

**GBE**   
[www.GreenBuildingEncyclopaedia.uk](http://www.GreenBuildingEncyclopaedia.uk)

**CAP'EM**

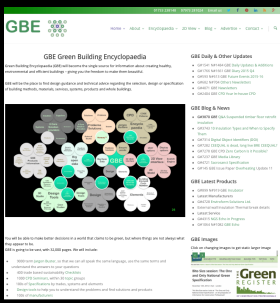
Cycle Assessment Procedure for Eco-impacts of Materials



# Capturing AECB's Golden Nuggets & Guru Know-How

Promoted by Brian Murphy  
Green Building Encyclopaedia (GBE) proposal to  
Association for Environment Conscious Building (AECB)  
Championed by Julia Bennett and Paul Bourgeois





# This presentation:

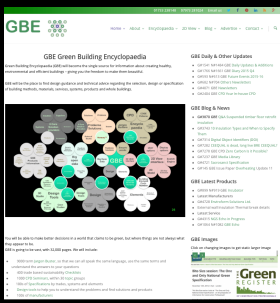
- Is available on <http://.GreenBuildingEncyclopaedia.uk/>
- Page: ... [?P=12210](#) for PDF added today
- I will build hyperlinks from text content into the relevant pages of the website to expand on the content if you wish to explore further



# AECB Knowledge Management

- At Goldsmith College Conference
- Talk of aging membership
- And Potential loss of know-how
- Need youth to carry the baton
- GBE offers complimentary option
  - Record what you know before its lost
  - In an on-line encyclopaedia with datasets, equations, calculators, tools, library, case studies, etc.





# AECB Forum Mining

- An opportunity to extract the essence or golden nuggets of information
- Filter out the chatter and repetition
- Organise into encyclopaedic collection
- Complement or reinforce AECB know-how:
  - AECB standards, CLP, CLR, Passivhaus, etc.
- Joined up linking of information
- Access through intuitive interface
  - GBE 2D or 3D Interface

16/07/16



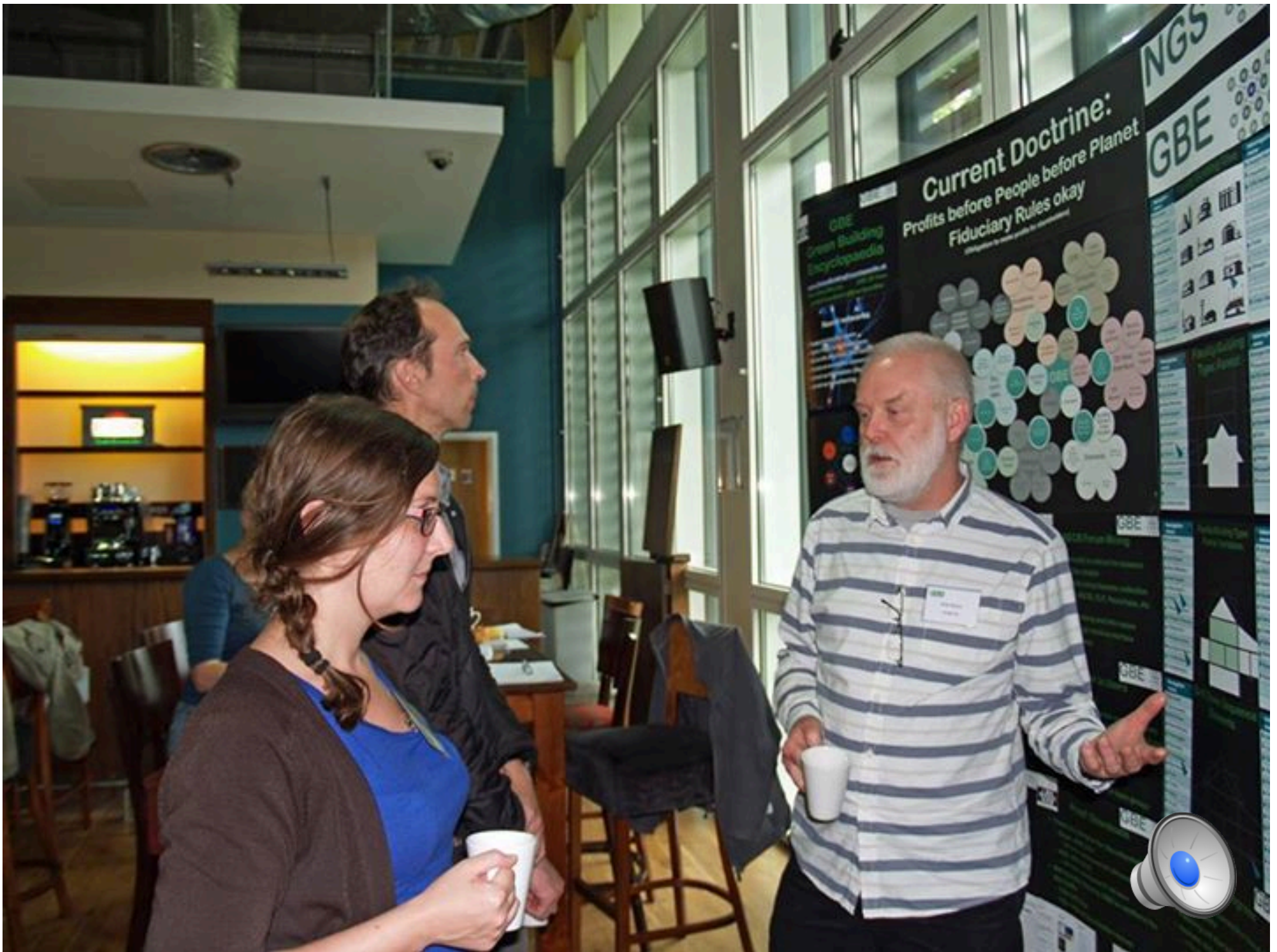
# Sheffield 2015

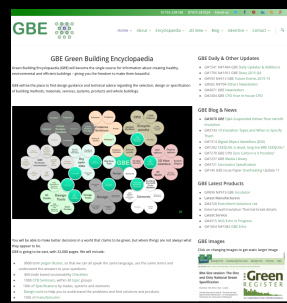
## AECB Conference

- Made very welcome after a long absence
- Presented this idea in the exhibition space display
- Generated some interest
- Julia and Paul said we should try to make it happen
- Mentioned in Social Media

16/07/16







**Dr Nicola Dempsey** @DrNicolaDempsey Following

At @AECBnet conference and see overlaps in what @GBEGreenBuild and @placekeeping #knowledgesharing 'record what you've got before it's lost'

7:40 AM - 19 Jun 2015

Reply to @DrNicolaDempsey @AECBnet @placekeeping

**GBE** @GBEGreenBuild · Jun 20  
@DrNicolaDempsey @AECBnet @placekeeping lets make sure this happens, nice to meet yesterday

**GBE** @GBEGreenBuild · Jun 19

Very astute observation, could work together to make this happen, very nice to meet @AECBnet and feel so welcome

**Dr Nicola Dempsey** @DrNicolaDempsey  
At @AECBnet conference and see overlaps in what @GBEGreenBuild and @placekeeping #knowledgesharing 'record what you've got before it's lost'

**Julia Bennett** @julia\_encraft Following

Huge respect for Brian and his Green Building Encyclopaedia. Its a great space for collaboration...join in.

**GBE** @GBEGreenBuild  
Seen at @AECBnet Annual conference 2015 Sheffield promoting @GBEGreenBuild Green Building Encyclopaedia & GBE 2D View

3:44 AM - 27 Jun 2015



# Other reason for this proposal:

- AECB is a fountain of knowledge and expertise
- We know it, but very few other people do
- The AECB Forum helped to spread the word wider than membership (check-out the stats!)
- CarbonLite training is converting others slowly (CLR too)
- Passivhaus Plus is a new outlet to a wider audience
  - Fran pleaded for more engagement
- But there are millions that need to have AECB know-how
- If we are to have any significant effect, we cannot do it alone
- We need to share, more, faster, to those who can act on it

16/07/16 • We must not hold back

- (no more not wanting to share what is our know-how)





# Current Doctrine: Profits before People before Planet Fiduciary Rules okay

(Legal obligation to make profits for shareholders)

- Trying to change the majority in the industry is impossible
- “I have always done it like this, why change now?”
- Even if they want to change its too big a task
- Youth of the world want future stability
- With guidance can start afresh in their own enterprises
- Youth can carry the torch without the burden
- AECB can show the way



# Current

# Doctrine:

**Profits before People before Planet**

**Fiduciary Rules okay**

(Obligation to make profits for shareholders)

# GBE HERACEY™

**Healthy Environmental**

**Resourceful Appropriate**

**Competent Effective Yardstick**

There are two parts  
to this proposal:

- Extract the golden nuggets out of the AECB forum
- Capture the know-how of the AECB guru before its lost forever



# Plus two options or extensions

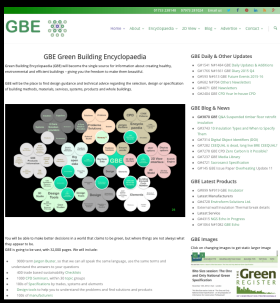
- Extract the essence out of the Magazine and turn it into a long term resource
- Non-Guru Members know-how collected and organised



**There are two complimentary parts being offered to build on:**

- **Green Building Encyclopaedia (GBE)**
- **GBE 2D/3D View: an interface to GBE**

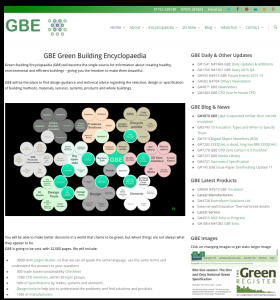




# underlying ambitions

- Paul tells me that the committee
  - and members?
- Want to develop a level of professionalism?
  - Or be more professional?
- To enable fit with and assimilation into mainstream?
- Conventional materials and construction performance is understood and taken for granted and is the default
- Green is unknown and nothing is taken for granted and has to be proved each time
- More research needs to be done or knowledge disseminated in the best way possible to be accessible all when making everyday choices (ASBP similar aim)





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[www.GreenBuildingEncyclopaedia.uk](http://www.GreenBuildingEncyclopaedia.uk)

**CAP'EM**

Cycle Assessment Procedure for Eco-impacts of Materials



# Green Building Encyclopaedia

16/07/16

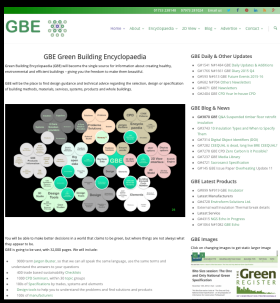
© GreenBuildingEncyclopaedia 2015-16  
AECBNuggestKnowhow



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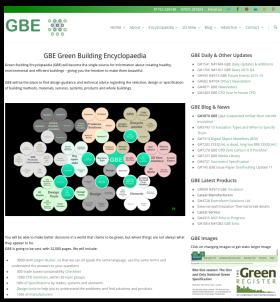




# Site map

- 60 items in this mind map
- 275 Page groups in the site map so far
- 1925 pages so far, 30,000 anticipated
- This takes a lot of navigating
- So a novel navigation method has been developed





# Neural Network Navigation



# Neural networks

- Human brains are clever
- Some magic to be found here
- Memories (Neurons) and connectivity
- Clustered memories connected
- Joined up Information (Neural networks)
- Joined up remembering

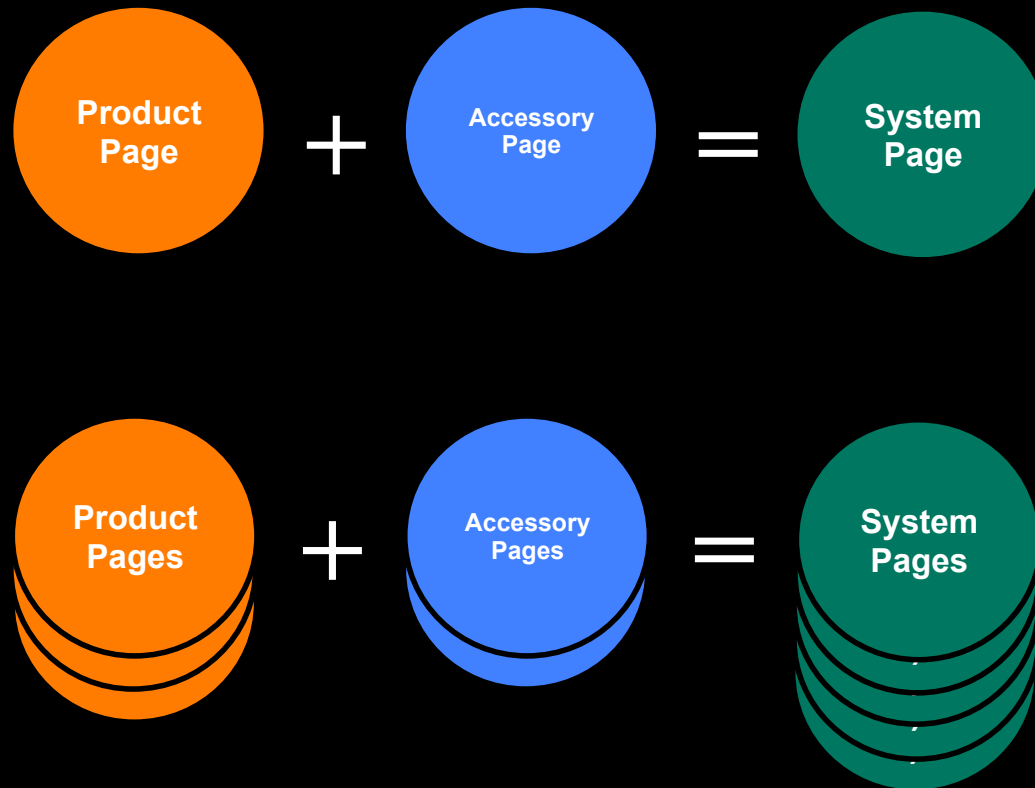
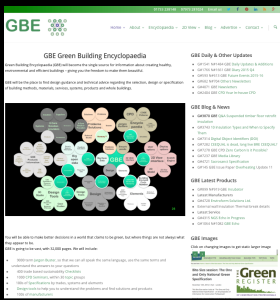


