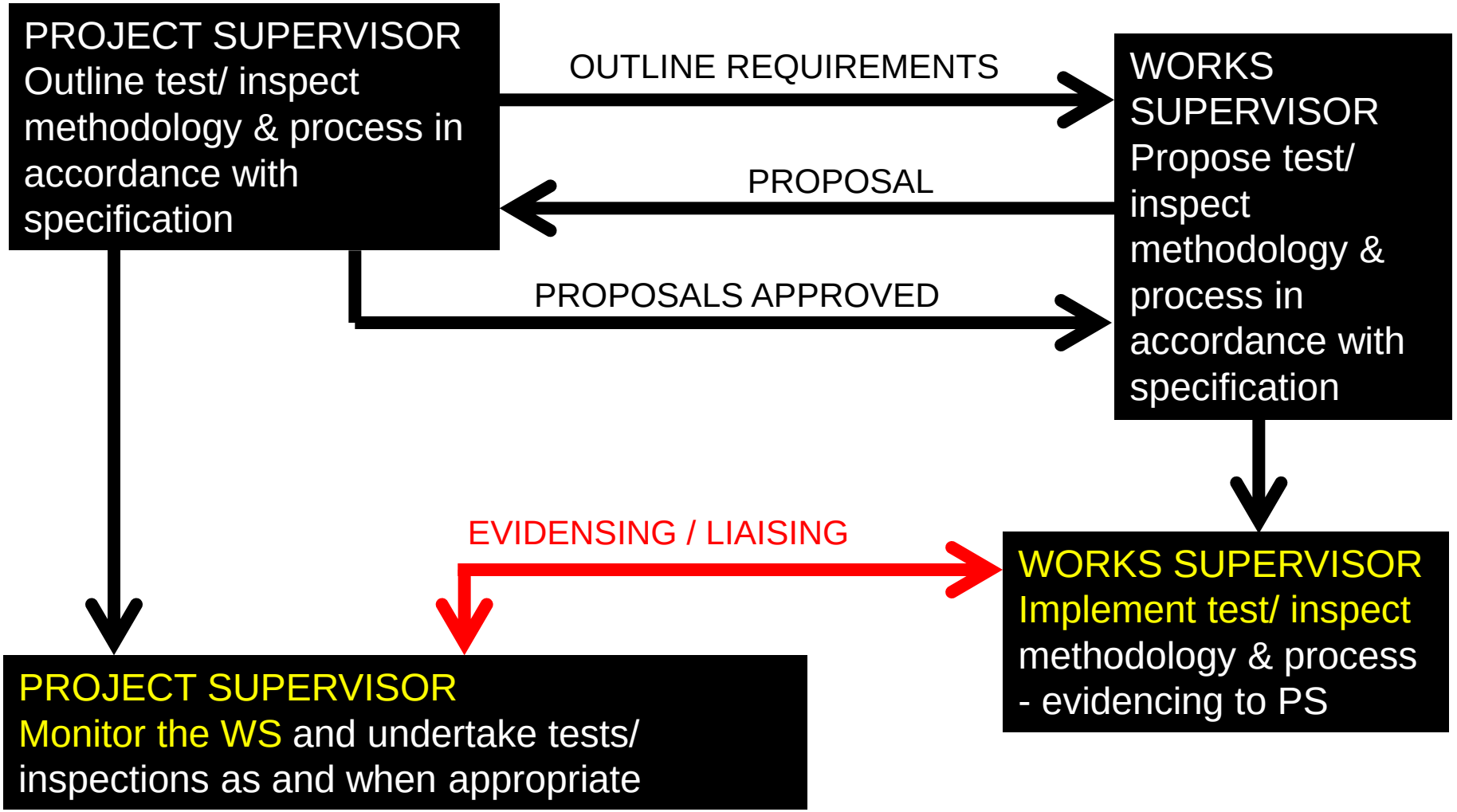

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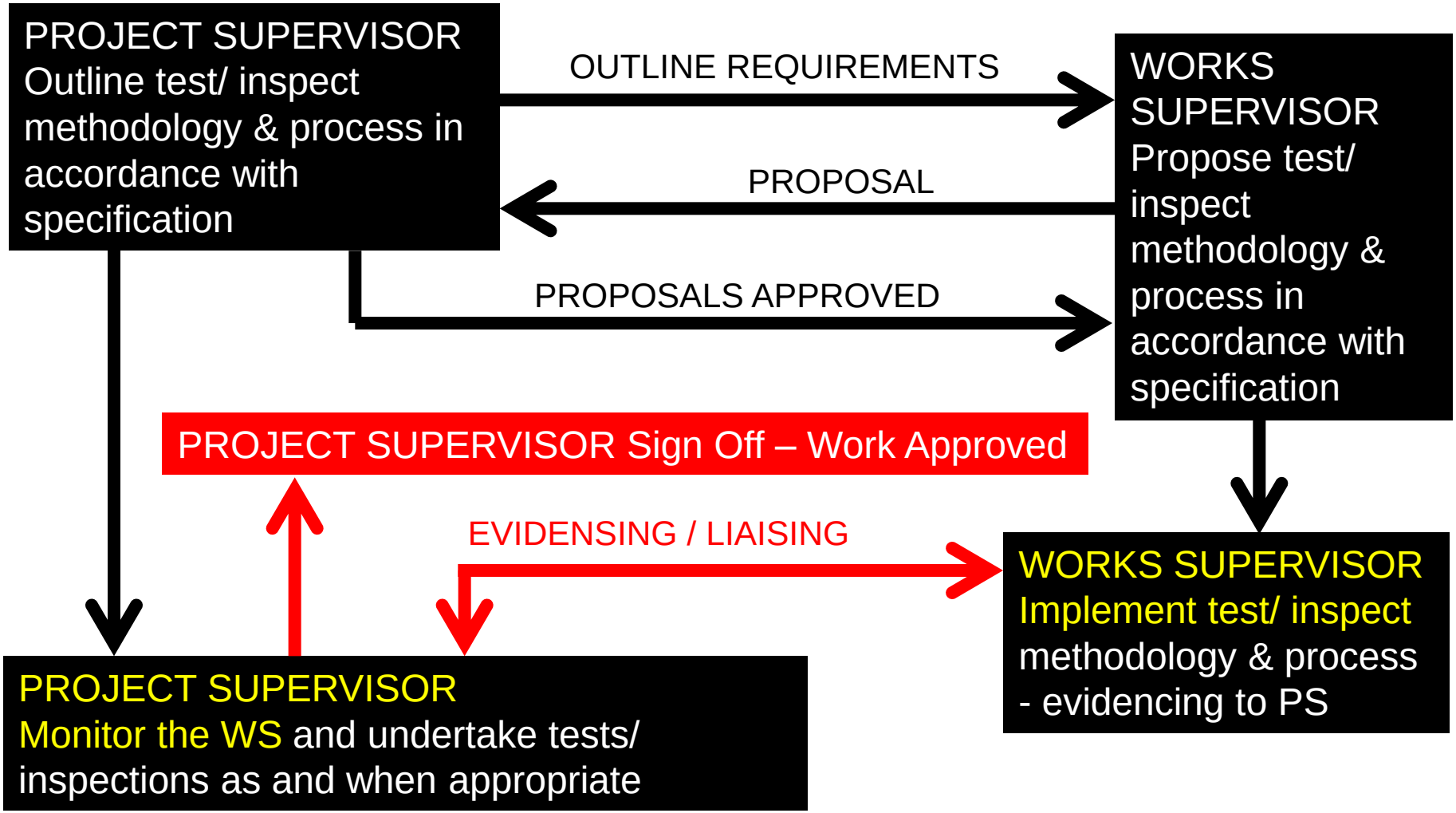

Retrofit & Energy Efficiency - The Process

1. Understand how the building was built, its design, materials and construction
2. Understand the way it performs
3. Condition survey, building pathology, dampness
4. Repair and maintain the building as the starting point
5. Understand ‘significance’ – no matter how small
6. EPC recommendations – be cautious
7. Select measures – understand risks and how different measures relate to each other
8. Plan, specify, procure properly
9. Project management and supervision – quality management

Will mainstream properly care for these?

