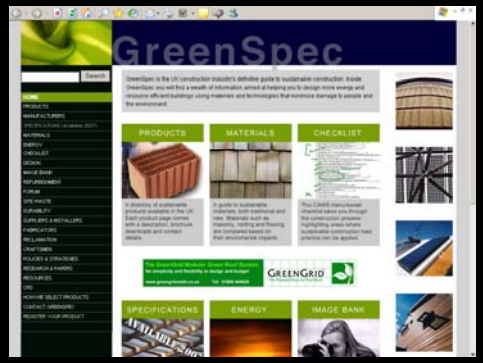

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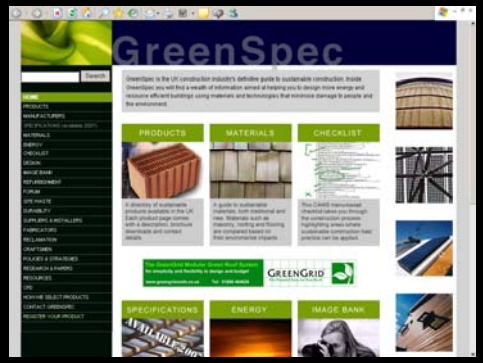
Specification Strategy

Specification Strategy

- A presentation by Brian Murphy
- to Benoy Associates Meeting
  - To TAG/CPD and whitecity project team
- An outline of how we do things
- A plea for more involvement to improve efficiency and improve our service.
- An outline of what that might mean



CONTENTS

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- 1 Purpose of this presentation
- 2 What prompted the presentation
- 3 Example of problems
- 4 Potential solutions.

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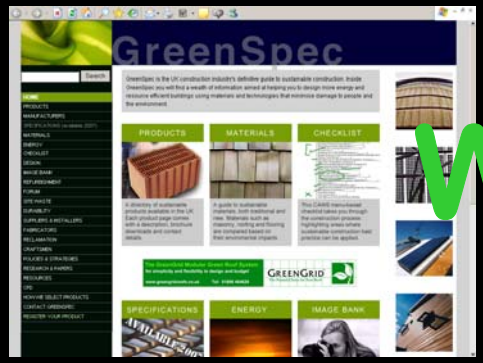
Purpose of this presentation :

- 1 To assist the Project Team to appreciate:
- 2 How and when package production information are produced,
- 3 What spekkies need to know, when and from whom,
- 4 How this can help the team in the package preparation.



What prompted this presentation?

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- I intend to do a good job in our role as a support service to the design team and visa versa.

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What prompted this presentation?

- Despite a few recent pats on the back by the Directors,
- after the Bluewater audits by Duncan Few for BDP on behalf of the Prudential the financier
- I am not satisfied we the spekkies are doing a very good job in our role as a support service to the design team and visa versa.

The content of this presentation caused little reaction:

- With the onset of WhiteCity Howard and I prepared an outline of our working methods and issued it to the Design team,
- It received no reaction until we gave a copy to Mark Bishop
- He was impressed by its content and realised the contribution we could make.

Broadcasting the message

- The outline has been copied to project and package teams of Bluewater, Bullring, St Enoch and other teams, with little reaction.
- I felt it would be better presented directly to team leaders, Associates and to production information staff, directly

A survey of the past projects

- Howard has reviewed the packages he has been involved in
- and identified that some have taken the full 5 months to complete.
- and has attempted to identify why

The reasons vary:

- Nothing exists
- Some information exists
- Changes in policy
- Lack of co-operation

Nothing exists:

- No package established: by D&BC, CM, MC or PM
- No drawings exist: by Designers or Consultants
- No agreement achieved with Client or PM
- No materials have been chosen: by Designers

Some Information exists:

- Inadequately defined package: by D&BC, CM, MC or PM
- Some drawings exist: by Designers or Consultants
- Drawings are inadequate or incomplete: by Designers
- Programme information does not exist pre-BQ issue: by D&BC, CM, MC

Changes in policy:

- Package scope changes, expands, contracts or subdivides: by D&BC, CM, MC or PM
- Brief changes: by Designer, Client or PM
- Design changes: by Designers or PM
- Inadequate cost plan leads to cost adjustments forcing redesign: by QS and Designer
- Changes in programme: by PM

Lack of co-operation

- No appreciation of the time it takes us to produce package documents: by all
- Spekkies are only used as scribes: by Design team
- Slow or no two-way flow of information between Spekkies and Designers
- No involvement of spekkies in the whole process: by Designers, team leaders, D&BC, CM, MC & PM

Working together

- I know we can do better,
- We can work together to help make the whole production information process develop more smoothly,
- if we use each others skills and know-how.