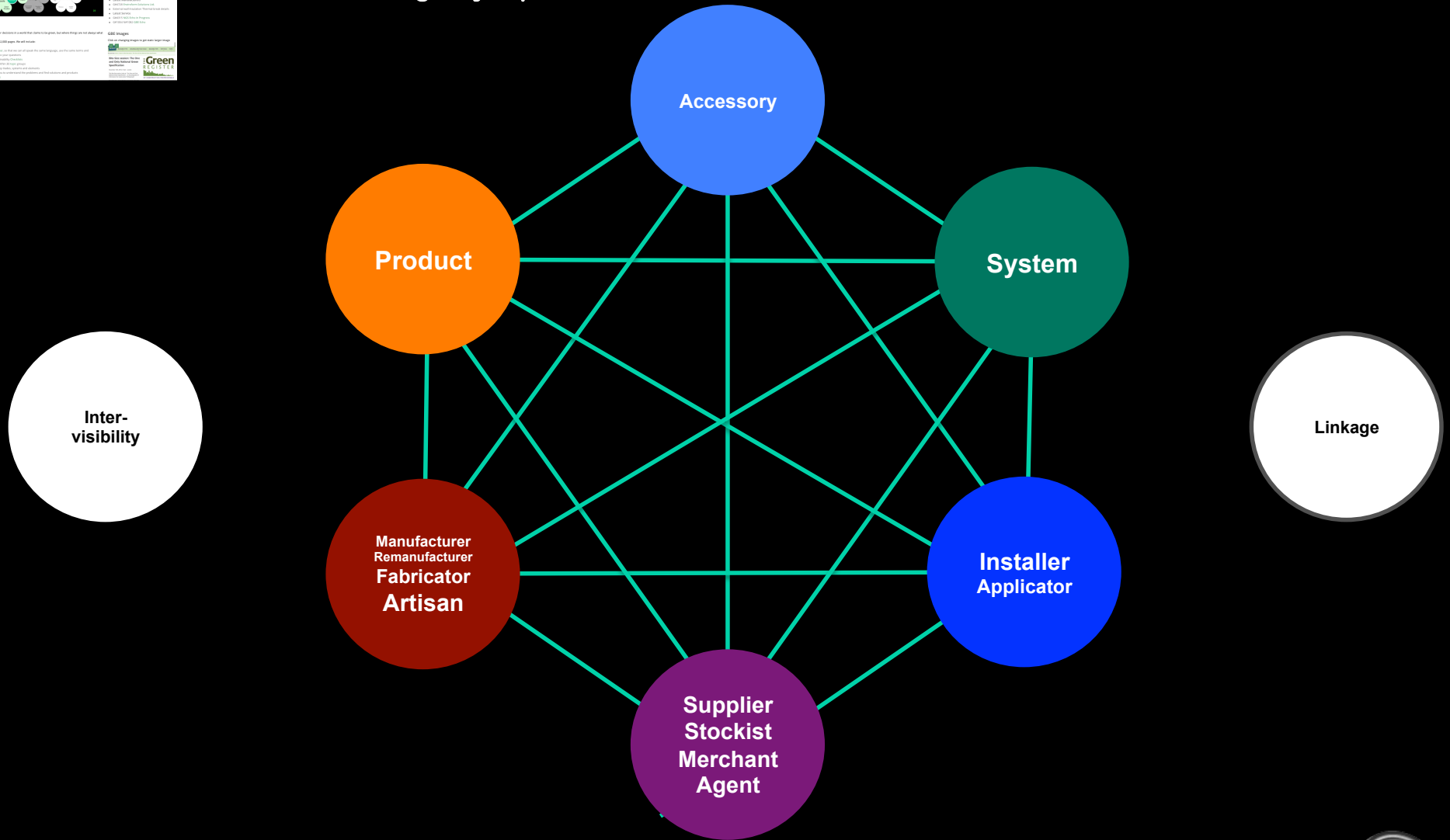
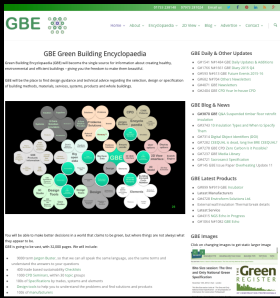


# Tapestry

- 1971
- Carole King
- 45 years since you first played it
- You remember every word
- You know the next track before it plays
- That's the way the human brain works
- Nuggets of information stitched together

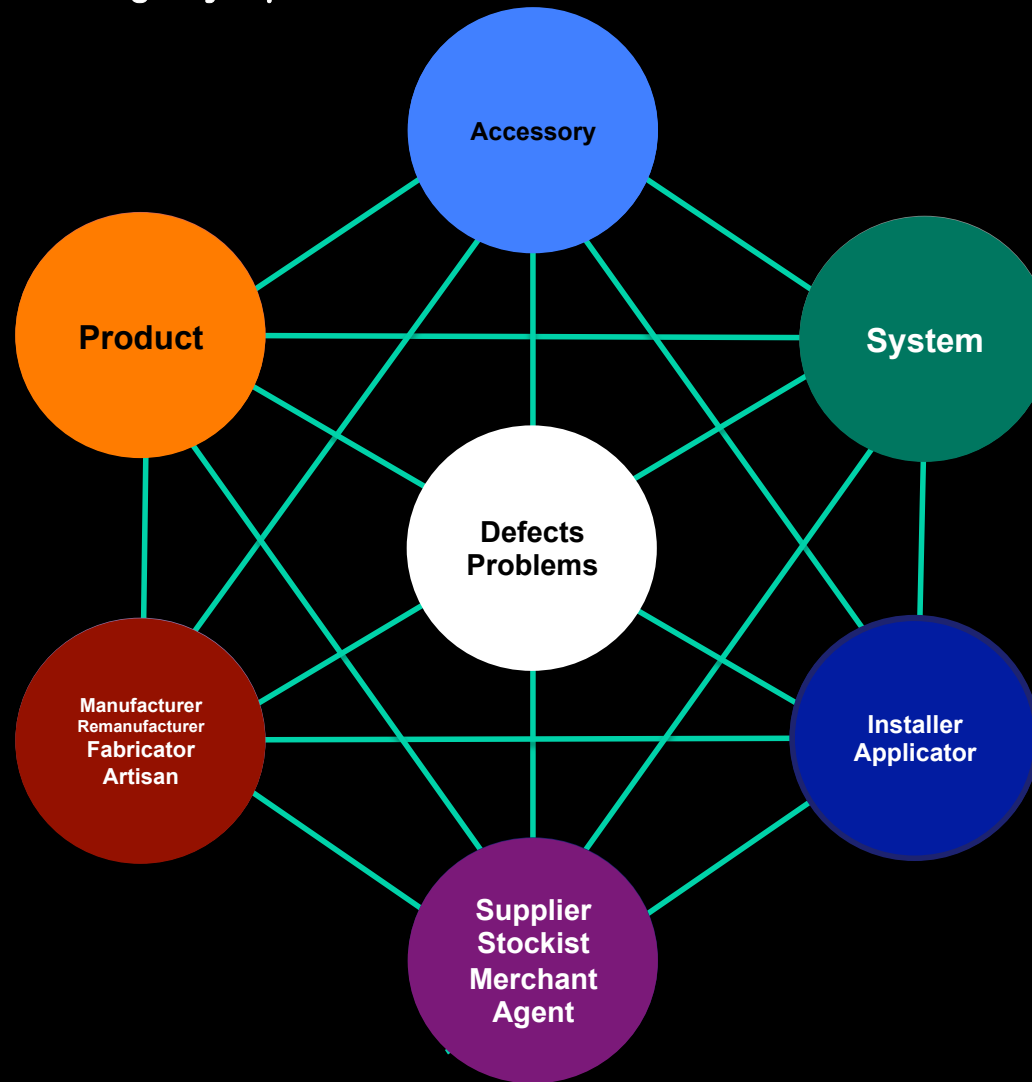
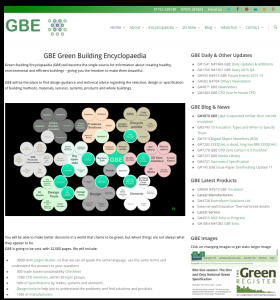






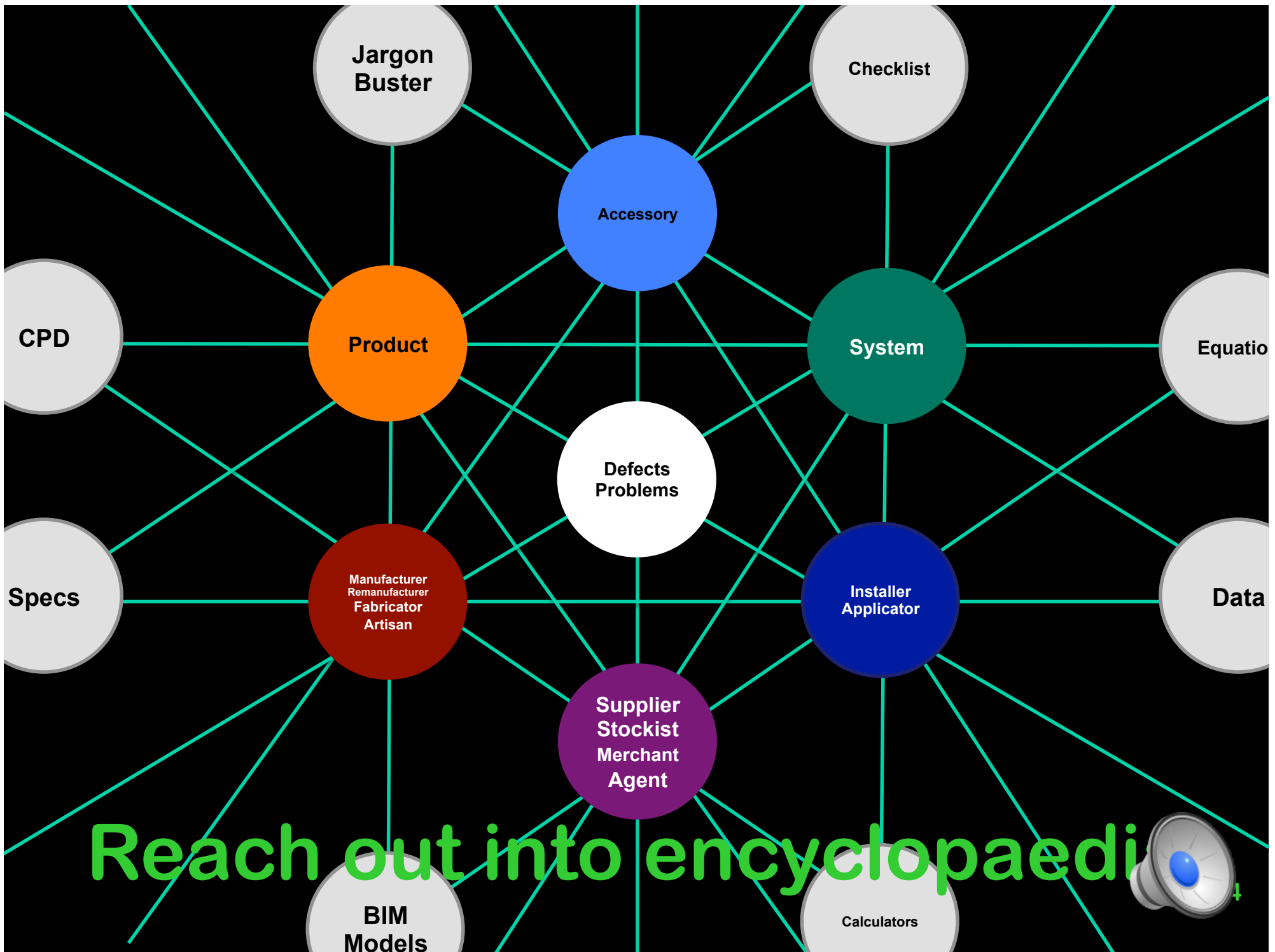
# GBE 6 Core Pages



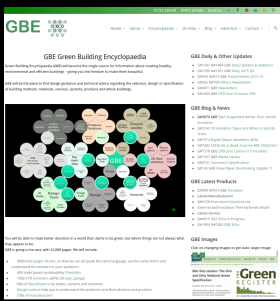


# GBE 6 Core Pages









# GBE 2D View into GBE Encyclopaedia



### Facility/Building Use

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Manufacturer
- Supplier
- Installer
- Product
- Accessory
- System
- Materials
- Collaboration
- Building Use

