

December 2014

*UK produced wheat straw for thatching - achieving recognition in BREEAM*  
Report for NTGSA (Eastern growers region) and EAMTA

Centre for the Built Environment

## **About Adapt**

The Adapt Low Carbon Group brings together a broad range of expertise from across the Group's innovative programmes including the InCrops Enterprise Hub, the Centre for the Built Environment, the Low Carbon Innovation Fund and Adapt Commercial. Adapt builds on the widely acknowledged success of the University of East Anglia's business activities in the low carbon sector. Based at the Norwich Research Park (NRP), Adapt promotes enterprising low carbon concerns and works closely with the Norwich Business School and the School of Environmental Sciences.

## **About the Centre for the Built Environment**

The Centre for the Built Environment (CBE) is a centre that draws upon a cluster of expertise within and outside UEA. The centre is responsible for delivery of European Regional Development Fund (ERDF) outputs and, through Adapt Commercial, the provision of low carbon consultancy services.

Awarded £6.2m from the European Regional Development Fund (ERDF) in October 2011, The Enterprise Centre is a building that puts sustainability at the heart of its design. Designed to run on little energy and to achieve a positive impact on the environment using renewable building materials The Enterprise Centre offers a bold vision of the future.

In addition to receiving free business support through seminars, webinars and workshops, SMEs can also receive part or all of their 12 hours free support from the CBE via other deliverables such as bespoke reports; for example, a Passivhaus pre planning-assessment or an embodied carbon review. For further information on the CBE and free business support please see our website below.

### **Centre for the Built Environment**

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## Executive Summary

This summary report presents the findings results of the research into possibility of obtaining industry accreditation to overcome some of the identified obstacles to the use of thatch in new build and in reinstatement on existing buildings.

The possible recognition of thatch in the Building Research Establishment's Environmental Assessment Method (BREEAM) in particular was identified as one area of interest by the NTSGA and the EAMTA. Research concentrated on the possibility of achieving entry of thatched building elements into BRE's *Green Guide to Specification* and whether responsible sourcing certification of UK grown straw for thatching is a viable route to achieving recognition in BREEAM.

BREEAM is an internationally recognised system for independently assessing the environmental performance of a range of building types. It sets performance standards for sustainable design and construction across a wide range of environmental issues against which buildings can be assessed, rated and certified.

For UK grown straw for thatching, the *Materials* section is the most relevant measure assessed and within the *Materials* section there are two criteria investigated in this research: Materials 01 (Mat 01) Life cycle impacts and Materials 03 (Mat 03) Responsible Sourcing.

*BES 6001 Framework Standard for the Responsible Sourcing of Construction Products* is a means of securing certification to demonstrate through independent, third-party certification, that products certified against the scheme have been responsibly sourced. In its current form BES 6001 does not apply to a consortium of multiple micro SMEs in many locations however, BRE have expressed interest in taking forward discussions on an approach for the creation of a version BES 6001 for UK grown straw for thatching. The suggested approach is outlined.

The process that the EAMTA will be required to complete to enable thatched roof elements to be listed in the *Green Guide* is further outlined in the report.

It is important to note that the next steps suggested will require significant input from NTSGA and EAMTA, together with work to be carried out by BRE. The involvement of BRE in any future work is outside the scope of the CBE support and as such, fees would be charged.

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## Client Brief

A number of individual members (7 in total) of the National Thatching Straw Growers Association (NTSGA) Eastern region growers and/or members of the East Anglia Master Thatchers Association (EAMTA) are SME's eligible for free business support under the Centre for the Built Environment's programme; and have requested bespoke support to research appropriate mechanisms to address a lack of accreditation as a significant barrier to specification of thatch in new build markets.

In accordance with this request CBE has provided the collective of SME's with support comprising the following undertakings and deliverables:

- 1) Research into appropriate mechanisms to address a lack of accreditation as a significant barrier to specification of thatch in new build markets
- 2) Discussions with BRE Head of Responsible Sourcing to discuss a sector specific responsible sourcing scheme for UK grown wheat straw for thatching
- 3) Discussions with members of BRE's Centre for Sustainable Products to discuss the *Green Guide to Specification* and the addition of thatched building elements
- 4) Application for funding from Technology Strategy Board (TSB) for work with BRE to include thatched roof elements in the *Green Guide*
- 5) Summary Report on methods such as creation of sector specific Responsible Sourcing schemes and entry into BRE's *Green Guide to Specification* to enable thatch to be recognised in the UK's leading construction industry accreditation scheme, BREEAM.

