

Specification & Liability

RIBA Part 3 Seminar UWE 2010
DMA CPD 2015
BGY CPD 2016

Specification in a context of liability

- **Context:**
 - General Contracting & D&B
 - RIBA Plan of Work stages
 - Case Law

What is a Specification?

- **A recipe for a building (General Contracting)**
 - All the ingredients
 - ingredients, materials, products, accessories, systems
 - Greener versions where available
 - All the utensils (tools, less so these days)
 - All the mixes (very important, strength, durability)
 - All the processes (workmanship)
 - All the finishing off (workmanship, tolerances)
 - The end result (appearance, finishes)
 - Taste test (site testing)
- **Or Employer's Requirements (D&B or CDP)**
 - Make me a nice cake

Employer' s Requirements

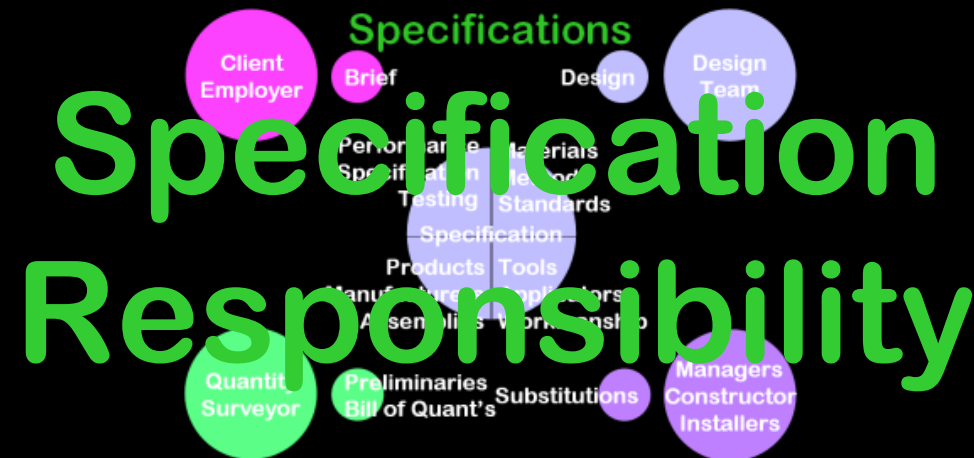
- Anything from a brief for a building
- To a specification
- Usually Performance Specification
 - Make me a nice cake
- Some times prescriptive bits
 - Smooth white icing
 - Or crumble detailing

What else?

- **Preliminaries**
 - Architects responsibility
 - infrequently by Architects
 - (especially with different procurement methods)
 - or standard departures from NBS issued to QS to include
 - Written by the QS? (No Responsibility?)
 - Checked by the Architect?
- **Schedules?**
 - Architects Finishes
 - Ironmongery, Sanitaryware
- **Specialist Contractor's Specifications?**
- **Manufacturer's Specification? Included after editing?**
- **Appendix?**

Who's responsibility?

- **Your's unless you client gives permission to do otherwise**
 - No matter who actually writes it
- **If somebody else does you are responsible for reading, reviewing and getting it corrected by them, or adding to it**
- **Who else might right it?**
 - Other Consultants
 - Manufacturer's own
 - NBS (yes, even they have weaknesses)
 - Specialist constructors
 - QS: why? Cost Control Freaks
 - Developer's preferred products or methods
 - Clients preferred (who they do business with)
 - Industry/Sector National Specifications



Changes with
Procurement methods

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At what stage?

- **As soon as you put 9B pencil to paper**
 - Specification choices are being made
 - Specification is Design, Design is Specification
- **Record your choices as you go**
 - So you do not have to remember later
 - Meet reps write spec (or get them to do it for you)
- **Outline spec to QS can be full of holes**
 - But full of nuggets of information
- **So the cost plan reflects**
 - what you are thinking of and hoping for
- **If you want a green building write a green outline spec to get a green cost plan**
 - Fail at this stage and you will get a violet building

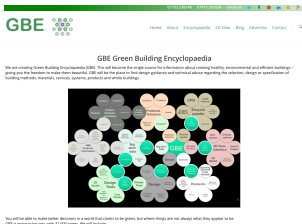


www.capem.eu



Specification: at what stage?