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Equations
- Datasets
- Calculators
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Case Studies

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Site
- City
- County
- Region
- Country
- Continent
- Collaboration

### Local

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Systems:
- Air/Wind Tight
- Acoustic Insul
- Damp/Gas PM
- Thermal Insul
- Vapour Barr
- Fire Resistant
- Interfaces
- Collaboration

### Systems: Roofing

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Window
- Door
- Rooflight
- Roof Window
- Interfaces
- Wall
- Roofs
- Collaboration

### Windows Doors Rooflights

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

### Facility/Building Type: Format

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Bungalow
- Courtyard
- Chalet
- House
- Flat/Apartment
- Maisonnette
- ZigZag
- Collaboration

### Components in Assembly

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Manufacturer
- Supplier
- Installer
- Product
- Accessory
- System
- Materials
- Collaboration

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminar
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Stairs
- Ramps
- Walkways
- Balustrades
- Interfaces:
- Wall
- Floors
- Pavement
- Collaboration

### Elements: Stair/Ramp

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

### Facility/Building Type: Format Variations

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- +Basement
- +Attic
- +Roof
- +Integral Garage
- +Extension
- +Conservatory
- Sun Space Porch
- +Landscape
- Collaboration

### Elements: Foundation

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Floors:
- Core
- Top
- Underside
- Interfaces:
- Roof eaves
- External Wall
- Partitions
- Collaboration

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Frame:
- Core
- Lining
- Cladding
- Interface with:
- Roof
- Floors
- Foundation
- Collaboration

### Elements: Frame

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

### Drill Down Sequence Elements

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Elements:
- Foundations
- Basement
- Floor
- Frame
- Walls
- Roofs
- Landscape
- Collaboration

### Elements: Foundation

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- Floors:
- Core
- Top
- Underside
- Interfaces:
- Roof eaves
- External Wall
- Partitions
- Collaboration

### Elements: Floors

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

Navigation menu

- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- External Wall:
- Core
- Inner
- Outer
- Interfaces
- Roof
- Floors
- Foundation
- Collaboration

### Elements: Ext. Wall

Interrogation menu

- Jargon Buster
- Checklist
- CPD Seminars
- Specification
- Calculators
- Library
- Links
- Code
- Patterns
- Design
- RulesOfThumb
- Performance
- Problems
- Solutions

Navigation menu

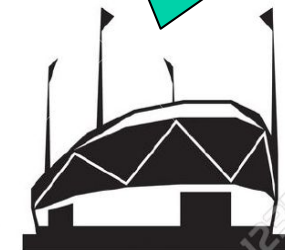
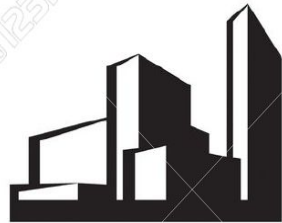
- Go back
- Go forward
- Drill Down
- New Window
- Interrogate
- External Wall:
- Core
- Inner
- Outer
- Interfaces
- Roof
- Floors
- Foundation
- Collaboration

Navigation menu

# Facility/Building Use

Interrogation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ Manufacturer
- ▶ Supplier
- ▶ Installer
- ▶ Product
- ▶ Accessory
- ▶ System
- ▶ Materials
- ▶ Collaboration
- ▶ **Building Use**



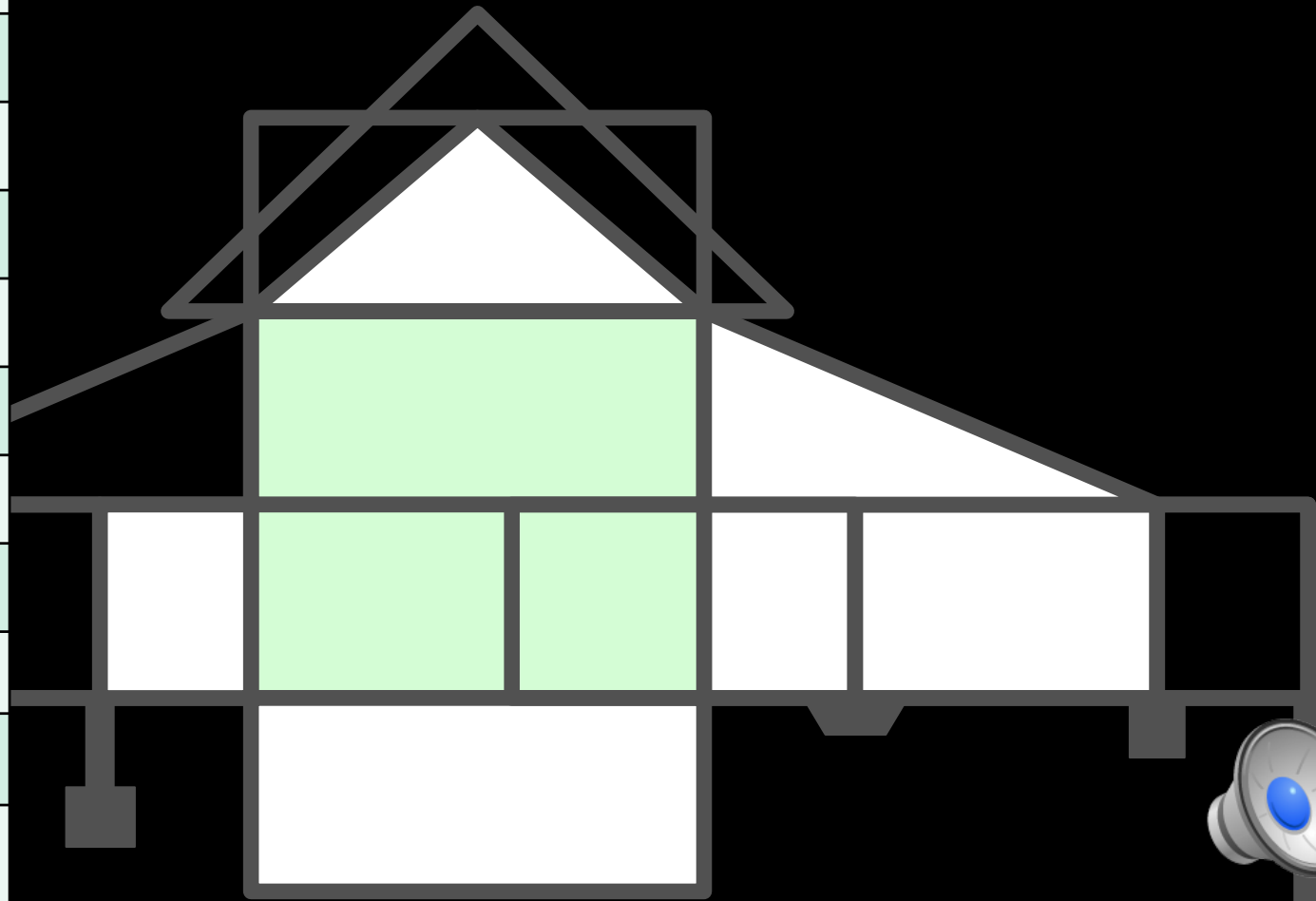
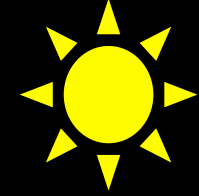
- ▶ Jargon Buster
- ▶ Checklist
- ▶ CPD Seminars
- ▶ Specification
- ▶ Equations
- ▶ Datasets
- ▶ Calculators
- ▶ Code
- ▶ Patterns
- ▶ Design
- ▶ RulesOfThumb
- ▶ Performance
- ▶ Case Studies



Navigation menu

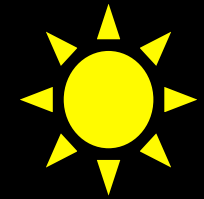
- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ +Basement
- ▶ +Attic
- ▶ +Room on Roof
- ▶ +Integral Garage
- ▶ +Extension
- ▶ +Conservatory
- ▶ Sun Space Porch
- ▶ +Landscape
- ▶ Collaboration

# Facility/Building Type: Format Variations



- ▶ J
- ▶ C
- ▶ C
- ▶ S
- ▶ E
- ▶ D
- ▶ C
- ▶ C
- ▶ F
- ▶ D
- ▶ R
- ▶ P

# Drill Down Sequence Elements



## Navigation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ Elements:
- ▶ Foundations
- ▶ Basemen
- ▶ Floor
- ▶ Frame
- ▶ Walls
- ▶ Roofs
- ▶ Landscape
- ▶ Collaboration



- ▶ I
- ▶ n
- ▶ J
- ▶ C
- ▶ C
- ▶ S
- ▶ E
- ▶ D
- ▶ C
- ▶ C
- ▶ F
- ▶ D
- ▶ R
- ▶ P



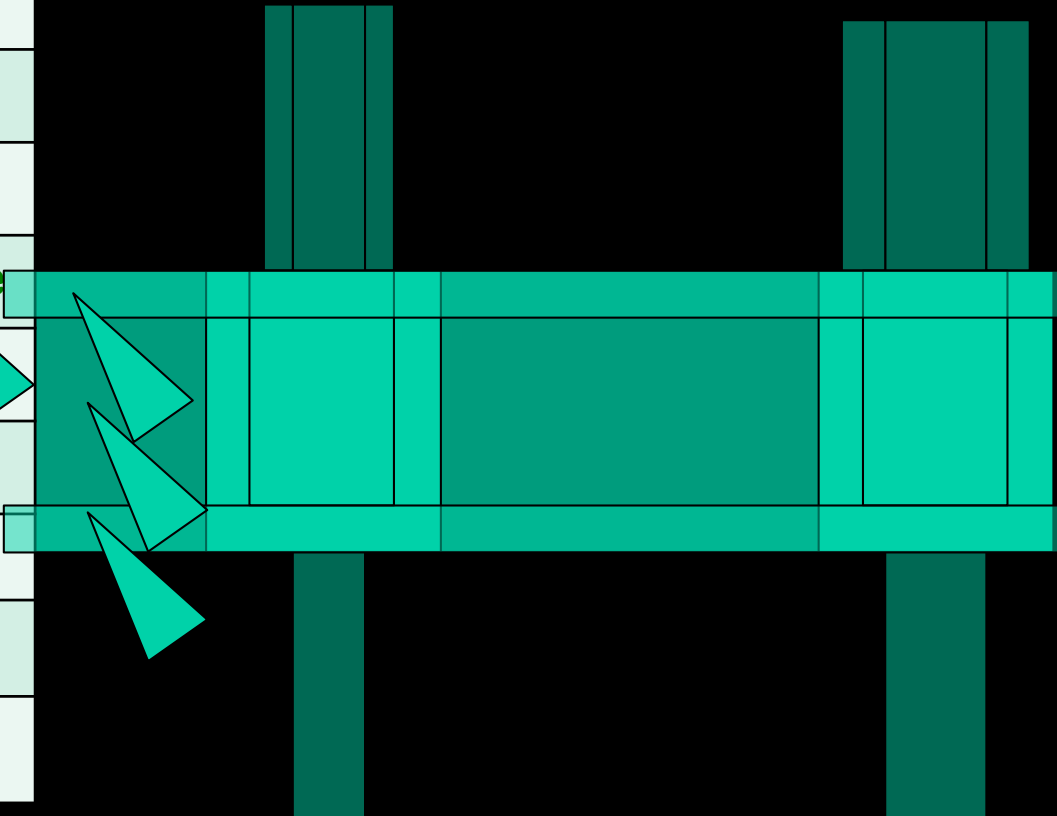
# Elements: Foundation

## Interrogation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ Foundation:
- ▶ Core
- ▶ Top
- ▶ Under/side/side
- ▶ Interfaces
- ▶ Basement
- ▶ Walls
- ▶ Floors
- ▶ Collaboration