Please note that this report takes into account the particular instructions and requirements of the client. It is not intended for and should not be relied upon by any third party and no responsibility is accepted for any such reliance.

# 1 Introduction

Thatching is predominantly confined to conservation and heritage related work in the UK. In Europe thatching is being increasingly taken up by new build developments to capitalise on the environmental and energy efficient characteristics of thatch.

The thatching industry has identified the lack of recognised industry accreditation as a barrier to the transition of thatch into new build markets in the UK. The thatching industry in the UK is looking towards the possibility of obtaining industry accreditation to overcome some of the identified obstacles to the use of thatch in new build and in reinstatement on existing buildings.

The potential recognition of thatch in the Building Research Establishment's Environmental Assessment Method (BREEAM) in particular was identified as an area that CBE could offer support to the NTSGA (Eastern region growers) and the EAMTA.

The need for an understanding of life cycle assessment (LCA) as a route to achieve entry of thatched building elements into the BRE's *Green Guide to Specification* and an understanding whether responsible sourcing certification of UK grown straw for thatching is a viable route to achieving BREEAM accreditation have been researched. This summary report presents the findings results of the research.

## 2 Background

The construction industry is a major consumer of resources and has a large impact on the sustainability of the UK. Responsible sourcing of materials used in construction and a greater understanding of the environmental impacts of construction products through carbon footprinting or LCA is increasing in importance in the built environment.

Industry accreditation schemes, e.g. BREEAM, Ecohomes and The Code for Sustainable Homes, have long supported responsible sourcing and LCA by awarding credits within the individual building assessment schemes (see Sections 2.3).

### 2.1 What is Life Cycle Assessment and the *Green Guide to Specification*

Life cycle assessment (LCA) is a technique to assess environmental impacts associated with all the stages of a product's life from cradle to grave (i.e., from raw material extraction through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling).

The *Green Guide* is part of the BREEAM rating scheme for buildings and considers typical UK construction approaches and compares their environmental impact on a scale of A+ (lowest environmental impact) to E (greatest environmental impact). Comparisons are made

using building element specifications that achieve the same levels of performance and the environmental impact is for a complete lifecycle.

The environmental rankings are based on LCA, using BRE's Environmental Profiles Methodology 2008 and *Green Guide* ratings are based on generic data.

The specifications are separated into element types such as external walls and windows. The building types covered by the Green Guide are those within BREEAM and the Code for Sustainable Homes.

Section 5 outlines the steps required to be completed for entry into the BRE's *Green Guide to Specification* for thatched roof elements.

## **2.2 What is Responsible Sourcing?**

Responsible sourcing is the management of sustainability issues associated with construction products and materials in the project supply chain, for both buildings and civil infrastructure. A range of materials are now available in this way in the UK, including timber, concrete, bricks, plasterboard and glass. Responsible sourcing means that purchasers can be sure that products or materials have come from supply chains that take environmental, social and economic sustainability seriously. Responsible sourcing encompasses resource stewardship, corporate responsibility and sustainable procurement.

First published in 2008 and in collaboration with industry and BSI, BRE developed a framework standard for an industry-wide construction product responsible sourcing certification schemes - BES 6001 Framework Standard for the Responsible Sourcing of Construction Products (BRE Global 2008). This was followed in 2009 by BSI BS 8902 Responsible Sourcing Sector Certification Schemes for Construction Products: Specification (BSI 2009).

Sections 2.3.2.1 and 2.3.2.2 outline in more detail BES 6001 and BS 8902.

## **2.3 What is BREEAM?**

BREEAM is the Building Research Establishment Environmental Assessment Method. It is an internationally recognised system for independently assessing the environmental performance of a range of building types. BREEAM's certification schemes vary according to the country, type of construction and type of building. It sets performance standards for sustainable design and construction across a wide range of environmental issues against which buildings can be assessed, rated and certified.

The aims of BREEAM are as follows:

1. To mitigate the life cycle impacts of buildings on the environment
2. To enable buildings to be recognised according to their environmental benefits



3. To provide a credible, environmental label for buildings
4. To stimulate demand for sustainable buildings.

The assessed measures are as follows:

- Management
- Health and well-being
- Energy
- Transport;
- Water
- *Materials*
- Waste
- Land use
- Pollution
- Innovation

Each measure has a range of criteria. A rating is calculated from the number of credits achieved and buildings are rated and certified on a scale of 'Pass', 'Good', 'Very Good', 'Excellent' or 'Outstanding' according to the number of credits achieved.