RIBA Plan of Work
Stages 0 to 7 (or 8)



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Cycle Assessment Procedure for Eco-impacts of Materials



Quality & QA

- **Not the difference between e.g. plastic and stone floors**
- **But about consistency**
- **Quality assurance**
 - Procedures to get things right
 - Avoid getting it wrong
 - Never getting it wrong twice
- **QA: Say what you do, do what you say, keep records that you did**
- **If there is one of you its all in your head, assuming you have a good memory**
- **If there are more than one then you need to communicate via paper or electronic records that can be found again**



Quality on Building Sites

NEDO report

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Liability Alerts

- **Liability Alerts:**
 - feedback from PII Insurance provider
- **RIBA Journal**
 - Regular input in legal pages
- **Short statements**
 - Learning from other peoples mistakes
- **WREN run a technical forum where the greyhairs/techies in the practice share knowledge at their meeting**
 - Dominated by a few outspoken



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Quotes

Liability Alerts

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Design responsibility

- **Its yours until it is not**
 - Not transferred without Client's permission
- **Not “fit for purpose” (Contractors have to do that)**
 - you are very privileged, its an easy life
 - Unless you are novated in D&B then ‘fit for purpose’ applies
- **Design management**
 - your responsibility in house
 - Lead Consultant? Your responsibility in project team
- **If Lead Consultant**
 - Co-ordination of Design of team
 - Briefing the design team an essential part if you are to achieve sustainable designs
- **Sustainability**
 - Coordinated integrated design essential for success

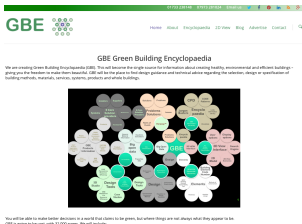


Design Responsibility

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Output responsibility

- **Products**
 - Merchantable Quality & Fit for purpose
- **Design**
 - Due skill and care (try hard!)
- **Building**
 - Fit for Purpose
 - Default by UK law
 - But they try to negotiate it out of contracts
 - Do not be charmed by their smooth talk
 - Don't let your lack of knowledge be defeated



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Fit for purpose

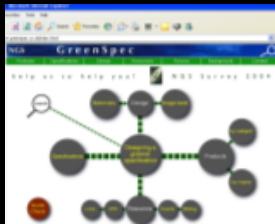
- **Building Regulations**
 - **Approved Documents**
 - **Tertiary documents**
 - by industry and authoritative bodies
 - » E.g. bats and birds in low to zero carbon buildings
 - **Codes or Practice & Standards**
 - **Authoritative documents, BRE, TRADA, etc.**
- **Interpretation**
 - **Fire strategies for whole building**
 - E.g. Airport, luggage full of booze stacked against columns all set alight at the same time could not melt the columns so the design could reflect this fact, no fire protection

Interpretation

- **Approved Inspectors**
 - Interpretation
 - Part of design team
- **NHBC certification**
 - Own rules more onerous than B.Regs in parts
- **Code for Sustainable Homes**
 - (now dispersing to other regulations)
 - Cites other standards: E.g. Life time homes
 - Own rules more onerous than B.Regs in parts
 - EcoHomes (Voluntary, Scotland)

European Context

- **EU Procurement Rules**
- **Government funded works**
- **Case Law**
 - Irish project, Italian tender rejected because of Italian standards
 - EU wide CEN standards solves that
 - School Bus services, needed local provider
- **Revision**
 - Social and Environmental can be requirements
 - Must be relevant
 - Must be in specification
- **Not used as a filter later**



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EU procurement rules

A chink in the armour

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Construction Products Directive

- **Construction Product Regulations**
 - Building Regulations: Regulation 7
 - (11 in Scotland, different in Jersey etc.)
- **Essential Requirements**
 - Interpretive documents
- **CEN standards**
 - Replace National standards

LCA Developments:

- **CPD (Directive) embraces Environmental**
- **TC350 LCA Life Cycle Assessment**
 - Manufacturers on committee dictate everything
- **EU Consumer Council**
 - Manufacturers profit motivated (fiduciary rules)
 - Use cheap hazardous materials
 - Surveys suggest LCA not understood
 - Embrace human issues or EUCC will block its adoption
- **TC351 Hazardous materials in products**
 - Will be embraced by TC350 in the long run

Proper Materials

- **CE Mark (EC Mark renamed)**
 - Essential requirements
 - If a standard exists
 - Product can be CE marked
 - Can be sold in the EU
- **ISO 9000**
 - Manufacturer
 - QA
 - But for what?
 - Accounts department?