## Interrogation menu

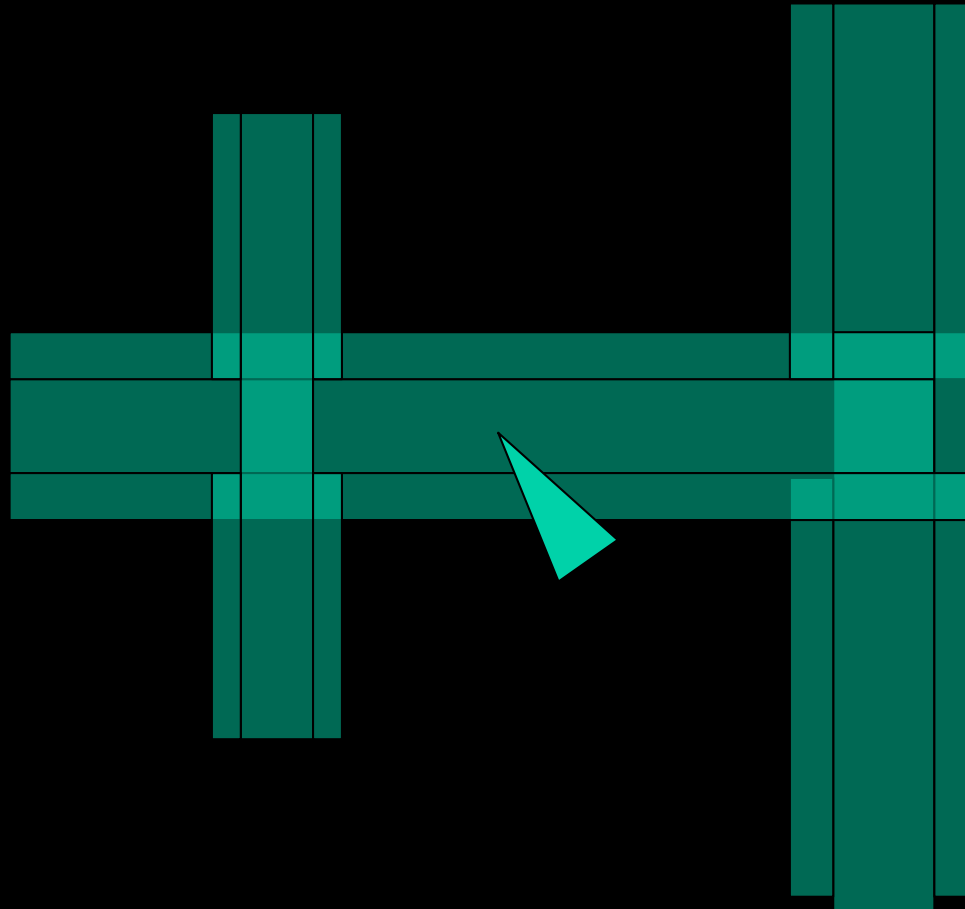
- ▶ Jargon Buster
- ▶ Checklists
- ▶ CPD Seminars
- ▶ Specification
- ▶ Calculators
- ▶ Library
- ▶ Links
- ▶ Code
- ▶ Patterns
- ▶ Design
- ▶ Rule OfThumb
- ▶ Performance
- ▶ Problems
- ▶ Solutions



## Navigation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ Floors:
- ▶ Core
- ▶ Top
- ▶ Underside
- ▶ Interfaces:
- ▶ Roof eaves
- ▶ External Wall
- ▶ Partitions
- ▶ Collaboration

# Elements: Floors



## Interrogation menu

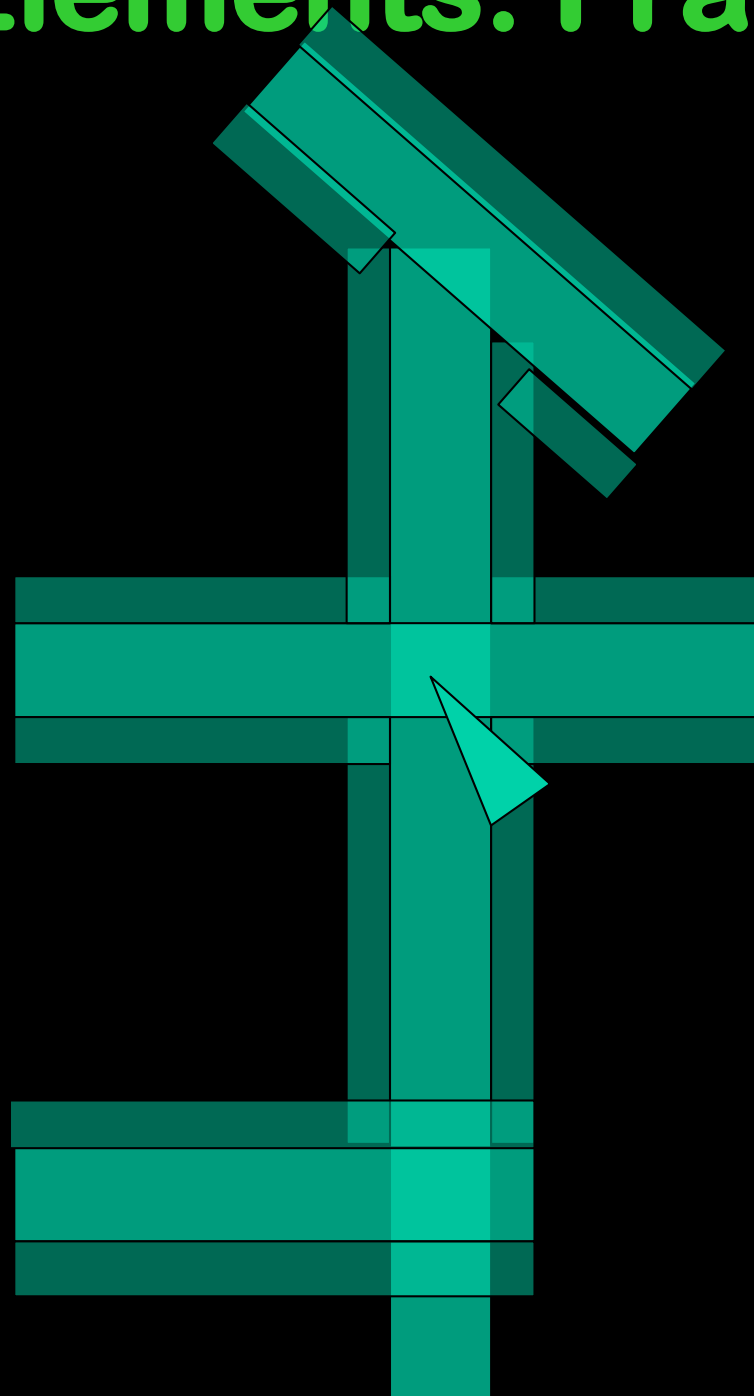
- ▶ Jargon Buster
- ▶ Checklist
- ▶ CPD Seminars
- ▶ Specification
- ▶ Calculators
- ▶ Library
- ▶ Links
- ▶ Code
- ▶ Patterns
- ▶ Design
- ▶ RulesOfThumb
- ▶ Performance
- ▶ Problem
- ▶ Solution



## Navigation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ **Frame:**
- ▶ **Core**
- ▶ **Lining**
- ▶ **Cladding**
- ▶ **Interface with:**
- ▶ **Roof**
- ▶ **Floors**
- ▶ **Foundation**
- ▶ Collaboration

# Elements: Frame



## Interrogation menu

- ▶ Jargon Buster
- ▶ Checklist
- ▶ CPD Seminars
- ▶ Specification
- ▶ Calculators
- ▶ Library
- ▶ Links
- ▶ Code
- ▶ Patterns
- ▶ Design
- ▶ RulesOfThumb
- ▶ Performance
- ▶ Problem
- ▶ Solution





## Navigation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ **Stairs**
- ▶ **Ramps**
- ▶ **Walkways**
- ▶ **Balustrades**
- ▶ **Interfaces**
- ▶ **Wall**
- ▶ **Floors**
- ▶ **Pavement**
- ▶ Collaboration

# Elements: Stair/Ramp

## Interrogation menu

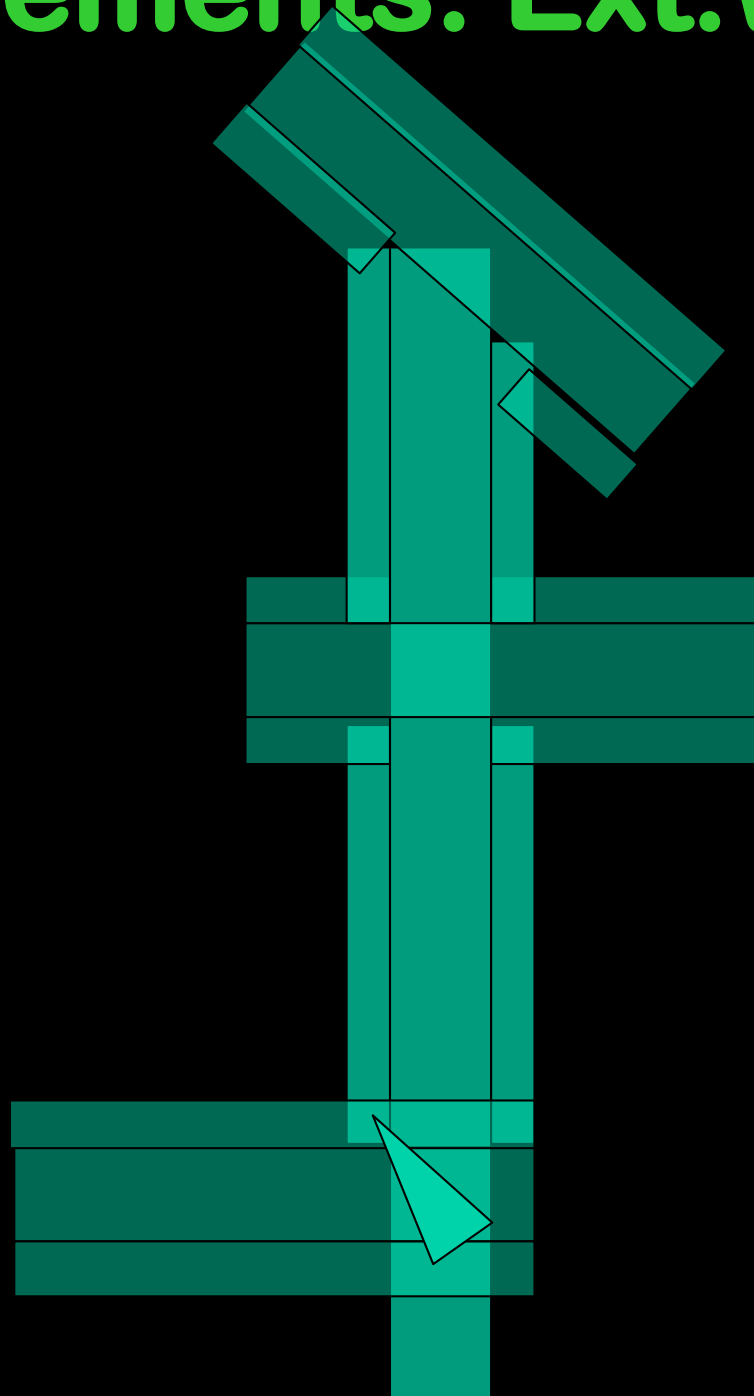
- ▶ Jargon Buster
- ▶ Checklist
- ▶ CPD Seminars
- ▶ Specification
- ▶ Calculators
- ▶ Library
- ▶ Links
- ▶ Code
- ▶ Patterns
- ▶ Design
- ▶ RulesOfThumb
- ▶ Performance
- ▶ Problem
- ▶ Solution



## Navigation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ External Wall:
- ▶ Core
- ▶ Inner
- ▶ Outer
- ▶ Interfaces
- ▶ Roof
- ▶ Floors
- ▶ Foundation
- ▶ Collaboration

# Elements: Ext.Wall



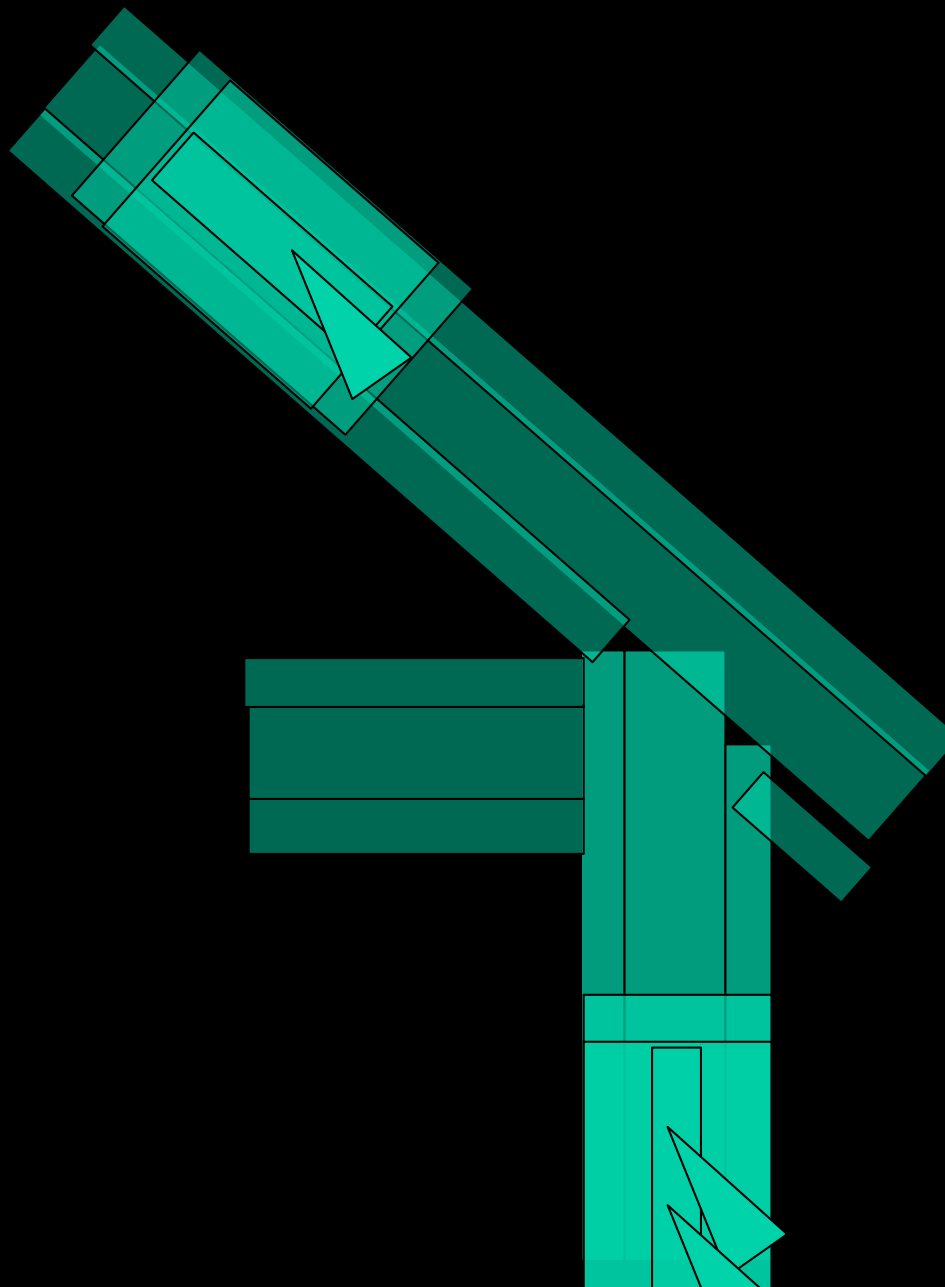
## Interrogation menu

- ▶ Jargon Buster
- ▶ Checklist
- ▶ CPD Seminars
- ▶ Specification
- ▶ Calculators
- ▶ Library
- ▶ Links
- ▶ Code
- ▶ Patterns
- ▶ Design
- ▶ RulesOfThumb
- ▶ Performance
- ▶ Problem
- ▶ Solution 