For UK grown straw for thatching, the *Materials* section is the most relevant measure assessed and within the *Materials* section there are two criteria investigated in this research: Materials 01 (Mat 01) Life cycle impacts and Materials 03 (Mat 03) Responsible Sourcing.

### **2.3.1 Mat 01: Life cycle impacts**

Mat 01 aims to recognise and encourage the use of construction materials with low environmental impacts over the full life cycle of the building. The assessment is of the main building elements (roof, external walls, internal walls, floors etc.) with credits awarded based on the number of points achieved for the element as specified. Points scores are based on the *Green Guide* Rating<sup>1</sup> of the element specifications.

The *Green Guide to Specification* and the process to be completed, costs, timescales etc required for the addition of thatched roof elements into the Green Guide is outlined in more detail in Section 5.

### **2.3.2 Mat 03 Responsible Sourcing of Materials**

Mat 03 aims to recognise and encourage the specification of responsibly sourced materials. BREEAM awards credits for responsibly sourced materials. The aim of these credits is to encourage the specification and procurement of responsibly sourced materials. To achieve credits under Mat 03, applicable materials specified must be covered by appropriate and

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<sup>1</sup> The *Green Guide to Specification* is a reference website and electronic tool, providing guidance for specifiers, designers and their clients on the relative environmental impacts for a range of different building elemental specifications. The ratings within the Guide are based on LCA, using the Environmental Profile Methodology. [www.thegreenguide.org.uk](http://www.thegreenguide.org.uk)

compliant BREEAM recognised environmental management or Responsible Sourcing Certification Schemes (RSC).

Within the BREEAM assessment method, point scores are awarded for RSC schemes and other certification schemes based on the rigour of the responsible sourcing demonstrated by the scheme covering key construction materials.

The list of RSC schemes currently recognised under BREEAM and their point scores are as follows:

<b>BREEAM Recognised Responsible Sourcing Certification Schemes</b>	<b>Associated Responsible Sourcing Point</b>
<b>General:</b>	
BRE Global, BES 6001 - Framework Standard for Responsible Sourcing (all ratings)	
<b>Metals:</b>	
CARES Sustainable Constructional Steel (SCS) Scheme (BS 8902)	
Eco-reinforcement (Sector specific based on BES 6001)	<b>5</b>
<b>Timber and Timber based products:</b>	
Forest Stewardship Council (FSC)	
Programme for the Endorsement of Forest Certification (PEFC) affiliated schemes	
Sustainable Forestry Initiative Inc. (SFI)	
Environmental Management System (EMS) (certified): Key Process and supply chain extraction process	<b>2</b>
Environmental Management System (EMS): Key Process	<b>1</b>

At present, all RSC schemes fall within a single level as they all meet a set of mandatory minimum standards.

Recognition in Mat 03 was identified in discussion with the NTSGA (Eastern region growers) as a potential long term goal and implications of assessing thatch as a construction 'product' against either BES 6001 or BS 8902 were highlighted as potential options.

The two schemes are outlined in brief in the following sections.

### **2.3.2.1 *BES 6001:2014 Framework Standard for Responsible Sourcing of Construction Products***

BES 6001 provides a framework for the assessment and certification of the responsible sourcing of construction products. Construction product manufacturers achieve compliance by meeting a number of mandatory criteria with additional criteria available to achieve higher ratings. The standard's performance ratings range from Pass to Good, Very Good and Excellent.

The BES 6001 standard is a means of securing certification to demonstrate through independent, third-party certification, that products certified against the scheme have been responsibly sourced.

It is important to note that BES 6001 certification does not cover a company's individual site or sites but is focused on the certification of individual products or product groups manufactured at one or more locations and in its current form BES 6001 does not apply to a consortium of multiple micro SMEs in many locations.

Unlike many other schemes BES 6001 is not a sector specific standard; any material, product or product group can be certificated against the standard. However, in some cases individual construction product sectors have made use of the BES 6001 scheme as a framework and have developed their own sector scheme which is fully compliant and equivalent to BES 6001. An example is the Eco-Reinforcement scheme for steel reinforcement in concrete – please see [www.eco-reinforcement.org](http://www.eco-reinforcement.org).

BRE have expressed interest in the possibility of taking forward discussions on an approach for the creation of a version BES 6001 for UK grown straw for thatching.