**Construction Product Directive
3rd Party Accreditation**

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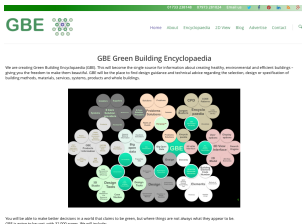


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BCO's own LABC scheme

- Local Authority Building Control Officers
- Assessment of materials, products or systems
- On a Project approval basis or
- On a national approval



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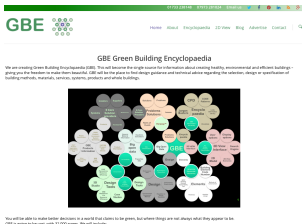


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Other Sector Schemes

- **L20 Fire Doors**
 - BWF Certifire
 - All the parts and processes are competent
 - Any permutation of the parts and process provide a competent fire door
 - Each contribution or contributor adds a label
 - TRADA door scheme
- **L10 Windows**
 - BWF windows scheme
 - TWAS window scheme
- **L30 Staircases**
 - BWF staircase scheme
- **H21 Timber weatherboarding scheme**
 - came to nothing



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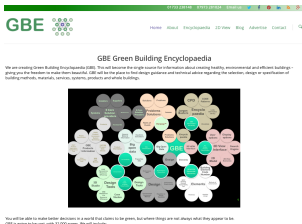


Other Sector Schemes

- **FIRA Furniture Industry Research Association**
 - FIRA Club Green,
 - FIRA Ergonomic Excellence,
 - FIRA Gold Product,
 - FIRA Gold Installation,
 - FIRA Innovation Excellence,
 - FIRA Service Technicians,
 - FIRA Specification system
 - Furniture Ombudsman,

Design life UK (EU+INT)

- Long Life 120 years (Int/EU: 100 years)
- Normal 60 years (Int/EU: 50 years)
- Short life 30 years (Int/EU: 25 years)
- Temporary Life 15 years
 - Do the rules change for short life?
 - Not in my experience
 - But Earthships (semi-buried autonomous buildings) have been built in England and Scotland



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In France

- **French Building Control**
- **They have technical approvals**
 - Conventional occupy this space
- **They have experimental approvals**
 - Self build and green occupy this one
- **Sadly not in the UK**



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2 Approaches

- 1 Just do it
- 2 The status quo
+ Green

12/03/2010

Green is the Colour © 1999-2003 NGS Brian Murphy

1

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Prescriptive or performance Specification?

- Brickwork is usually specified prescriptively
- Describe all the materials products, accessories and the workmanship
- But metalwork supports are often specified by a mixture of performance and prescription
- Curtain walling: performance with some prescription (e.g. syntha pulvin coating)
- Cleaning gantries: all Performance?

Performance Drawings?

- If you have not specified by prescription but by performance then your drawings should be too
- How?
- Show the outer and inner faces:
 - position, profiles, joints and lines, perimeters, abutments, interfaces, penetrations,
 - materials, jointing, colours and textures
- You may need to show the underlying structure if this is known/fixed
- Specify performance of elements from inner to outer face or visa versa or both



Principles of Element Design

Performance Specification

Performance Drawings

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How do you choose between Performance or Prescription?

- You may not be competent to design or specify difficult parts
 - In whole or in part
 - You may elect that you are not (and ask permission of client)
 - Knowing your limitations is good
 - You are required to consider this
- Multi discipline parts often are performance
- If procurement method dictates contractor is Design & Build
 - The programme prevents design resolution at the early stage
 - Its left for the specialist trade to use their expertise to resolve design
 - and client has agreed to permit this
 - This is often out of your hands
 - The PM, QS or the D&B Contractor often decide

If we are not competent

- Why do we think the contractor is?
- Constructors may not be
- Contractors will engage specialists
- Who is checking their competency?
- Kier had a major failure and now employ teams of design managers checking the competency of all involved

Performance Specification in Contract

- We write a performance specification
- The design responsible contractor writes a prescriptive spec in response to it
- We check it for compliance and competency

Approving or reviewing?