- **No planning consents for most works**
- **Building Regulations – 'Special Considerations' – but will they be applied for or granted?**
- **Much less likely to have proper expertise – from 'mainstream'**
- **Energy Efficiency / Retrofit – risks to buildings, paybacks. Unlikely to receive traditional building 'expertise' from Energy Advisors**
- **Many BS's /EN's, etc. contrary to good practice**

‘Bonfield’ Review – ‘Every Home Counts’

1. Acknowledge that 25% of building stock is traditionally built
2. Under ‘vision’ – ‘access to the latest standards and best practice guidance’ – must include BS7913
3. In 2.3 it talks about opportunities – what about risks and unsuitability? No mention of previous BRE reports on this
4. Section 8 – ‘industry led’ – so far industry has shown that it doesn’t understand older buildings
5. Recommendation 9 – issues to be addressed in the ‘broadest sense’ – must include older buildings
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8. Skills and Training – relies on 7
9. Not an ‘holistic’ approach – starts with retrofit and no mention of treating existing building fabric to be made more efficient

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‘Bonfield’ Review – ‘Every Home Counts’

1. Acknowledge that 25% of building stock is traditionally built
2. Under ‘vision’ – ‘access to the latest standards and best practice guidance’ – must include BS7913
3. In 2.3 it talks about opportunities – what about risks and unsuitability? No mention of previous BRE reports on this
4. Section 8 – ‘industry led’ – so far industry has shown that it doesn’t understand older buildings
5. Recommendation 9 – issues to be addressed in the ‘broadest sense’ – must include older buildings
6. Recommendation 8 – Skills and Training – doesn’t mention Building Pathology
7. BSI Retrofit Task Group – must have older building expertise based on BS 7913
8. Skills and Training – relies on 7
9. Not an ‘holistic’ approach – starts with retrofit and no mention of treating existing building fabric to be made more efficient

IHBC *'Context'* May 2017

Special edition on 'Retrofit' of older buildings

1. The way forward and response to 'Bonfield'
2. The need for a holistic approach and the knowledge and competencies required including the tools
3. The unintended consequences of retrofit and solutions with a particular focus on insulation
4. Europe compared to the UK – also with a focus on 'areas'.
5. Renewables and building services
6. Research into the energy efficiency of solid walls and what this means.
7. Understanding and addressing the problems of dampness
8. Thermography

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Purchasing BS 7913: 2013

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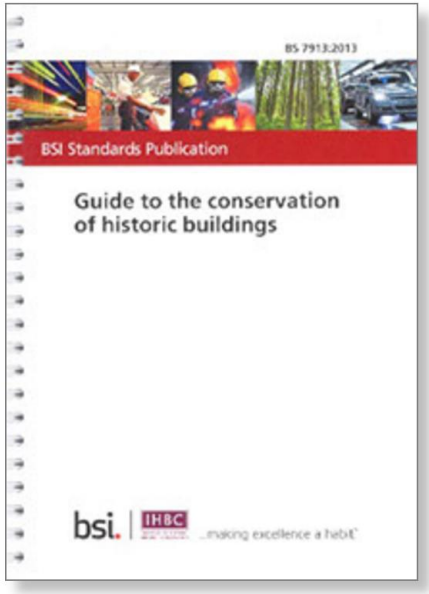

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Related courses

1. **Energy Efficiency and Retrofit of Pre 1919 Buildings – SQA Level 3 Award: 2 days**

2. **Retrofit for Older Buildings: 1 day**

3. **Understanding Dampness and Flooding: 1 day**

4. **CIOB Understanding Building Conservation: 2 days**

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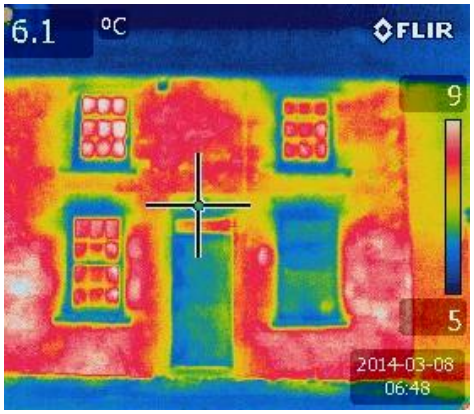
Older Building Retrofit Essentials – A Practical Perspective





THANK YOU

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