The BES 6001 scheme, its applicability and suggested outline approach for creation of a BES 6001 Responsible sourcing certification scheme for UK grown straw for thatching are outlined in more detail in Section 4.

### **2.3.2.2 *BS 8902:2009 Responsible sourcing sector certification schemes for construction products. Specification***

BS 8902 provides a framework for the development of sector certification schemes for responsible sourcing of construction products.

It is not a product standard and cannot be used to certify products directly like BES 6001. It is a framework enabling sector certification bodies to develop responsible sourcing certification schemes for their own sector.

BS 8902 sets out the requirements for the management, development, content and operation of sector certification schemes for responsible sourcing and supply of construction products. Requirements include the establishment of a council to manage and progress the scheme. The council is required to include representation of both procurers and clients, engage

stakeholders and set relevant social, economic and environmental objectives under the framework.

On review of this option, it is not possible for the NTSGA to use BS 8902 to establish a responsible sourcing certification scheme for UK grown straw for thatching as due to the nature of the sector, there is currently no certification body in operation.

Appendix A outlines the steps that the NTSGA would be required to institute were there a certification body in operation in the sector to establish a responsible sourcing certification scheme for UK grown straw for thatching.

The CARES (Certification Authority for Reinforcing Steel) Sustainable Constructional Steel (SCS) Scheme is an example of a sector specific responsible sourcing certification scheme to BS8902. Further details of the scheme and useful information can be found at [www.ukcares.com/](http://www.ukcares.com/).

### **3 BES 6001**

As previously stated, BES 6001 provides a framework for the assessment and certification of the responsible sourcing of construction products. The following section gives a brief summary of BES 6001 to demonstrate the criteria against which products are assessed and to highlight how in its existing form BES 6001 is not an appropriate standard against which straw for thatching can be assessed due to the complexity of the assessment criteria.

BES 6001 assessment is in three sections:

- 1) Organisational management requirements
- 2) Supply chain management requirements
- 3) Environmental and social requirements

Each section has a number of requirements and each requirement will have a number of elements (compulsory and voluntary). Points are awarded for compulsory elements and additional points for voluntary elements. The points are summed to give an overall assessment score and this provides the rating (Pass, Good, Very Good, Excellent)

To meet the standard requirements an organisation must meet all the compulsory elements and further performance rating is achieved by compliance with the voluntary additional requirements in each category.

#### **3.1 Requirements for assessment**

##### **3.1.1 Organisational management requirements:**

- A written responsible sourcing policy
- Accessible legal compliance and requirements to which organisation subscribes.

- A documented quality management system (QMS) (ISO 9001) that is used to implement quality and responsible sourcing procedures.
- A Supplier Management system (SMS) documenting purchasing processes and approval of suppliers and in which all the suppliers that provide constituent materials are listed and maintained

### **3.1.2 Supply Chain Management Requirements:**

- Material traceability through the supply chain where 60% of the constituent material in the product is traceable
- Environmental management systems (EMS) (ISO14001) in the traceable supply chain
- Health and safety management systems in the supply chain

### **3.1.3 Requirements related to the management of sustainable development:**

- Establish a written policy and metrics
- Have objectives and targets with performance reviews.
- Report to stakeholders
- Data independently verified
- Policy and metrics to include:
  - (1) Greenhouse gas emissions
  - (2) Energy use
  - (3) Resource use
  - (4) Waste prevention and waste management
  - (5) Water abstraction
  - (6) LCA
  - (7) Ecotoxicity
  - (8) Transport impacts
  - (9) Employment and skills
  - (10) Local communities
  - (11) Business ethics

## **4 BES 6001 Certification for UK grown thatching straw**

Section 3 shows that it is not possible to assess UK grown straw for thatching against the existing BES 6001 standard. BRE recognises the diversity of responsible sourcing sector schemes and a number of issues with the standard have been identified including: SME's currently excluded; long supply chains; complexity of compliance; internationalisation; fast pace of developments.

Following discussions, BRE have expressed interest in the possibility of taking forward a suggested approach for the creation of a version BES 6001 for UK grown straw for thatching to be recognised by BREEAM. The following section summarises the suggested route to achieving a version of BES 6001 for UK grown straw for thatching.

## 4.1 Suggested approach

It is important to note that the next steps will require considerable input from NTSGA and consultancy from BRE.

Table X Suggested approach to achieving a version of BES 6001 for UK grown straw for thatching

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### Step 1 – Establish Scope of Scheme

- 1) NTSGA Eastern region growers to send questionnaire to all NTSGA members.  
  