## Navigation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ Window
- ▶ Door
- ▶ Rooflig
- ▶ Roof Window
- ▶ Interfaces
- ▶ Wall
- ▶ Roofs
- ▶
- ▶ Collaboration

# Windows Doors Rooflights



## Interrogation menu

- ▶ Jargon Buster
- ▶ Checklist
- ▶ CPD Seminars
- ▶ Specification
- ▶ Calculators
- ▶ Library
- ▶ Links
- ▶ Code
- ▶ Patterns
- ▶ Design
- ▶ RulesOfThumb
- ▶ Performance
- ▶ Problem
- ▶ Solution



## Navigation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ **Systems:**
- ▶ **Air/Wind Tight**
- ▶ **Acoustic Ins**
- ▶ **Damp/Gas PM**
- ▶ **Thermal Insul**
- ▶ **Vapour Bar**
- ▶ **Fire Resistant**
- ▶ **Interfaces**
- ▶ **Collaboration**

# Systems: Proofing

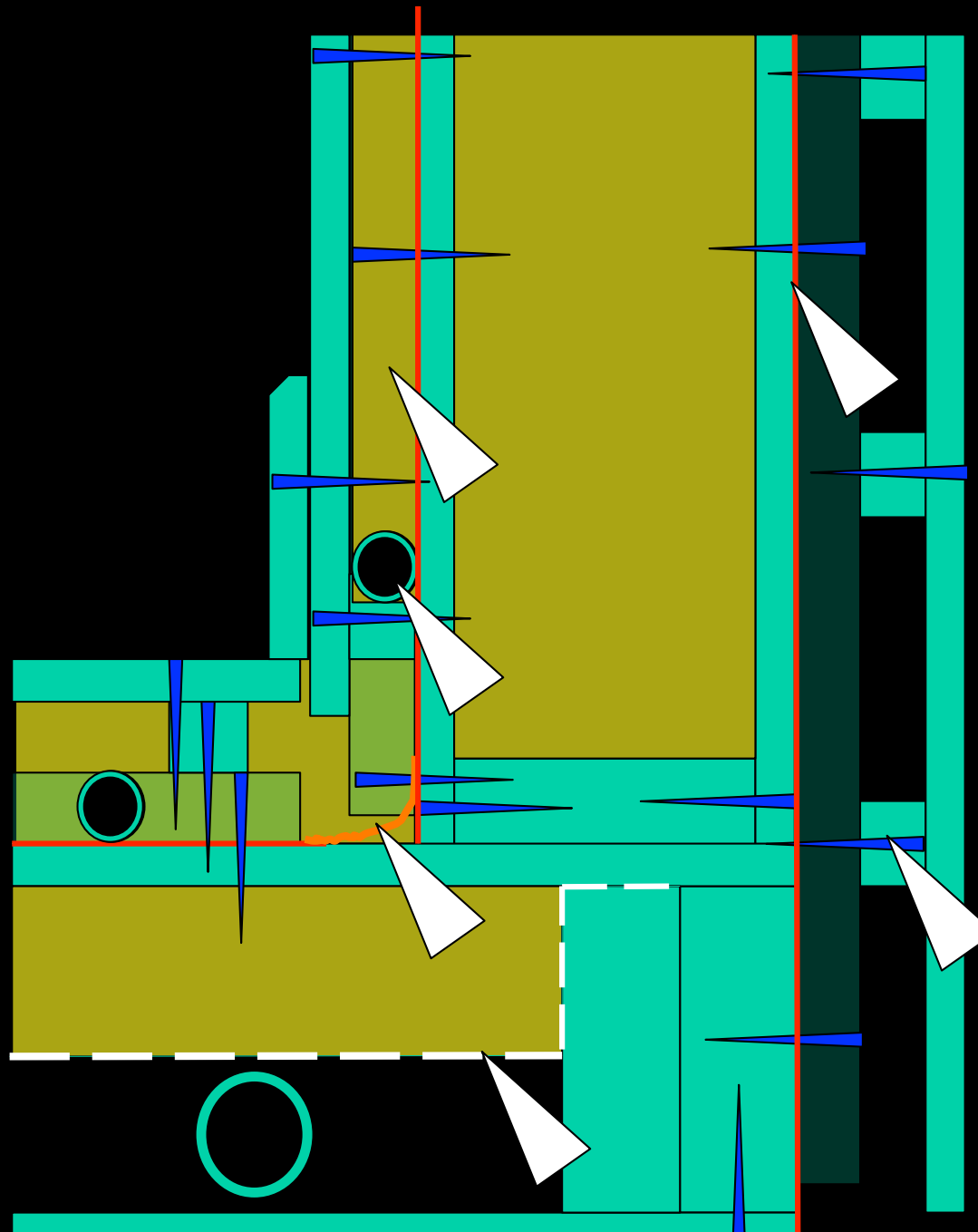
## Interrogation menu

- ▶ Jargon Buster
- ▶ Checklist
- ▶ CPD Seminars
- ▶ Specification
- ▶ Calculators
- ▶ Library
- ▶ Links
- ▶ Code
- ▶ Patterns
- ▶ Design
- ▶ RulesOfThumb
- ▶ Performance
- ▶ Problem
- ▶ Solutions 

## Navigation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ **Manufacturer**
- ▶ **Supplier**
- ▶ **Installer**
- ▶ **Product**
- ▶ **Accessory**
- ▶ **System**
- ▶ **Materials**
- ▶ Collaboration

# Components in Assembly



## Interrogation menu

- ▶ Jargon Buster
- ▶ Checklist
- ▶ CPD Semina
- ▶ Specification
- ▶ Calculators
- ▶ Library
- ▶ Links
- ▶ Code
- ▶ Patterns
- ▶ Design
- ▶ RulesOfThumb
- ▶ Performance
- ▶ Problem
- ▶ Solution



## Navigation menu

- ▶ Go back
- ▶ Go forward
- ▶ Drill Down
- ▶ New Window
- ▶ Interrogate
- ▶ Site
- ▶ City
- ▶ County
- ▶ Region
- ▶ Country
- ▶ Continent
- ▶ Collaboration

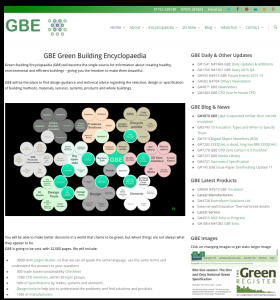
# Local



## Interrogation menu

- ▶ Jargon Buster
- ▶ Checklist
- ▶ CPD Seminars
- ▶ Specification
- ▶ Calculators
- ▶ Library
- ▶ Links
- ▶ Code
- ▶ Patterns
- ▶ Design
- ▶ RulesOfThumb
- ▶ Performance
- ▶ Problem Solving
- ▶ Solution





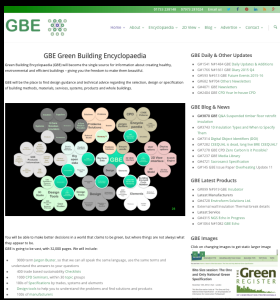
# Extracting Golden Nuggets



General Public Board		Unread Posts
	<p><b>Forum Index</b> Find the useful threads. Find the most pressing topics using a referenced index. Moderators: Tahir, Mark Siddall</p> <p><b>Child Boards:</b> <a href="#">0.0 Introduction</a>, <a href="#">1.0 Energy, Fossil Fuels and Carbon Emissions</a>, <a href="#">2.0 Building Design</a>, <a href="#">3.0 Building Services</a>, <a href="#">4.0 Materials And Construction Technology</a>, <a href="#">5.0 Refurb</a>, <a href="#">6.0 Land Use, External Works And Landscape</a>, <a href="#">7.0 AECB Standards / CarbonLite Accreditation</a>, <a href="#">8.0 Passivhaus</a>, <a href="#">9.0 Sustainability Rating and Benchmarking Systems</a>, <a href="#">Appendix 1: Debate and Discussion</a>, <a href="#">Appendix 2: Non-Technical Issues</a>, <a href="#">Suggestions Box</a></p>	<p>0 Posts 0 Topics</p> <p><b>Last post</b> by Kate de S in Re: MVHR in tower blocks on April 04, 2014, 10:49:03 AM</p>
	<p><b>General Public Board</b> Open to everyone Moderators: Tahir, Kate de S</p>	<p>3976 Posts 1197 Topics</p> <p><b>Last post</b> by Steve Ashton in Hydrotherapy Tub in hous... on July 06, 2016, 10:46:49 PM</p>
Announcements		Unread Posts
	<p><b>Noticeboard</b> Post member and general eco-building news here. Moderators: Chris Lord-Smith, Tahir, Kate de S</p>	<p>160 Posts 89 Topics</p> <p><b>Last post</b> by Ken Neal in fed up with the "debate"... on March 06, 2015, 07:04:55 PM</p>
	<p><b>AECB News</b> Moderators: Chris Lord-Smith, Tahir, Kate de S</p>	<p>54 Posts 41 Topics</p> <p><b>Last post</b> by Julia Bennett in MOVED: Job Vacancy: Keen... on July 02, 2014, 11:12:39 AM</p>
	<p><b>Swapshop</b> materials and services to exchange Moderators: Chris Herring, Tahir</p>	<p>36 Posts 23 Topics</p> <p><b>Last post</b> by David OLIVIER in Offered POLISHED STONE S... on June 06, 2015, 04:02:10 PM</p>
	<p><b>Jobs</b> Jobs and placements wanted or offered. Only viewable by logged on members. Moderator: Chris Lord-Smith</p>	<p>11 Posts 10 Topics</p> <p><b>Last post</b> by Andrew Money in Energy Consultant   Glas... on November 10, 2015, 01:54:12 PM</p>
	<p><b>Events</b> View and post events directly on the events page in main website menu. Moderators: Chris Lord-Smith, Kate de S</p>	<p>256 Posts 241 Topics</p> <p><b>Last post</b> by Lucy Pedler in Achieving Airtightness, ... on April 04, 2016, 02:21:12 PM</p>
	<p><b>Website and Forum</b> Rules &amp; help. Post ideas and feedback relating to the website and forum. Moderators: Tom Anderson, Nick Grant, Chris Herring, Tahir</p>	<p>81 Posts 27 Topics</p> <p><b>Last post</b> by Admin in Re: Spam again on February 26, 2014, 10:38:15 PM</p>
	<p><b>Soapbox</b> Discuss Soapbox articles - AECB members share their personal views on a topic Moderator: Tahir</p>	<p>95 Posts 32 Topics</p> <p><b>Last post</b> by Emma Furniss in Retrofitting - the Effic... on June 14, 2016, 02:04:22 PM</p>
Technical Forums		Unread Posts
	<p><b>Building Design</b> Strategic and detail. envelope and structure, rain and airtightness, thermal performance passive solar, cooling, daylighting, and acoustics. Moderators: Chris Herring, Peter Wilkinson, peter warm, Peter Wilkinson, Mark Siddall</p>	<p>1940 Posts 270 Topics</p> <p><b>Last post</b> by Ken Neal in Re: EWI using direct or ... on March 31, 2016, 04:05:32 AM</p>
	<p><b>Building Refurbishment and Retrofit</b> Strategic and detail for building refurbishment. Thermal envelope, moisture management, ventilation, and airtightness. Moderators: Nick Grant, Andy Simmonds, Mark Siddall, Tim Martel</p>	<p>658 Posts 116 Topics</p> <p><b>Last post</b> by Helen Richards in Re: External Wall insula... on June 01, 2016, 09:52:08 AM</p>
	<p><b>Building Simulation</b> Discussion of building simulation using the CLP preferred modelling tool PHPP (and other equivalent software.) Viewable only to members. Moderator: Mark Siddall</p>	<p>590 Posts 85 Topics</p> <p><b>Last post</b> by Phil Bixby in Modelling performance of... on November 12, 2015, 08:21:24 AM</p>
	<p><b>Building Services</b> Heating and vent, electrics and lighting, water management. Moderators: Nick Grant, Mark Siddall</p>	<p>1911 Posts 290 Topics</p> <p><b>Last post</b> by Andy Palmer in Re: Purge Ventilation in... on March 22, 2016, 05:58:28 PM</p>
	<p><b>Materials and products</b> Including timber certification, paints, insulation, windows etc Moderators: Chris Herring, Mark Siddall</p>	<p>994 Posts 168 Topics</p> <p><b>Last post</b> by fostertom in Re: Icynene - alternativ... on February 03, 2016, 02:42:43 PM</p>
	<p><b>Landscape/habitat/ecology</b> Green facades and roofs, surface water /SUDS sewage. Moderator: Nick Grant</p>	<p>86 Posts 18 Topics</p> <p><b>Last post</b> by Andy Simmonds in Re: Mad ideas for saving... on February 22, 2012, 12:46:34 PM</p>
Resources		Unread Posts
	<p><b>Literature and resources</b> Wanted/recommended/for sale. Books, papers, free info, websites, software etc. Moderators: Eric Parks, Mark Siddall</p>	<p>143 Posts 40 Topics</p> <p><b>Last post</b> by Fahimeh Tatarestaghi in iPHA database on July 24, 2015, 05:20:32 AM</p>