How we can do it better

- I know that we can pursue the information we need,
- with or without the help of the design team,
- if given the permission to do so.
- In some cases we are not even aware of a package being discussed.

We understand this process well

- I have 24 years experience in the business
- 14 running my own consultancy
- 12 years of full time specification writing
- projects of value £50,000 to £600m
- 7 years on one project alone
- I have something to offer
- Howard has a few more years in the business than me

An example of what is going wrong:

- Bluewater Bus Station
- 17/11/97 is identified in the MC's programme as the BQ issue date
- It has been on and off the drawing board for at least 6 months,
- Hareth left after much frustration with it.
- The 17/11/97 arrives and:

Budget and Procurement

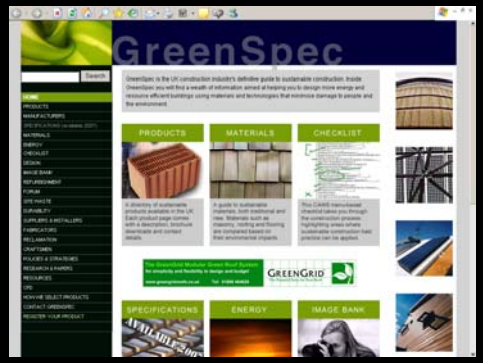
- The D&BC, CM, MC and PM haven't really thought through the procurement method adequately
- They think it will be Design and Build when all it needs is a Performance Spec.
- The QS does not appear to have cost-planned for the basics let alone any architecture.

Brief and Design

- For 4200 people per day this is the ‘gateway’ to Bluewater.
- The PM still hadn’t determined the accommodation requirements or the environmental controls.
- and few other requirements of the Brief

Non-designers start designing

- The QS and PM get their 6B pencils out and start sketching.
- and they want to turn what could be a little gem into a tin-pot shed.



Programme

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- We have worked on the building for 12 months
- and we still don't appear to have a brief
- and all of a sudden we are going to tender

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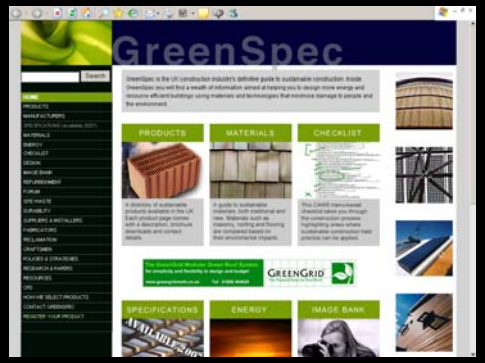
But we can do better than this

- We sit around watching whilst this farce goes on
- what I think we can do is what we are good at
- and that is searching for order amongst the chaos
- we need to take the reigns.



Riding shotgun?

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- We want to get on the wagon
- and help with the reigns
- rather than ride shotgun
- on the run away buggy

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What happens when we are involved - but still too late

- Bluewater Site-wide Signage package:
- We were asked to audit the Signage consultant HLS's specification by the PM,
- We pointed out its weaknesses and how this would have proved to be a poor contract document had it been used for Tender

before you change it you must understand it

- We were asked to write a specification to replace it.
- In order to create the specification
- I gate crashed a meeting on two related packages:
- the Variable Message Signs package
- the Traffic Control System package

They thought it was all over

- the meeting was between two of the three PMs involved, a QS and two consultants.
- both packages were ready to go to Tender,
- in the opinion of the QS, CM & PM.