Questionnaire to assess all aspects of wheat straw growing for thatch to understand the scope of the scheme, what criteria need to be included in the scheme and which aspects of BES 6001 are relevant and applicable.
- 2) NTSGA members to respond to questionnaire.

### Step 2 – Review responses & NTSGA ‘Workshop’

- 1) NTSGA to review questionnaire responses.
- 2) Findings from questionnaire review sent to BRE in preparation for ‘workshop’
- 3) BRE, NTSGA members + other relevant stakeholders ‘workshop’ (whole day) to discuss the most appropriate approach (a version of BES 6001 for straw growers for thatch).  
  
*BRE charge c. £700 per day. It will be essential for their involvement in the later stages of Step 2. Number of days needed will be determined by responses and information provided in questionnaire responses.*

### Step 3 – Draft Responsible Sourcing Standard, Guidance & Procedures

- 1) NTSGA draft Responsible Sourcing Standard, guidance & procedures for UK grown thatching straw.
- 2) Stakeholder engagement/comments on standard.
- 3) NTSGA draft final Responsible Sourcing Standard for UK grown thatching straw & guidance to accompany standard.
- 4) NTSGA submit Final Responsible Sourcing Standard for UK grown thatching straw & guidance to accompany standard to BRE for assessment.  
  
*BRE involvement will likely be needed in Step 3. Number of days will be determined by amount of input required.*

### Step 4 – BRE assessment

- 1) Assessment of Responsible Sourcing Scheme for thatching straw growers against criteria outlined in BES 6001 framework by BRE.
  - 2) Successful completion of BRE assessment.  
  
*BRE review of standard etc. will be essential for Step 4. Number of days will be determined by time taken to review Scheme.*
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**Step 5 – Launch of new Standard & Scheme**

- 1) NTSGA launch Responsible Sourcing Scheme & Standard etc.

**Step 6 – Certification of straw growers against Standard**

- 1) BRE Global Certification of NTSGA members against the new Standard (cost c. £10k)
- 

## **5 Recognition of thatched building elements in Mat01: Life cycle Impacts**

Sections 2.1 and 2.3.1 briefly outlined the relationship between the *Green Guide* to Specification and Mat 01 in BREEAM. This section outlines in more detail the workings of the *Green Guide* and following discussions with BRE, the process that would be required to be completed for thatched roof elements to be listed in the *Green Guide*.

### **5.1 Outline of the Green Guide**

To produce the *Green Guide*, BRE uses LCA to examine a broad range of environmental impacts for different construction approaches to meet the same performance criteria. Six main building types are considered:

- Commercial buildings, such as offices
- Educational
- Healthcare
- Retail
- Domestic
- Industrial

Materials and components are combined to model specifications that are grouped on an elemental basis so that designers and specifiers can compare and select from comparable approaches. The elements covered are:

- External walls
- Internal walls and partitions
- Roofs
- Ground floors
- Upper floors

- Windows
- Insulation
- Landscaping
- Floor finishes

Across these building element categories the *Green Guide* provides an extensive but not exhaustive catalogue of building specifications covering most common building materials. Thatch is 'missing' from this list of building materials.

By evaluating the relative environmental performance using ratings bands of A+ to E (for the overall ecopoints score or for individual environmental impact categories), it is possible for the specifier to select specifications on the basis of personal or organisational preferences or priorities.

## 5.2 How it works

This section explores the way that the *Green Guide* works. The Green Guide has separated the parts of buildings into elemental categories to enable the direct comparison of the environmental performance associated with typical UK approaches to achieving a set level of performance called the functional unit. The Green Guide online has been set up to present similar specifications together but specifications from different sections of the same elemental category can be compared with each other because they perform the same function.

All specifications typically used to achieve the set functional unit are identified before any evaluation of their environmental impact is carried out. Once the specifications are known they are assessed over a 60-year study period using these life cycle stages: manufacture; installation; use (including maintenance and repair); final disposal at demolition.

Within each elemental category, the specifications relevant to the building type are presented. All specifications need to achieve the same technical performance, which is described by the functional unit. The functional unit describes what is being assessed and what levels of performance are required. For example, the functional unit for a domestic roof is:

*1m<sup>2</sup> of roof area (measured horizontally), to satisfy England & Wales Building Regulations, particularly a U value of 0.16 W/m<sup>2</sup>K (pitched) or 0.25 W/m<sup>2</sup>K (flat). Span of 8m to include a plasterboard ceiling and emulsion paint finish.*

The performance of the specifications within an elemental category is compared to establish the lowest environmental impact and the highest environmental impact. These values set the range of the A+ to E rating scale.



