1. Introduction

1.1 It is essential that the physical condition of the estate is accurately assessed and maintained to ensure it is fit for purpose and safe for patients and staff. Backlog maintenance covers situations where there is long standing outstanding maintenance which can only be tackled by larger investment projects. These types of maintenance issues are identified through risk assessments, service reports and surveys. This does not cover items such as User requirements or the functional suitability of areas. Backlog maintenance is managed in three distinct ways:

- Disposal of Property;
- Development of new buildings;
- Refurbishment of existing buildings.
1.2 The outcome of the risk based backlog should inform the Estates Strategy and future Business Plans

2 Scope

2.1 This E-PGN together with any associated Procedures and Guidance Notes, shall be observed by all employees of Northumberland, Tyne and Wear NHS Foundation Trust (the Trust / NTW) and is applicable to properties directly operated or managed by the Trust.

3 Statement

3.1 It is the aim of the Estates Department to assess the condition of the estate and bring all properties to condition B or above.

4 Definition of Condition (Buildings / Plant)

4.1 The following categories of condition will be used for the purpose of analysis.

4.2 “A” - As New Condition

4.2.1 Typically built within the last 5 years, or may have undergone a major refurbishment within this period. Maintained / serviced to ensure fabric and building services replicate conditions at installation. No structural, building envelope, building services or statutory compliance issues apparent. No impacts upon operation of the building. The expectancy is that with proper maintenance the building will provide a satisfactory standard of service.

4.3 “B” - Sound

4.3.1 Operationally safe and exhibiting only minor deterioration that can be managed within existing maintenance budgets. Minor deterioration to internal / external finishes. Few structural, building envelope, building services or statutory compliance issues apparent. Likely to have minor impacts upon the operation of the building.

4.4 “C” - Operational

4.4.1 But major repair or replacement will be necessary within a reasonably short period, with costs included within the current Long Term Maintenance Plan. Requiring replacement of building elements or services elements in the short to medium term. Several structural, building envelope compliance issues apparent, or one particularly significant issue apparent. Often including identified problems with building envelope (windows/roof etc.) building services (boilers/chillers etc.). Likely to have major impacts upon the operation of the building, but still allow it to be operable.
4.5  “D” – Inoperable

4.5.1 Unsafe, with the serious risk of major failure or breakdown requiring urgent expenditure. Building is inoperable due to statutory compliance issues or condition representing a health and safety risk or breach. May be structural, building envelope, or building services problems coupled with compliance issues. The conditions are expected to curtail operations within the building.

5 Responsibilities

5.1 The Deputy Chief Executive

5.1.1 The Deputy Chief Executive has ultimate responsibility for ensuring that the Trust’s Estate is properly maintained. In particular he / she must ensure that suitably qualified personnel are employed to implement, manage and review this activity.

5.2 The Director of Estates and Facilities

5.2.1 The Director of Estates and Facilities shall:

- Set the standards and quality of service to be provided;
- Ensure that suitable levels of resource are provided to deliver the agreed level of service.

5.3 The Head of Estates and Facilities

- Manage the staff and resources applied to Estates maintenance;
- To ensure that appropriate reactive and planned preventative Maintenance arrangements are put in place to protect the Trust’s interests and assets;
- Regularly review the condition of the Trust’s buildings services and infrastructure to feed into investment programmes and discussions on the maintenance investment needed to maintain the estate;
- Put forward a Backlog Investment Plan;
- To disseminate this PGN within his / her area of responsibility and to ensure it is implemented and regularly reviewed.
5.4 **Capital Projects**

5.4.1 Manage the general Estates projects and the Trusts Capital Programme and in doing so ensure that:

- All new installations meet the latest legal and technical standards;
- Ensure that the maintenance team have appropriate input to design and maintainability of all new installations;
- Ensure that maintenance teams have comprehensive operations and maintenance manuals handed over on completion of schemes;
- Ensure that appropriate training and familiarisation is provided to in house maintenance teams prior to scheme handover.

6 **Guidance**

6.1 In order to address the backlog maintenance across the estate it must be:

- Measured (Condition Survey);
- Quantified (Cost to condition B);
- Assessed. (Risk Assessment).