- **RIBA recommend we review and comment on inadequacy**
- **Request improvement until no further comments**
- **Do not approve or you claim back responsibility**

Performance Specification

- If your client has given permission for the responsibility for design to be passed on
- You can do it
- NBS has addressed performance in a piecemeal way
- GBE has a stand alone A90 Performance Spec to front any spec
- Republished it on GBE

Specification Substitution

- **Contractor habitually do this**
- **They change the specification**
 - To save money, pocket the difference
- **To use their favourite suppliers or subcontractors**
 - To get the best deal, discounts, etc.
 - To maintain best working relationships they have built over projects
 - To delay payments beyond 30>60>90 days
- **We invite it by adding: 'or equivalent'**
- **But do not manage it (equivalency)**

Surreptitious Substitution

- Contractors habitually do this
- Change the spec without letting you know or asking permission
- If they do, it might not be compliant with the spec
- Who is checking and who is responsible if it fails?
- They should be but its a bit late and hard to determine if its buried in the construction

Ignoring the Specification

- And ignore the drawings
- D&B Contractors do this
- To simplify the job, save time and money
- Because some are incapable to design or understanding of construction beyond following a drawing
- They build it wrong
- You object, they ignore you,
- You redraw and respecify
- That's why specifiers call it B&D



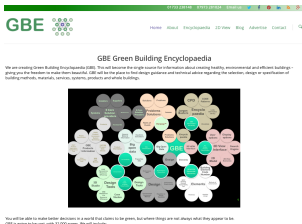
Specification Substitution

Case Law, practices & pitfalls

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Or equivalent

- **EU Procurement Rule apply**
 - in government funded work
 - UK agencies like WRAP say builders know best
- **Must give the contractor an opportunity to be price competitive**
- **NBS Preliminaries include an Equivalency Clause**
- **If the spec says 'or equivalent' then the contractor can offer alternatives that are equivalent**
- **If the spec does not say 'or equivalent'**
 - then assume it does!
- **Private funded work:**
 - no requirement, no need to include the clause



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If you specified it

- **Why do it twice?**
 - You earned your fee once, don't do it twice
- **1956 case law says you do not have to consider them**
- **In reality and 2015 we are not so clever or robust**
- **Make the contractor do the work**
- **They prove equivalency line by line**
- **If it does not meet the requirements:**
 - they may not even ask you to review it
 - If they ask, you reject it
- **Be Proactive about this: post tender meeting, ask the contractor to declare all proposed substitutions**
 - Show them you are in charge
 - Check everything then
 - GBE's A90 has a Substitution/Equivalency Management clause

Or similar or equal or ...

- **Architects habitual error**
 - Its rubbish
 - Used inconsistently, why for some and not others
 - Never never never use it
 - Never on a drawing, never in the notes
 - Don't undermine the specification
 - Never in a specification
- **Slates and concrete tiles do similar things**
 - But you will regard them as unequal
- **They have no legal meaning**
- **'Or equivalent' has EU legal definition**

Or equivalent and approved

- Here be dragons
- NBS clause defines equivalency
- If the clause is included, equivalency is permitted
- Substitution will happen with or without your permission or knowledge
- Surreptitious substitution will happen
- If replacement with inferior products occurs
- And you approve stage payments you approve the substitution
- It fails on your neck



Equivalency

Definitions

Case Law

NBS Clauses

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Cost Cutting v Value Engineering

- We understand cost cutting
- What is Value Engineering (VE)?
- VE is a fancy name for cost cutting
- VE should be about value for money
- Getting equivalency for less money
- Looking at the bigger picture
- Replace 2 items with 1 that does 2 things
- Not removing one item and leaving it deficient



Value Engineering

Posh for 'Cost Cutting'

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Culture of Blame

Barriers & Excuses for Status Quo Prevails

down supply chain & up demand chain

Deadlock broken through education & awareness

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Language

- **Instruction not guidance**
 - Guidance is ambiguous
- **Robust, Specific,**
 - Specify the reason(s) for choosing it
 - Police it
 - Tell your directors not to interfere, unless they know what they are doing
- **Redundancy:**
 - The Contractor shall...do it
 - Do it
 - The Contractors attention is brought to....
- **No options**
 - They will price for the expensive
 - And install the cheapest
 - Pocket the difference