### 5.3 Generating thatched roof elements in the *Green Guide – Simplified process*

Figure 1 below shows a snapshot from the *Green Guide* for some existing domestic roof specifications to demonstrate the listing of elements, associated *Green Guide* ratings and to show how the elements are constructed.

The screenshot shows the BRE Green Guide 2008 Ratings website. The header includes the BRE logo and navigation links. The main content area displays a list of roof construction elements with their corresponding Green Guide ratings. The ratings are color-coded: A (light green), A+ (dark green), and A++ (darkest green).

**Green Guide 2008 ratings**

Building type > Domestic  
Category > Roof Construction  
Element type > Pitched Roof Timber Construction

Element description	Element number	Summary rating
Plasterboard, timber trussed rafters with insulation, roofing underlay, counterbattens, battens and imported Spanish slates	812410027	A
Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and polymer modified cement slates	812410011	A
Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and reclaimed clay tiles	812410013	A+
Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and reclaimed slates	812410012	A+
Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and resin bonded slates	812410010	A
Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and UK produced clay plain tiles	812410006	A+
Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and UK produced fibre cement slates	812410008	A+
Timber trussed rafters and joists with insulation, roofing underlay, counterbattens, battens and UK produced slates	812410026	A

At the bottom of the page, there are logos for BUILDING4 CHANGE, SMARTWASTE, RedBookLive, GreenBookLive, BREEAM, BRE BOOKSHOP, BRE INNOVATION PARK, and BRE Trust. The footer also includes links for Careers, Terms of use, How we use cookies, and Copyright Building Research Establishment Ltd 2013.

Figure 1 Snapshot of elements and Green Guide ratings for Domestic pitched roof timber constructions.

Taking the A+ rated element 'Plasterboard, timber trussed rafters with insulation, roofing underlay, counterbattens, battens and UK produced clay plain tiles' (812410008) from the list

as an example, it can be seen that the roof element is made up of a number of 'layers'. So, to create a *Green Guide* element for a thatched roof (assuming that all 'layers' remain the same for the sake of this example), the upper 'layer' i.e. the clay plain tiles would be replaced by a thatched layer.

The resulting *Green Guide* listing and appropriate rating would then for example be '*Plasterboard, timber trussed rafters with insulation, roofing underlay, counterbattens, battens and UK produced wheat straw thatch*'.

This is a simplified example to demonstrate the approach taken. In reality it is not this simple. The EAMTA and NTSGA would be required as a minimum to submit growing data for UK produced wheat straw grown for thatching, evidence to support any service life claims, detailed element construction information to confirm that all elements to be modelled fulfil the functional unit criteria (as outlined above).

## 5.4 Approach for listing thatched roof elements in the *Green Guide*

To enable thatched roof elements to be listed in the *Green Guide*, the following steps will be required to be completed. It is important to note that the next steps will require input from NTSGA and EAMTA, and LCA work to be carried out by BRE.

Timescales have not been included in the table but BRE estimate that the process would take 6-8 weeks from receipt of straw growing data from NTSGA and roof element data from EAMTA by or agreed use of 'generic' data available. It must be noted however that BRE will not carry out work 'at risk'.

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### Step 1 – Application for *Green Guide* listing

- 1) EAMTA apply to BRE Global for *Green Guide* ratings and listing in *Green Guide to Specification*
- 2) BRE Global issue proposal. Cost of work dependent time taken to review data and number of *Green Guide* elements and ratings to be calculated. Price expected to be in region of £2 - 5k.

### Step 2 – Collection & submission of data to BRE

- 1) EAMTA submit growing/production data (from NTSGA) to be used in LCA modelling if possible. Alternatively 'generic' data for European straw production is available.
- 2) EAMTA to provide roof element construction information

### Step 3 – LCA work

- 1) BRE perform LCA on data provided and calculate *Green Guide* ratings for thatched roof elements.

### Step 4 – *Green Guide* ratings published

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- 1) BRE Global publish ratings on Green Guide to Specification website
- 2) EAMTA publicise *Green Guide* ratings

### **5.5 Funding application for work to include thatched roof elements in the *Green Guide***

An application on behalf of the EAMTA for funding from Technology Strategy Board (TSB) through their Innovation Vouchers for work with BRE to include thatched roof elements in the BRE Green Guide to Specification was made by CBE.