6.2 **Condition Survey**

6.2.1 The Estates Department will carry out a detailed survey to assess the physical condition of your estate assets and their compliance with mandatory fire safety requirements and statutory safety legislation.

6.2.2 This will enable the Trust to allocate condition categories, establish costs to maintain assets in condition B or bring them up to condition B and produce risk ratings for appropriate assets.

6.2.3 The survey will assess all premises currently used by the Trust in the support and delivery of healthcare, irrespective of ownership, including premises that are temporarily vacant but are due to be brought back into healthcare use.

6.2.4 Stand-alone property that is vacant awaiting disposal will not be assessed. However, vacant property that shares a common building structure with operational healthcare facilities and is awaiting sale and / or re-use for non-healthcare purposes will be assessed in respect of those elements that impact upon parts of the building still in use.
6.2.5 For the purpose of establishing backlog, the following assets will not be surveyed:

- Fixed and portable medical equipment;
- General portable equipment;
- Loose furniture and fittings;
- Communications equipment (other than associated fixed wiring and distribution equipment, which should be included);
- Information management and technology (IM&T) equipment (other than associated fixed wiring and distribution equipment, which should be included);
- Transport vehicles.

6.2.6 Internal assets should be surveyed on a room-by-room basis, with internal building services infrastructure assessed on a system basis. External works and building services should be surveyed on a system and site basis.

6.2.7 Roof voids and cellars should also be surveyed in order to assess statutory / mandatory compliance in terms of water storage, fire compartmentation, fire protection etc. and to note safe access provision, the condition/construction of roofs, roof trusses, any infestations and roof void insulation etc. Wherever practical, surveys should be non-intrusive and assets viewed without necessitating significant repairs to the building fabric.

6.2.8 The survey will be carried out by a professional estates surveyor and will be in accordance with ESTATECODE.

6.2.9 The physical condition of each sub-element should be categorised as follows:

- **A**: As new and can be expected to perform adequately to its full normal life;
- **B**: Sound, operationally safe and exhibits only minor deterioration;
- **B(C)†**: Currently as B but will fall below B within five years;
- **C**: Operational but major repair* or replacement is currently needed to bring up to condition B;
- **D**: Operationally unsound and in imminent danger of breakdown**;
• X Supplementary rating added to C or D to indicate that it is impossible to improve without replacement.

6.3 Costs

6.3.1 For sub-elements currently in condition C and below the Trust will establish the costs to bring them up to condition B (known as backlog maintenance costs).

6.3.2 Costs will be derived from the following sources:

- Local knowledge / experience of similar projects recently implemented or costed;
- Departmental Cost Allowance Guides (DCAGs) (if you need to replace assets);
- Cost information provided by professional specialist publications.

6.3.3 All estimated costs will reflect current prices, even though the work might not be carried out until some future date.

6.3.4 Backlog costs will be expressed as works costs (that is, the base cost to undertake the work). Additional costs that are dependent upon the project solution chosen (for example, fees, VAT, decanting and temporary services to other areas) should be excluded from backlog costs but included in the overall cost of investment required/requested.

6.3.5 For investment planning purposes, you should estimate impending backlog over a five-year period based on knowledge of the anticipated rate of deterioration in asset condition and known future legislative requirements/changes to standards. Impending backlog relates to B(C) sub-elements (sub-elements currently in condition B that will fall below B within five years).

6.4 Risk Assessment

6.4.1 Sub-elements currently below condition B together with sub-elements in condition B(C) will be risk assessed in order to identify high risk factors in the estate that need to be addressed urgently and those that can be programmed into the estate investment planning process over a longer period.

6.4.2 Risks should be assessed according to the likelihood that the risk will be realised and the severity of the impact should failure occur. This will produce a final risk score and ranking for each sub-element.
6.5 The Risk Assessment Process

6.5.1 For each sub-element being risk assessed, you should follow the process outlined in Figure 6.1. This is based on standard risk assessment theory (Risk management, Standards Association of Australia 1999).