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Cycle Assessment Procedure for Eco-impacts of Materials



# The AECB Forum

- is very informative,
- has been very popular
  - 71,962 views, 46 replies in 1 topic
    - Congratulations Mark Siddall: Psi values
- was a great way to share know-how;
  - And its static not a drip feed like SM
- was an invaluable part of the AECB offering
  - to its members and way beyond

16/07/16



# Overtaken by Social Media

- AECB Forum's role has been overshadowed
  - in the last 5-7 years
  - by the enormous success of social media platforms,
  - which can play a similar role
  - but with continually added sophistication
  - offer much more to users



# Whist AECB Forum platform has become moribund

- its content remains as valid as ever.
- By virtue of its format:
  - it is full of golden nuggets
  - buried in long strings of chatter
  - sometimes cyclical and often repetitive.
  - its many strands of discussion were not joined up or cross linked,
  - to the detriment of its users learning opportunities.



Subject / Started by	Replies / Views	Last post
PassivHaus Flat Warm Roof Started by Architype	1 Replies 2835 Views	March 10, 2012, 07:21:05 AM by Mark Siddall
Relative Resale Value of PH Started by Toby Cambray	2 Replies 2316 Views	February 07, 2012, 07:03:35 PM by Nick Grant
2012 consultation on changes to the Building Regulations in England: Section two Started by Andy Simmonds	0 Replies 2774 Views	February 01, 2012, 11:25:34 AM by Andy Simmonds
Inadequate Ventilation Started by Toby Cambray	7 Replies 4066 Views	January 20, 2012, 07:32:57 AM by Nick Grant
Air Tightness at Flue Penetration Started by Peter Gunning	4 Replies 3131 Views	December 19, 2011, 05:33:23 PM by Peter Gunning
Tricky airtightness detail Started by Mike Jacob	5 Replies 3165 Views	December 15, 2011, 02:19:49 PM by Ralph Perry Robinson
U-value calculations for windows and doors Started by Richard Partington	3 Replies 5483 Views	November 03, 2011, 10:13:30 AM by Nick Grant
Unventilated cold flat roofs Started by Jim Miller Design Ltd	2 Replies 3644 Views	October 04, 2011, 11:36:23 AM by Nick Grant
$\Psi$ Values - Thermal Bridging Started by Mark Siddall « 1 2 3 4 »	46 Replies 71962 Views	June 12, 2011, 10:34:47 AM by Dean Holway
Airtightness of earth plaster Started by Dave Howorth	1 Replies 5879 Views	April 22, 2011, 08:03:11 AM by Nick Grant
Rethinking Urban Design Started by Mark Siddall	4 Replies 3511 Views	March 18, 2011, 05:51:50 PM by Mark Siddall
Code Level 4 / Passivhaus and local authorities Started by Phil Bixby	0 Replies 2235 Views	March 17, 2011, 05:14:51 PM by Phil Bixby
Accessible Threshold Started by Haydn Bennett	1 Replies 2757 Views	March 13, 2011, 11:08:32 PM by Chris Herring
Risks of mixed performance Started by Mike Jacob	2 Replies 2282 Views	February 08, 2011, 10:04:47 PM by Mike Jacob
EWI, new porch and thermal bridging Started by Ishara	5 Replies 3540 Views	February 02, 2011, 10:58:10 AM by Paul Buckingham
Using thermally massive elements as internal solar shading Started by Y Claire Jenkins	4 Replies 3456 Views	January 08, 2011, 03:43:34 PM by Christian Nialki
Cube 6 Beam and Block floors for PassivHaus Started by Brill Phil	0 Replies 2608 Views	January 06, 2011, 03:28:39 PM by Brill Phil
Basement escape well construction Started by Mark Bennett	9 Replies 5415 Views	November 26, 2010, 12:38:39 PM by Y Claire Jenkins
Sauna in PHPP! Started by Roger Kelly	4 Replies 2845 Views	November 23, 2010, 07:51:58 PM by Roger Kelly
External insulation Started by Sophie Garner	4 Replies 3371 Views	November 13, 2010, 05:44:57 PM by J Ingram

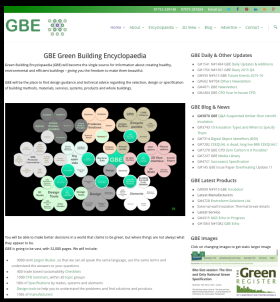
- Topic you have posted in
- Normal Topic
- Hot Topic (More than 4 replies)
- Very Hot Topic (More than 10 replies)
- Locked Topic
- Sticky Topic
- Poll

Jump to:

# This GBE proposal is to:

- Determine the ambitions for ‘the essence or nuggets’,
  - AECB Gurus essential to decide what is valid
- Prepare briefing document and provide training:
  - to project team (AECB members?)
  - to know what to look for to save
  - how each will be used in the end
  - what to discard
- Copy the content out (into Word for example, if it possible?)
- Highlight the essence
- Strike out the chatter (track changes on)
- AECB Gurus & GBE check, confirm approach and catch loose ends
- team members filter files and accept or reject changes
  - Reformat for end uses





# Capture the essence,

- Its 'golden nuggets'
- Convert them into the most appropriate formats:
  - Reference Documents/Bibliographies/Software tools
    - Reviews/critiques of parts
  - Checklist
    - By trade: avoid this, consider these, reclaim and reuse, etc.
  - Datasets, Equations, Calculators, Tools
  - Specifications:
    - Recipes, Materials, Products, Accessories, Systems
    - Elemental assemblies, junctions and details
  - Drawings,
    - Elemental assemblies, junctions and details
  - Outlines: Essence of a thing in Hierarchy
  - Etc. see more below



**Mark Siddall**  
Moderator  
Posts: 1219

**$\Psi$  Values - Thermal Bridging**  
« on: February 22, 2007, 11:57:58 AM »

[Quote](#)

Is anybody aware of any software that will assist with calculating  $\Psi$  Values /thermal bridges?

There's a whole raft of guidance, see below, but what is really needed is a simple user-friendly tool to assist the everyday designer, rather than just the researching building scientist. Furthermore, the U-value software I have come across does not assist with non-repeating thermal bridges it simply focuses upon an elemental repeating thermal bridge.

Guidance includes:  
EN ISO 9346 (1996) - Thermal insulation - Mass transfer - Physical quantities and definitions  
EN ISO 10456 (1999) - Thermal insulation - Building materials and products - Determination of declared and design thermal values  
BS EN ISO 10211 (2001) Thermal Bridging Pt1 + Pt2  
EN ISO 15799 (1998) - Thermal performance of buildings - Transmission heat loss coefficient - Calculation method  
EN ISO 14683 Thermal bridges in building constructions. Linear thermal transmittance. Simplified methods and default values.  
BRE IP 106 Assessing the effects of thermal bridging at junctions around openings  
BS EN 1745: 2002: Masonry and masonry products. Methods for determining design thermal values (London: British Standards Institution) (2002)

Mark

[Report to moderator](#) [Logged](#)

**David OLIVIER**  
AECBmember  
Posts: 797

**Re:  $\Psi$  Values - Thermal Bridging**  
« Reply #1 on: February 22, 2007, 02:37:18 PM »

[Quote](#)

Mark

Have you tried THERM? Free from the USA, thanks to their enlightened Dept of Energy (Lawrence Berkeley Laboratory, Univ of California).

I used to use FRAME - free from Canada (written by Enermodal Engineering for the govt.) - but may have been overtaken by THERM. Was very user-friendly though.

David.

[Report to moderator](#) [Logged](#)

**Mark Siddall**  
Moderator  
Posts: 1219

**Re:  $\Psi$  Values - Thermal Bridging**  
« Reply #2 on: February 22, 2007, 06:06:00 PM »

[Quote](#)

David,

I had a play with THERM a while back, very user friendly. I was surprised. The trouble with the software is that it does not calculate the  $\Psi$  Values/RSi in accordance with ISO 10211, or any of the supporting, or related, documents. I contacted LBL about this that they gave the following response: -

"First, we don't anticipate adding the ISO 10211 calculation to THERM in the near future (i.e., the next few years), but I will add it to our features list.

Second, even though THERM doesn't report these numbers directly, THERM can be used to perform the simulations to calculate these numbers. For the linear thermal transmittance (psi value), you need to perform 2 separate simulations with the team and give me the details of the glazing system.  
For the Condensation Risk, I assume that all you need are temperatures are certain points."

I'm not sure how to use the data from the "2 separate simulations" to derive the  $\Psi$  Values. I was, perhaps lazily, hoping for a European version. A point worth noting is that THERM is really designed for designing windows, as a result the library of materials is not so great.

I have investigated the range of software from Physibel (Bisco, Trisco etc.) but each package costs about £2-4.5k, which is a little steep for the use it would get. Physibel did work on Eurokobra (a digital atlas of thermal bridges) and I have had close a look at this software as well and found that:

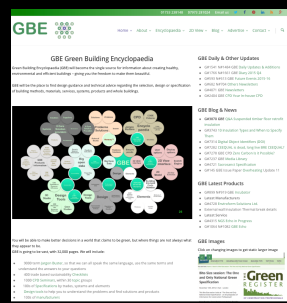
- Though you can customise existing details to some extent it does not allow you to construct new details and then test them. This is a great limitation (this also relates to a number of the subsequent points.)
- Many of the details offered by the software are more suited to domestic use than to larger developments.
- A good number of the details are continental i.e. they rely upon concrete frame structures, whereas in the UK the predominant primary structure is steel frame.
- We tend to find that many contractors prefer to over board secondary steel with cementitious board, or similar, rather than blockwork, again this is not accounted for in the database of details. No details for this form of construction are available. Again this relates to the software not reflecting aspects of the UK construction industry.
- It is a shame that it does not calculate U values in accordance with BS EN ISO 6946 - Building components and building elements (noted in the User Manual).

(Oh, and by the way if you visit the Eurokobra website, the BRE doesn't distribute the software anymore. EURISOL the insulation trade organisation may still do so but last I heard it cost £250, which means, to my mind at least, it isn't

Bibliography?

Software review?





Paul Teather

Re: N50 Air Tightness Specification  
« Reply #11 on: July 15, 2009, 12:39:31 PM »

Quote

Posts: 15



Alan, you have saved me a posting!

So, some calculations:

Consider the most common type of build in recent years - a 60m<sup>2</sup> floor area flat (This also applies to a bungalow)

The shape of a building, for a given floor area will vary considerably but if we look at a simple 6mx10m shape:

Surface Area = 196.8m<sup>2</sup>  
Volume = 144m<sup>3</sup>

If the permeability is q50 = 10 m<sup>3</sup>/h/m<sup>2</sup>

Then air change n50 = 13.67 1/n

Difference 36.7% under-estimation of air leakage

Calculator?

As SAP now uses permeability instead of air changes this result in huge errors in heat loss calculations (Typical ventilation heat loss for homes is around 35-45% and can be significantly higher for flats (I have seen up to 70% on well insulated, whole house ventilation flats at q50=10).

Review?

I have challenged BRE but they refuse to correct the error.

Spec?

One reason given is that Air tightness testers only record permeability. This is in fact incorrect (I speak as a qualified air tightness tester) and all domestic air tightness certificates should have both permeability and air change rates.

Checklist?