Innovate UK (formerly TSB) Innovation Vouchers gives successful applicants up to £5,000 to work with an external expert for the first time. It allows anyone starting up or running a micro, small or medium-sized business to gain new knowledge to help business innovate, develop and grow. Innovation Vouchers are allocated at random after a ballot from all successful applications. If successful, applicants are awarded an innovation Voucher of up to £5,000 to engage an expert of your choice

The application was selected for final round to be entered into the final ballot but was not one of those picked to receive funding. Further applications can be made and details of the application process and requirements are available at <https://vouchers.innovateuk.org/>.

## **6 Summary**

BREEAM is an internationally recognised system for independently assessing the environmental performance of a range of building types. It sets performance standards for sustainable design and construction across a wide range of environmental issues against which buildings can be assessed, rated and certified.

For UK grown straw for thatching, the Materials section is the most relevant measure assessed and within the Materials section there are two criteria investigated in this research: Materials 01 (Mat 01) Life cycle impacts and Materials 03 (Mat 03) Responsible Sourcing.

BES 6001 Framework Standard for the Responsible Sourcing of Construction Products is a means of securing certification to demonstrate through independent, third-party certification, that products certified against the scheme have been responsibly sourced. In its current form BES 6001 does not apply to a consortium of multiple micro SMEs in many locations however, BRE have expressed interest in taking forward discussions on an approach for the creation of a version BES 6001 for UK grown straw for thatching.

It is possible for thatched roof elements to be listed in the Green Guide thereby receiving further recognition in BREEAM.

It is important to note that the approaches suggested will require significant input from NTSGA and EAMTA, and will require essential work to be carried out by BRE. The involvement of BRE in any future work is outside the scope of the CBE support and as such, fees would be charged.

## **7 Next Steps**

The suggested approaches outlined in this report are the result of discussions with BRE. The information provided may be subject to change prices provided are only indicative.

To progress or discuss any of the approaches suggested above, it is the recommendation of CBE that the NTSGA Eastern growers region and/or the EAMTA should contact the relevant departments at BRE using the following email address [enquiries@breglobal.com](mailto:enquiries@breglobal.com).

## Appendix A: Achieving BS 8902 for UK grown thatching straw

In the event that a sector certification body becomes operational, the following section summarises the specification and outlines the steps that NTSGA would be required to institute to establish a responsible sourcing certification scheme for UK grown straw for thatching. The process is summarised graphically below and discussed in more detail in the following sections.

### Summary of framework specification process:

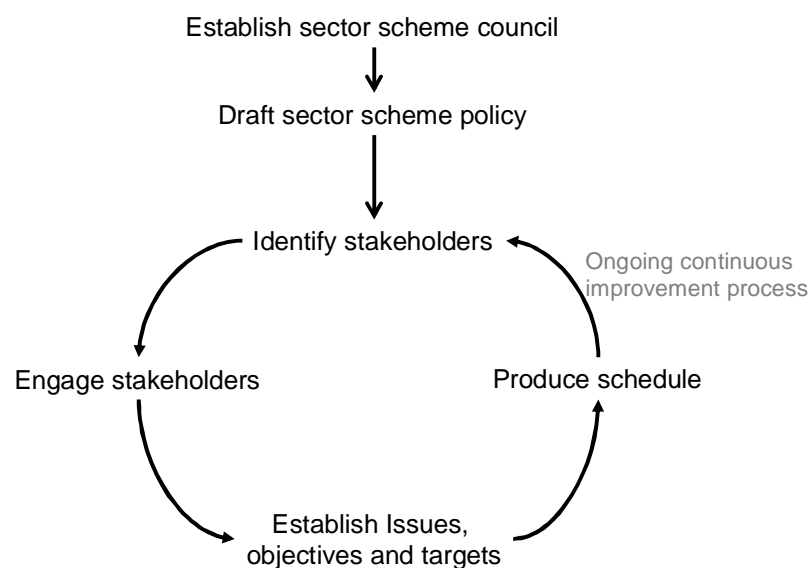


Figure 2 Summary of process in establishing and maintaining a responsible sourcing sector scheme framework specification.

### The Specification

Initial development of a schedule involves a process of stakeholder identification and engagement with a defined policy for responsible sourcing. The process will identify relevant issues and objectives and realistic (but still challenging) targets. These targets are translated into the requirements for organisations participating in the scheme. After this the scheme must continuously improve by an on-going process of review and stakeholder engagement.