6.5.2 See Figure 6.2 for a list of indicators to help you assign the correct consequence and likelihood scores.

6.5.3 When estimating the likelihood and potential consequences of an undesirable event or potential failure occurring, the assessor should use standard risk analysis techniques. This should include the use of:

- Relevant historical data;
- Professional / technical judgement;

6.5.4 Analysis of the potential consequences should consider:

- Existing measures to mitigate the consequences together with all relevant conditions that have an effect on the consequence;
- Both immediate consequences and those that may arise after a certain time has elapsed;

6.5.5 The consequences of not undertaking the appropriate repairs/replacement. These include:

- Increased risk to patients;
- Potential for legal enforcement notices;
- Corporate manslaughter charges in the event of serious incidents;
- Significant disruption to clinical activity;
- Lowering of staff morale and recruitment difficulties;
- Escalation of capital investment requirements due to accelerated deterioration.
Figure 6.1 - Risk Assessment Process

**SUB-ELEMENT**

Assign a “consequence” score of 1–5 by answering one of the following two questions:
1. What level of personal or organisational harm may occur as a result of the failure?
2. What is the consequence of the failure?

Assign a “likelihood” score of 1–5 by answering one of the following two questions:
1. What is the likelihood that the consequences of the risk will be realised?
2. When will failure occur?

Assign a “consequence” score of 1–5 based on your answer to one of the above questions:

<table>
<thead>
<tr>
<th></th>
<th>INSIGNIFICANT</th>
<th>MINOR</th>
<th>MODERATE</th>
<th>MAJOR</th>
<th>CATASTROPHIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>3</td>
<td></td>
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<tr>
<td>4</td>
<td></td>
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<td></td>
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<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Use the risk matrix and its definitions to decide the appropriate score.

Assign a “likelihood” score of 1–5 based on your answer to one of the above questions:

<table>
<thead>
<tr>
<th></th>
<th>RARE</th>
<th>UNLIKELY</th>
<th>POSSIBLE</th>
<th>LIKELY</th>
<th>CERTAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RAR</td>
<td>UNL</td>
<td>POS</td>
<td>LIK</td>
<td>CERT</td>
</tr>
<tr>
<td>2</td>
<td>UNR</td>
<td>ULN</td>
<td>POSS</td>
<td>LIK</td>
<td>CERT</td>
</tr>
<tr>
<td>3</td>
<td>UNR</td>
<td>UNL</td>
<td>LIK</td>
<td>CERT</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>RAR</td>
<td>UNL</td>
<td>POS</td>
<td>LIK</td>
<td>CERT</td>
</tr>
<tr>
<td>5</td>
<td>UNL</td>
<td>UNL</td>
<td>LIK</td>
<td>CERT</td>
<td></td>
</tr>
</tbody>
</table>

Use the risk matrix and its definitions to decide the appropriate score.

Once you have assigned a consequence score and likelihood score, these should be multiplied together to produce a risk score. See worked example below:

<table>
<thead>
<tr>
<th>Consequence Score</th>
<th>Likelihood Score</th>
<th>Risk score (calculation)</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAJOR</td>
<td>LIKELY</td>
<td>4 x 4 = 16</td>
<td>SIGNIFICANT</td>
</tr>
</tbody>
</table>

Using the scoring system in the table opposite you should rank the element/sub-element as high, significant, moderate or low risk.

**SCORE RANGE**

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–6</td>
<td>LOW</td>
</tr>
<tr>
<td>7–10</td>
<td>MODERATE</td>
</tr>
<tr>
<td>11–16</td>
<td>SIGNIFICANT</td>
</tr>
<tr>
<td>17–25</td>
<td>HIGH</td>
</tr>
</tbody>
</table>
### Figure 6.2 - Risk Matrix

<table>
<thead>
<tr>
<th>SCORE RANGE</th>
<th>RISK RANKING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–6</td>
<td>LOW</td>
</tr>
<tr>
<td>7–10</td>
<td>MODERATE</td>
</tr>
<tr>
<td>11–16</td>
<td>SIGNIFICANT</td>
</tr>
<tr>
<td>17–25</td>
<td>HIGH</td>
</tr>
</tbody>
</table>