I would also add to Alan's assertion that the majority of the building fabric is air tight - it is joints and services that cause most problems (along with cavities and thermal by-pass (see Mark Siddal's report)

« Last Edit: July 15, 2009, 12:42:31 PM by Paul Teather »

Report to moderator Logged

Pages: [1]

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AECBNuggestKnowhow



3





Encyclopaedia Know-how Information	Design Principles Code & Patterns Rules of Thumb	Products Materials Accessories	Solution Providers:	Services to manufacturers Suppliers & Installers	News, Blogs Events & Diary
CPD Seminars	Jargon Buster	Methods of Construction Systems	Manufacturers & Suppliers	Consultancy	Links
Specification	Sustainability Checklists	Systems, Elements & Whole buildings	Applicators & Installers	Disciplines	Video & Images
Calculators	Defects & Solutions	Websites & Databases	About GBE	Project Case Studies	Feedback

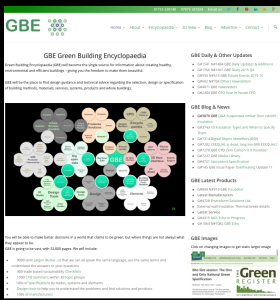


# Deliver them using website technology

- Join-up all the related information from all relevant Forum discussions
- Links in both directions
- to be as accessible and useful as possible
- (GBE Neural network)

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# GBE

[www.GreenBuildingEncyclopaedia.uk](http://www.GreenBuildingEncyclopaedia.uk)

# CAP'EM

Cycle Assessment Procedure for Eco-impacts of Materials



## Make available to AECB

- To members and
- the public at large.
- Via GBE, AECB website(s)
- or both linked up using RSS technology

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AECBNuggestKnowhow



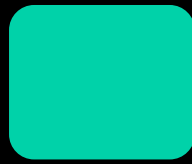
GBE GBE



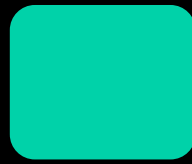
CAP'EM Interreg



Build4LIFE LIFE+



TransEco Interreg



BBA Private



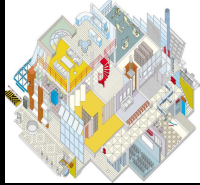
AECB Guru ExpSys



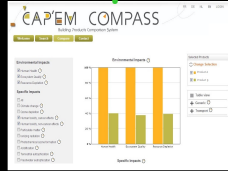
AECB Nuggets



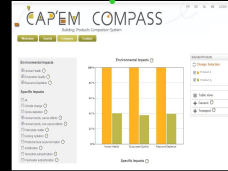
2D VIEW



Compass



Compass+



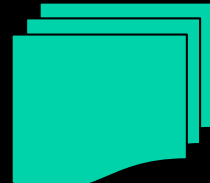
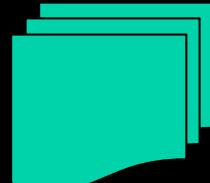
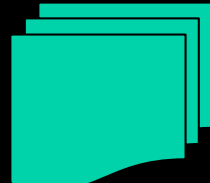
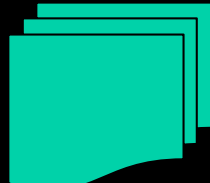
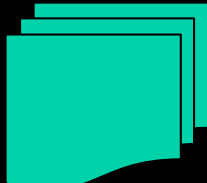
Networks

Healthy Building Specification

Expert Encyclopaedia System

Outlines  
BIM  
Apps

Pages on websites



Neural networks



Virtual Pages on websites

To replace or complement legacy pages or websites after projects complete

Templates, Pages, Blocks, Datasets,

SQL database

RSS feeds



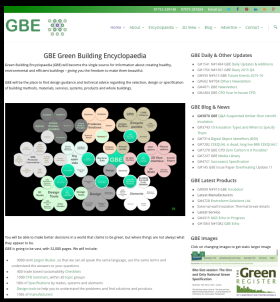


# Who does what?

- The process of assimilating this information
- Could and should be a joint effort between
- AECB members and GBE in close liaison throughout.
- Shared: spread nuggets between many, if little funding
- Carried out by AECB members
- Checked by GBE if fully funded
- Building Website/parts/linking GBE happy take on when funded

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# GBE

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# CAP'EM

Cycle Assessment Procedure for Eco-impacts of Materials



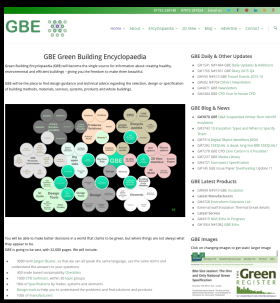
# Capture the know-how of AECB Gurus before it is lost forever.



# Who are the Gurus?

- People like:
- David and his numbers and number crunching
- Mark e.g. Psi and Thermal Bypass
- Paul e.g. Airtightness
- Recent Graduates with Dissertations, Masters or PhDs on focused subjects



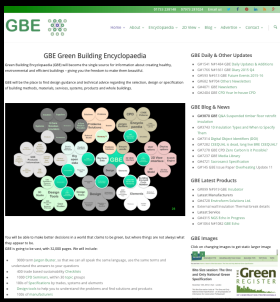


# Priorities:

- Oldest first
- Younger will do this with their own know-how during their career, I hope





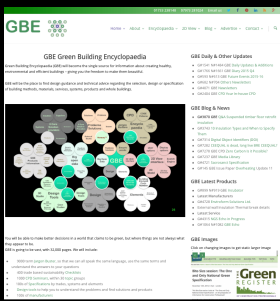


# Process

- Work with the Gurus to determine what could be useful to others in their absence
- With AECB agreement.
- Record their knowledge and know-how turn it into:

16/07/16





# Know where

- Sources of data or knowledge
- Bibliography with links to PDFs or online shops





# Know-how

- How to use and apply the data in detail
- Method statements detailed enough to follow
- Procedures to get best results

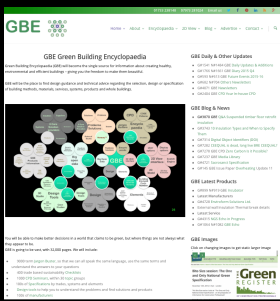




# Knowledge

- Pages of illustrated text
- By the GURUs or assisted by writers/editors
- Builds to Encyclopaedia
- Extracts from magazine back copies (Proposal 3?)





## Issue papers:

- Take one Issue
- Download brain(s)
- Organise into subtopics to become pages
- Make into web pages and hyperlink like a daisy chain
- Cross link with other Issue daisy chains







# GBE

www.GreenBuildingEncyclopaedia.uk

# CAP'EM

Cycle Assessment Procedure for Eco-impacts of Materials

Investing in Opportunities

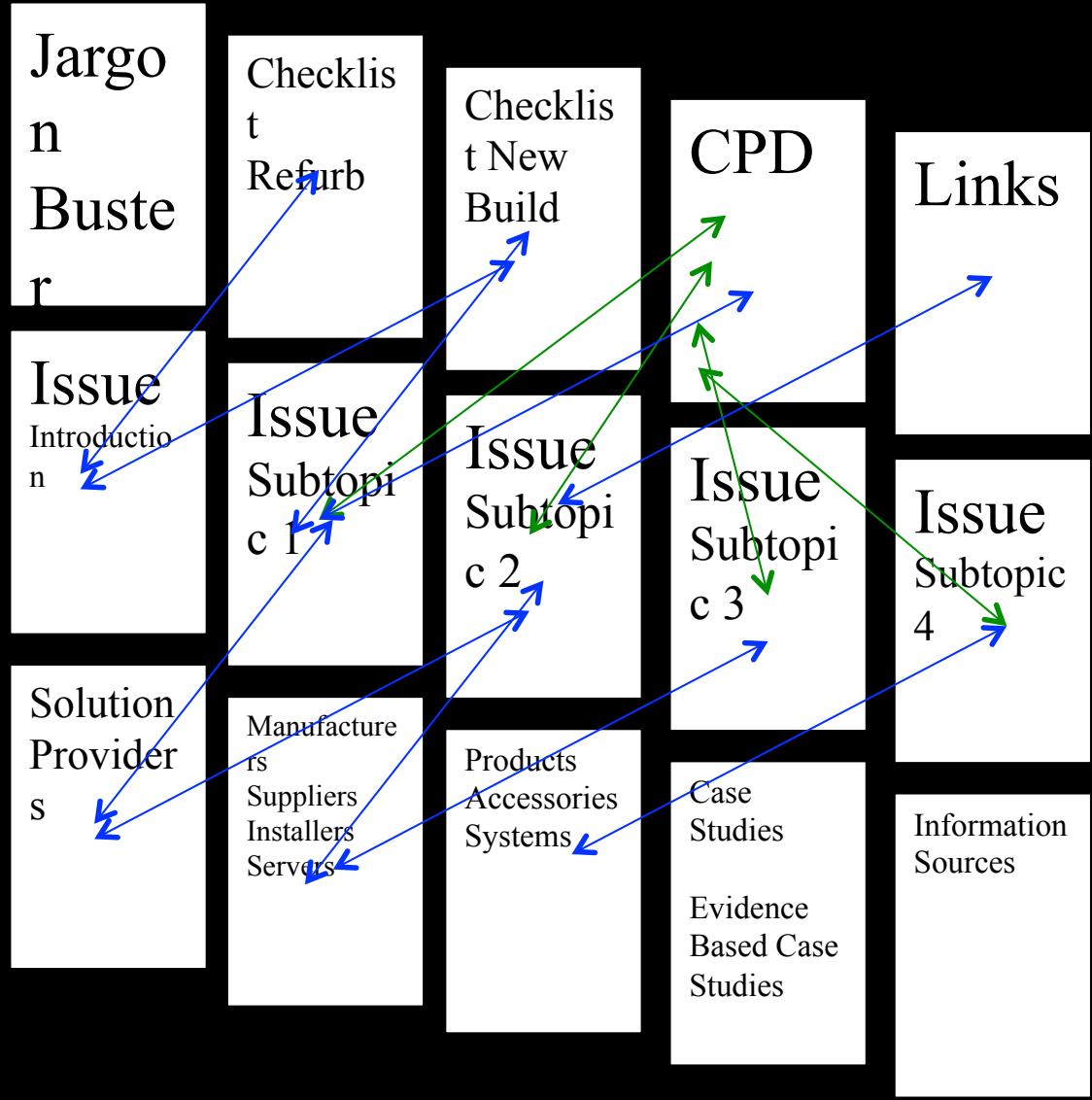
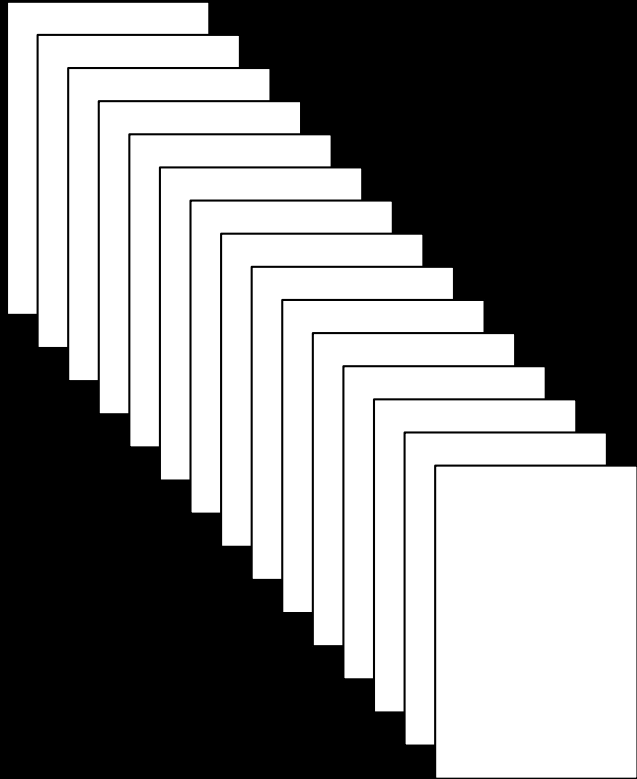


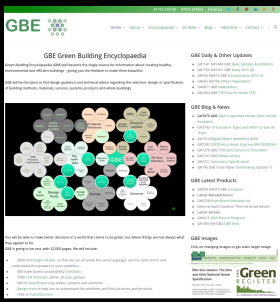
This project has received European Regional Development Funding through INTERREG IV-B.