#### Establish a sector scheme council:

The council should have a balanced representation of the different organisations for which the scheme has been developed. No single interest should dominate and the council needs to ensure impartiality. The council needs to include producers and clients/consumers/specifiers from both sides of supply chain.

The council is responsible for:

Developing, managing and maintaining the scheme schedule

Overseeing certification against schedule

The council will:

- Identify management/manager who will have overall responsibility for:
  - Formulations of policy
  - Supervision of finances of scheme
  - Delegation of authority to undertake activities on its behalf
- Ensure scheme and its management and activities of council are transparent and safeguards impartiality.
  - Transparency critical to integrity/trust in a) scheme and b) stakeholders
- Have a documented structure.
- Biennially review scheme - continuous improvement
- Produce policies and procedures for resolution of complaints, appeals and disputes related to certification.
- Take full accountability for decisions made

#### **Develop responsible sourcing scheme (RSS) schedule:**

Developing the schedule requires stakeholder engagement. Stakeholders are needed to establish and review the sectors responsible issues, objectives, targets and schedules of requirements. Stakeholder engagement is a two-step process:

**a) Identify:** The council first needs to define and identify stakeholders (stakeholders may also identify themselves). Stakeholders will include specific individuals (employees/clients) and representatives from organisations of special interest. Secondly, council needs to clarify relationship and interest in sector.

**b) Engage:** The council needs to engage with stakeholders, methods of engagement will be diverse and appropriate to the stakeholder and the issues identified. Engagement between council and stakeholders needs to be continuous cycle of discussion and feedback. The council's aim at all times should be development of trust. Feedback is critical as it enables stakeholders to see how council/scheme has responded to their views.

#### **Sector scheme policy**

The council will draft and approve a policy. Policy is to describe commitment to principles of sustainable development and to promote those principles in scheme activities.

#### **Establishing issues, objectives and targets:**

Table 1 sets out all the issues that need to be considered. Some issues may be considered to be irrelevant. Exclusion of any issues will need to be justified with a valid and verifiable reason. Conversely, the council may identify issues that are not included in Table 1, these may be included if relevant.

Objectives and targets are then set against each of these issues (outcome of council/stakeholder engagement process).

The decisions made (objectives, targets and exclusions and additional inclusions) need to be documented in some way and made publically available (transparency in all things is critical).

Table 1 overleaf outlines the relevant sustainability issue identification and reporting as set out in BS 8902.

Table 1: relevant sustainability issue identification and reporting (source: BS 8902:2009)

Field	Issue
<b>Environmental</b>	Recyclability and recycled content
	Renewability
	Harvesting or extraction impacts
	Greenhouse gas emissions
	Energy usage
	Water usage
	Transport impacts
	Biodiversity
	Eco toxicity
	Land remediation
<b>Social</b>	Waste management
	Workers' conditions
	Safe and healthy working conditions
	Slave labour
	Child labour
	Fair wages
	Working hours and holidays
	Freedom to join trade unions (freedom of association)
	Equality in respect of gender, ethnicity, religion, political persuasion
	Complaints and prosecutions
<b>Economic</b>	Skills and training
	Community relations
<b>Economic</b>	Contribution to the built environment

Field	Issue
	Ethical business practice
	Contribution to diversity and stability of the local economy
	Long-term financial viability
<b>Other issues considered relevant to the sector</b>	

#### **RSS schedule:**

Schedule needs to include requirements for:

- General:
  - Schedule requirements (table 1) need to be coherent and have minimum criteria; be verifiable.
  - Schemes may also have levels with requirements at or above minimum criteria and may include aspirational requirements.
- Procedural control mechanisms: auditable procedures for managing and tracking products
- Chain of custody: mapping of chain of custody for significant constituents of product
- Declaration and product marking
- Documentation and records: including logging of data and sources; setting time periods for retaining records and documents
- Auditing
- Organisational maturity: periodic assessment of performance against 'maturity matrix'

#### **On-going scheme development (continuous improvement):**

The council will need to establish a method of reviewing issues and targets set by scheme at least once every two years in consultation with stakeholders. This continuous improvement/development process also requires council to assess level of performance by the scheme itself against scheme development principles (inclusivity, integrity and transparency).

#### **Reporting:**

The council needs to provide an annual public statement of policy, objectives, targets, schedule requirements (how they were selected), achievements, and performance against scheme development principles. There may also be a need identified for more frequent reports.





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