#### Probability of Failure

<table>
<thead>
<tr>
<th>Rating</th>
<th>Rare</th>
<th>Unlikely</th>
<th>Possible</th>
<th>Likely</th>
<th>Certain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failure descriptors</td>
<td>None or minimal remedial action required and/or new/recent upgrade. Estimated time to failure may be &gt; 10 yrs</td>
<td>Normal wear and tear. Sound, operationally safe and exhibits only minor deterioration. Estimated time to failure may be &lt; 10 yrs</td>
<td>Reasonable physical damage/deterioration. Realignment of life may be acceptable based on technical tests or residual robustness. Estimated time to failure may be &lt; five yrs</td>
<td>Major physical damage/deterioration. Failure apparent/assessed as imminent or unacceptable built environment. Not appropriate to realign life. Estimated time to failure may be &lt; one yr</td>
<td>Failure occurred. Unacceptable built environment. Not appropriate to realign life. Estimated time to failure may be &lt; six months</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SEVERITY</th>
<th>Health &amp; safety</th>
<th>Environment</th>
<th>Business</th>
<th>Operational/ building/ engineering element</th>
<th>Fire/statutory</th>
<th>Fire/statutory</th>
<th>Fire/statutory</th>
<th>Fire/statutory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rating</td>
<td>Descriptor</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>INSIGNIFICANT</td>
<td>No injury/breach of guidance/ procedures.</td>
<td>No or minimal impact breach of guidance/ procedures.</td>
<td>Unlikely cause of complaint. Litigation remote. Minimal reputation loss/ limited awareness within organisation.</td>
<td>Minimal or no impact. Minimal or no disruption.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

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Northumberland, Tyne and Wear NHS Foundation Trust  
Part of NTW(O)32 – Estates Operations and Maintenance Policy – V01- Issued November 2015
6.6 Risk Categories

6.6.1 Low risk elements can be addressed through agreed maintenance programmes or included in the later years of the Estate Strategy.

6.6.2 Moderate risk elements will be addressed by close control and monitoring. They can be effectively managed in the medium term so as not to cause undue concern to statutory enforcement bodies or risk to healthcare delivery or safety. These items require expenditure planning for the medium term.

6.6.3 Significant risk elements require expenditure in the short term but should be effectively managed as a priority so as not to cause undue concern to statutory enforcement bodies or risk to healthcare delivery or safety.

6.6.4 High risk elements must be addressed as an urgent priority in order to prevent catastrophic failure, major disruption to clinical services or deficiencies in safety liable to cause serious injury and/or prosecution.

6.7 Risk-adjusted Backlog

6.7.1 Backlog costs and associated risk rankings will be combined to produce a risk-adjusted backlog figure for comparative purposes and as a driver for the eradication of high-risk sub-elements and buildings with short remaining lives.

6.7.2 The Trust will use the results of the following formula to benchmark progress made towards eliminating backlog risk and to inform investment decisions to ensure occupied assets are safe and in an acceptable condition. This will be calculated for each building/block.

\[ \text{Risk-adjusted backlog (\£)} = \frac{\text{Non-critical backlog}}{\text{Safety-critical backlog}} \times \frac{\text{Remaining life of building / block}}{1} \]

Where:

- Non-critical backlog (\£) = Total backlog cost relating to low and moderate risk sub-elements for the building/block.

  Remaining life (years) = Remaining life of the building / block.

- Safety-critical backlog (\£) = Total backlog cost relating to significant and high risk sub-elements for the building / block.

Risk-adjusted backlog figures derived for each building / block can then be summated to produce a figure at site or organisational level.
6.7.3 Information will be summarised as follows:

- A tabulated summary of the condition, cost and risk information at site or block level;
- Graphs showing the proportion of backlog costs relevant to condition rankings;
- Graphs showing the proportion of backlog costs relevant to risk rankings;
- Site layout drawings with individual blocks marked up to identify key condition, cost and risk information;
- A narrative to describe problems identified by the condition survey and to explain the rationale for the condition and risk rankings.

7 Associated Documents

- Estatecode – Essential guidance on estates and facilities management;