INTERREG IV-B

# Issue Paper Diagram



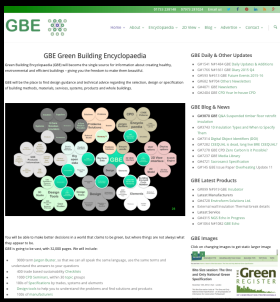


# Know-how

- Data sets of materials, properties
- Equations to interrogate data sets to make calculators
- Calculators to become Apps (for BIM for example)
- Multiples to create modelling tools







## Expert Systems:

- Capture their analytical thought processes
- Materials and methods Hierarchical Outlines of their essence (Weatherboarding example)
- Develop expert-system to allow others to experience them and learn from them
- Convert as much as possible into design and decisions tools

16/07/16



- H21 → TIMBER WEATHERBOARDING ¶
- OUTLINE: ¶
- + Performance requirements ¶
  - Resist wind load and uplift ¶
  - Resist deflection and creep ¶
  - + Weatherboarding ¶
    - Exclude wind driven rain ¶
    - Ventilation through space behind weatherboarding ¶
    - Drainage through space behind weatherboarding ¶
  - + Rainscreen ¶
    - Permit limited rain passage but drain out at base ¶
    - Pressure equalisation through open joints ¶
    - Ventilation through space behind rainscreen ¶
  - Not generate wind noise or rattling ¶
  - + Fire performance ¶
    - Fire resistance at site boundaries ¶
    - Low spread of flame in escape routes ¶
    - Combustibility ¶
  - + Design life & Durability ¶
    - Meet design life ¶
    - 30 years treated softwood ¶
    - 40 years durable hardwood ¶
  - + Maintain good appearance ¶
    - Fade to grey/silver ¶
    - Avoid corrosion staining ¶
    - Avoid rainwater splash staining/fading ¶
    - Require redecoration at intervals ¶
  - + Maintenance ¶
    - None ¶
    - Frequent and predictable ¶
    - Replacement after design life ¶
    - Damage at low level ¶
    - Rain splash discolouration ¶
    - Trapped contact water damage ¶
    - Persistent gutter overspill? ¶
  - + Security ¶
    - Prevent removal of screen ¶
    - Prevent entry into building ¶
  - Flora and Fauna exclusion or inclusion ¶
- + Exposure Conditions & Fire characteristics ¶
  - + Hazard Class: ¶
    - + Hazard class 3: Above ground, not covered ¶
      - + Timber of durability class 1, 2 or 3 ¶
        - suitable without treatment ¶

16/07/16

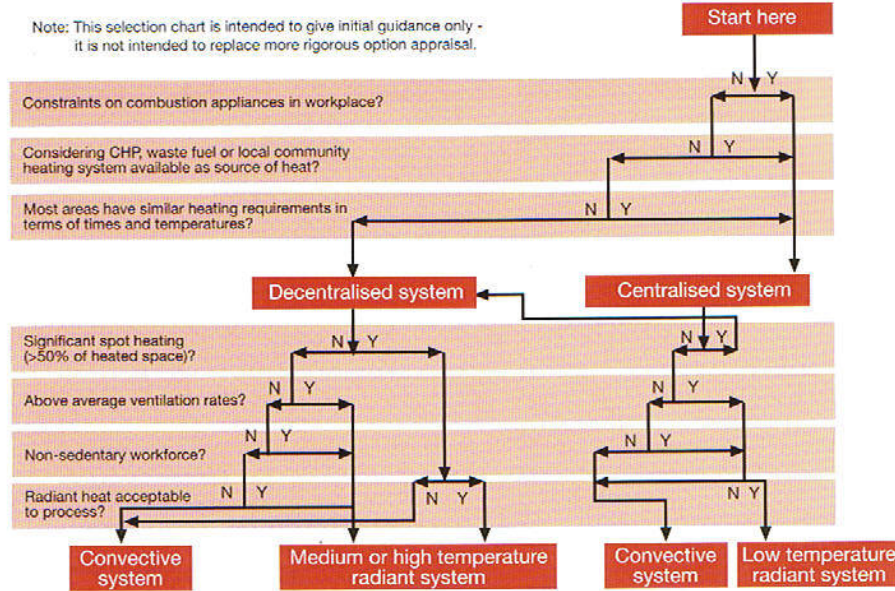


3

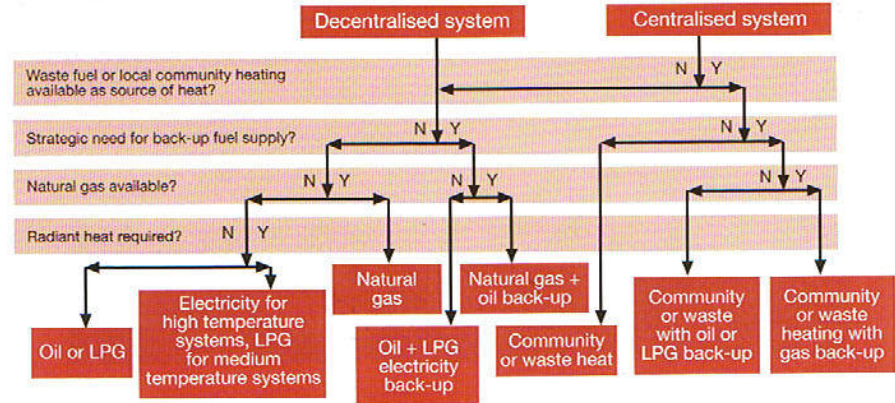
SELECTION CHART SCI

Selection Chart SC1A – Heating Systems

Note: This selection chart is intended to give initial guidance only - it is not intended to replace more rigorous option appraisal.



Selection Chart SC1B – Fuel Selection



16/07/16

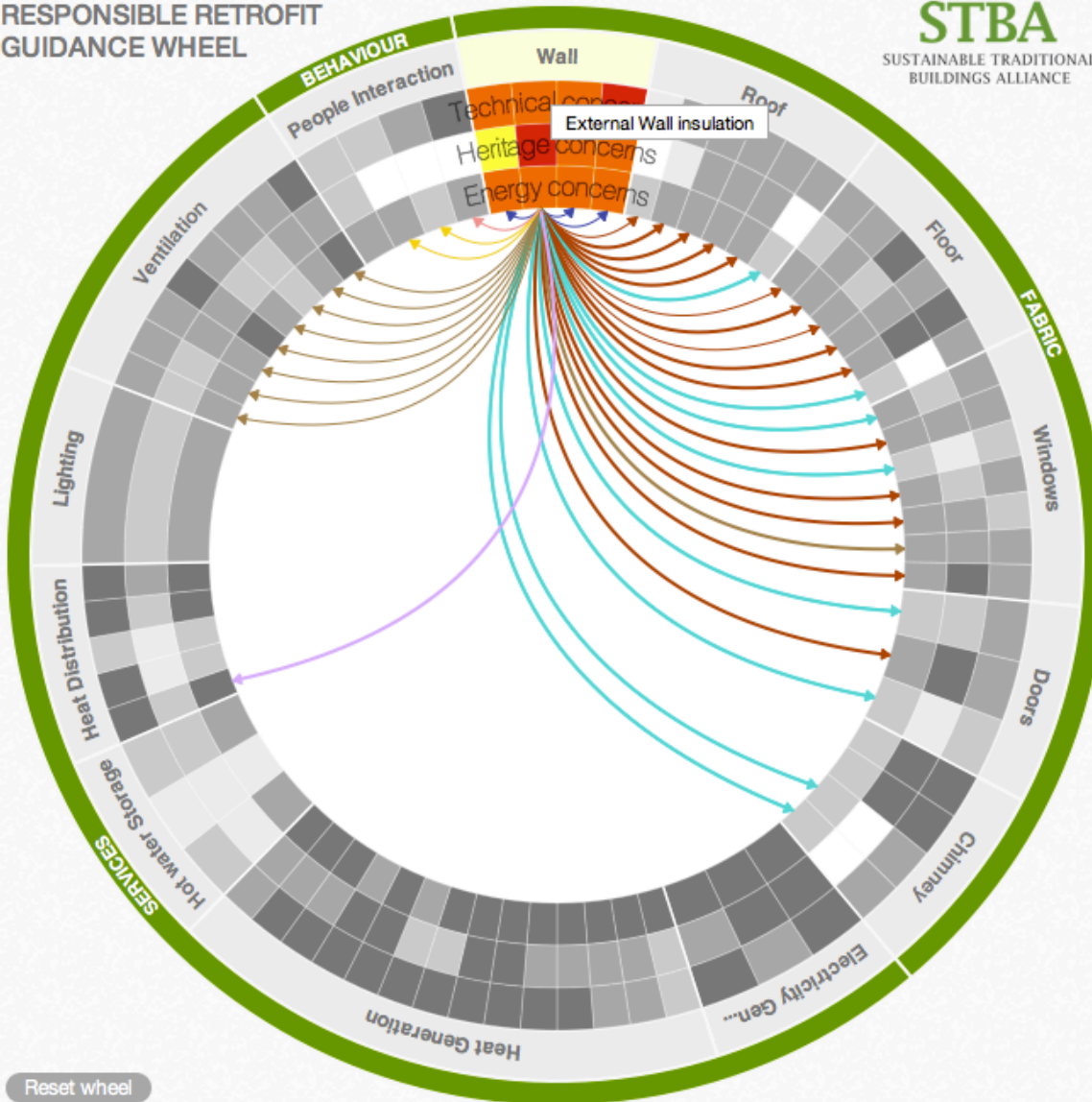


Type search here ...

All Categories



## RESPONSIBLE RETROFIT GUIDANCE WHEEL



## STBA

SUSTAINABLE TRADITIONAL BUILDINGS ALLIANCE

GETTING STARTED

ABOUT

GLOSSARY

REPORT

### ► Colour key

### ► Building context

Wall

### External Wall insulation

Application of an insulation material and a weather-protective finish to the outside of the wall

ADD TO LIST

CLOSE MEASURE

### ► Advantages

► 7 Technical Concerns

► 3 Heritage Concerns

► 3 Energy Concerns

► Related measures



# GBE would welcome the opportunity to work with AECB

to:

- extract the essence of the Forum,
- capture its Guru knowledge and
- what it's individual members do and
- make it readily available to all of it's members and to a wider audience.



# The process of assimilating this information

- would be a joint effort
- between AECB members
- Expert system authors
- (up skill AECB members?)
- GBE in close liaison throughout.



# Why would anybody want to do this?

- A chance to work with Gurus
- A learning opportunity
- Potential for specialisation
- Specialist careers awaiting
- A Guru's Mini me



# Who would want to do this?

## Somebody:

- With an inquisitive mind
- that wants to develop Apps
- who needs to know a Guru's know-how
- who want to be the Guru's

16/07/16

# mini-me

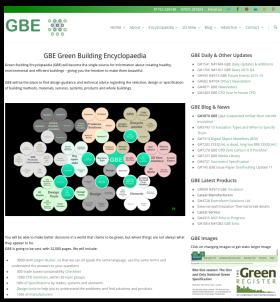




# All contributors

- Of know-how, time or funding
- Acknowledged on each page or text block footer
- Along with © Establishment
- © AECB Ian Cooper 2017;  
Funding: Indigogo Crowdfund 50% AECB 50%
- Linked to individual or company pages;
- In turn linked to all contributed pages





# Costs

- relate to time to carryout tasks
- all need to be paid to do this  
–or no incentive



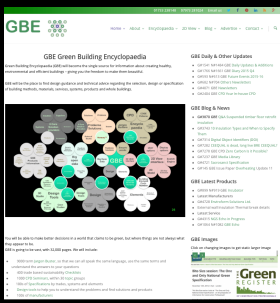


# Total costs? Nuggets

- How long is a piece of string?
- We don't know
- There are lots of pieces of string
- All different lengths
- Some surplus to requirements
- We have not tried to unraveled them yet
- We can do trial runs:
  - unraveling and trimming
  - tying knots to link them back up
  - and do a pro rata budget

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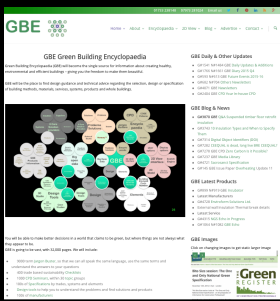




# Total costs? Gurus

- Until you get inside their brains
- How will you ever know?
- Until they have downloaded their brains
- You wont know what your have to deal with
- This could be a long continuing process
- Get it out first, organise it later





# Income

- from sale of:
  - Files: data sets, tools, apps
  - CPD, Specification, outlines calculators
  - Membership (then files free)
  - Pages occupied by paying guests



# Income apportioned as appropriate:

- overhead costs to hosting website
- income for time or know-how contributors
- repay AECB to cover development costs
- if not funded by other means



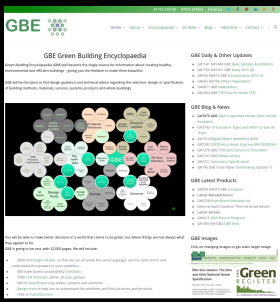


# How paid for?

- **Crowd funders view:**
- **Green Building Encyclopaedia**
  - Oh yes our people would be very interested in that
- **2D or 3D interface to Encyclopaedia**
  - Yes please, even better
- **But 30% is expected to come from the project team's contacts**
  - Concerted email and SM campaign
  - Each of us can contribute small sums to show a desire or need
  - To encourage the crowd funders to put in large sums
- **£2800+VAT to get crowd fund campaign underway**
- **Seek £100,000 to get it started and hope for much more**
- **Good projects get 3000% funded**

16/07/16



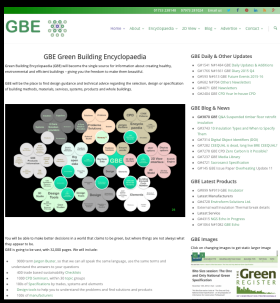


# Crowd Funder's Perks

- Names and donations listed (anonymously if preferred)
- Names in paid-for (chosen) page groups, page or block footers
- Free membership (life time or one year)
  - Free file downloads (during membership)
- New tools developed sooner
  - Use of tools

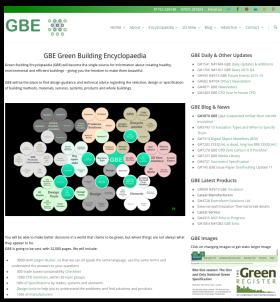






- © Green Building Encyclopaedia
- Brian Murphy BSc Dip Arch (Hons+Dist)
- 10<sup>th</sup> June 2016 – 16<sup>th</sup> July 2016





- **Brian Murphy BSc Dip Arch (Hons+Dist)**
  - Architect by Training
  - Specification Writer by Choice
  - Environmentalist by Actions
- **Greening up my act since 1999**
- **Founded National Green Specification 2001**
- **Launched GreenSpec website 2003**
- **Created: GBE at [www.greenbuildingencyclopaedia.uk](http://www.greenbuildingencyclopaedia.uk) 2015**
- **E [BrianSpecMan@aol.com](mailto:BrianSpecMan@aol.com)**
- **Twitter: <http://twitter.com/brianspecman>**
- **Facebook: <http://www.facebook.com/brianspecman>**
- **LinkedIn:**
- **Created: 13/07/16-14/07/16**
- **Presented to AECB Annual Conference 16/07/16**