No Redundancy

- It is a 'Specification' not a 'Generalisation'
- So make it Specific
- Only include it if it is relevant to the job
- No 'we might use it so I will keep it in'
- If it is full of irrelevance the contractor does not trust it, it goes in the bin or it is never opened and never looked at
- This undermines the effort in adding the bits that are required

CPI Coordinated Project Information

- **Avoid QRE Quality Related Events**
- **Rationalise information**
- **Avoid potential for conflict**
 - One place gets revised another does not
- **Avoid repetition**
 - Say it once in a library then Link & Embed
 - Symbols, Blocks, Xrefs, hyperlinks, OLE
- **Say it in the Specification**
 - Cross reference to it from:
 - Drawings
 - Bill of Quantities



CPI Coordinated Project Information

CPD topic

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Quality on Building Sites

NEDO report

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Classification

- **CPI**
 - Asked for one language between consultants
 - For simple cross referencing
 - CAWS Common Arrangement of Work Section
 - SMM7 Standard Methods of Measurement
 - Published in 1987
- **PSA & NBS adopted it 1991**
- **Not everybody uses it**
 - Structures and M&E often don't
- **SMM8 has arrived**
 - What next for specification?

Computer coordination

- **3D modelling**
 - Objects, Elemental assemblies
 - E.g. REVIT by Autodesk
- **Elemental LCA BRE Green Guide**
 - TSB £1m + IES VE + BRE Envest = IMPACT
- **Elemental Cost modelling**
- **Elemental Specifications**
 - NBS Create and Uniclass 2012
 - BIM and Uniclass 2015
 - GBE GBS Ambition to do Elemental Specifications too



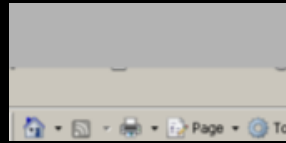
Green Material Olympics

BRE Green Guide to Specification

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Elemental Specification

- **GreenSpec got there first MyGreenSpec then GreenSpecSTUDIO (but no longer)**
- **Readymade assemblies for:**
 - Greener & Violet construction
 - Greener & Violet materials
 - Greener Products
- **No longer in existence**
 - GBE will recreate its parts
 - GBE BEST, GBE BEACON & GBE 3D Studio



MyGreenSpec '09

**Assemble a building by choosing products
for each component of its many elements
The specification assembles itself**

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Other' s specifications

- **Manufacturers (take care and incorporate in spec)**
 - Specs
 - Guidance
 - Literature cut and paste
 - Specifications
 - Terminology
- **Schedules (should all have a document number)**
 - Lintels
 - Stone features
 - Ironmongery
 - Sanitaryware
 - Kitchen equipment
- **Methods statements**
 - Are not specifications

Other' s Specifications

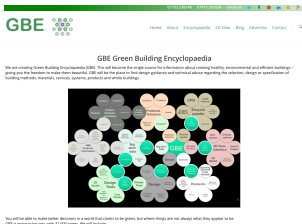
- **Consultants**
 - Often do their own
 - Sometimes only do a schedule
 - Sometimes incompetent specification
 - Use with care, rewrite if needed, take care
 - Seek approval of rewrites
- **Mixed discipline**
 - Signage & VMS
 - Water features
 - Smoke ventilation systems
 - Cleaning gantries



Specialist Consultant's Specification

E.g. cladding consultant

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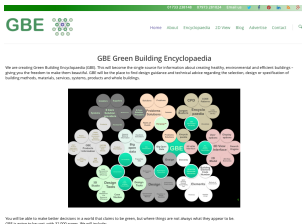


Cycle Assessment Procedure for Eco-impacts of Materials



Choice of systems

- Influences:
 - Manufacturer's specification (often incompetent)
 - NBS written manufacturer's specifications (NBS competent)
 - NBS Plus (NBS competent)
 - GBE GBS (GBE competent)
- See latest Product and Manufacturer Pages



Cycle Assessment Procedure for Eco-impacts of Materials



- **Brian Murphy BSc Dip Arch (Hons+Dist)**
- **Technician & Architect by Training**
- **Specification Writer by Choice**
- **Greening up my act since 1999**
- **Founder of NGS National Green Specification 2001**
- **Enabled funded www.greenspec.co.uk 2003-2013**
- **Editor of www.greenbuildingencyclopaedia.uk 2012-**
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