Design responsibility

- I asked about design responsibility, timing, sequence, CDM, access.
- None had been addressed.

Package interfaces

- I asked about package interfaces between the three packages;
- with static signs, below ground services, hard and soft landscape,
- with the services, IBMS and lightning protection.

lost in the mist of time

- It was clear that little had been thought about let alone resolved.
- It turned out later that they had been discussed 18 months before
- but were forgotten in the mist of time
- but the specification is a means of recording decisions made at every stage of the project, if only.....

3 people 3 understandings

- I asked about foundation design, ground conditions, and co-ordinated multi-service, common trench clashes with foundations.
- It became clear that 3 different PMs and consultants had different views of the whole problem.

Discrepancies in information provided

- I questioned potential problems between two sets of drawings showing similar information, by two consultants both of which were to be issued to Tenderers.
- I raised questions about Bluewater graphics and how they related to DOT standards. The relationship was not clearly understood.

Much was still outstanding

- It became quite clear that very little of the issues I raised had ever been addressed by any of the parties present who are responsible for design, procurement policy and scope.
- Now that they had been raised, it was clear much work had to be done, to resolve the issues before going to Tender.

Auditing other consultant's package specifications

- I, like other consultants was asked to review the Variable Message Sign/Traffic Management specification,
- very few comments came from the other parties

Rewrites cause further delay

- but my review was described by the QS as a hatchet-job.
- This highlighted the need for a complete rewrite of what really was a briefing document not a specification
- and this would inevitably lead to further delay.

3C We need to be involved sooner

- It becomes clearer to me with every package
- that there is a need for more spekkies involvement at the beginning of each package
- to resolve these kinds of issues
- before they become problems.

and nobody is listening

- We still don’t get asked to attend or participate
- despite numerous requests for greater involvement
- over the past 24 months.

4 What can be done to improve things?

- What follows is guidance on what we as Spekkies
- need to know from you as designers or team leaders or team members
- to be able to do our job:
- What we need to know, when and from whom,

What can be done to improve things?

- How and when Specifications are produced,
- How we can help the team in the process
- of package production information preparation
- and visa versa.

4 Current methods and potential solutions

- 4.1 Form of Contract
- 4.2 Contract Administration
- 4.3 Preliminaries
- 4.4 Project subdivision into Packages
- 4.5 Package scope of work
- 4.6 Programme

Current methods and potential solutions

- 4.7 Tender Event Schedule
- 4.8 Pre-publication procedure
- 4.9 Content
- 4.10 Titles and issuing Documents
- 4.11 Conventions
- 4.12 Future considerations

4.1 Form of Contract and procurement method:

- It is important to establish which Form of Contract or procurement method is to be adopted for the whole project.
- e.g. Will it be General Contract, Design & Build, Construction Management, Management Contract or any other hybrid.

Form of Contract and procurement method:

- It is important to know this as early as possible
- since it establishes many of the ground rules we need to establish and use in Specification Manager software (SpecMan)
- and follow throughout the project.
- Error at this time will lead to abortive work.

Form of Contract and procurement method:

- Once this has been established, it will probably suggest the method of sub-contracting.
- e.g.. In General Contracts there are domestic sub-contractors,
- in Construction Management there are Packages or parcels
- which are direct Contracts between the Employer and the Package Contractor.

Identifying the Contractors/sub-contractors

- It is important to establish what they are to be known as,
- this might be Trade Contractors, or other terms,
- e.g.. Works Contractors, Package Contractors or Contractors etc..

4.2 Identifying the Contract Administrator

- Throughout the document reference will be made to the CA, meaning Contract Administrator (RIBA and JCT's preferred term).
- This means the person who issues the drawings, approves the work, approves payment of Moines under the contract and has absolute authority and responsibility, in perpetuity.

Identifying the Contract Administrator

- This may be the Architect, but this will depend on the procurement method,
- e.g.. in Construction Management it will most likely be the Construction Manager (CM)
- others may be Project Manager (PM) Main Contractor (MC), Employers Agent (EA) or Supervising Officer (SO).
- This will be defined in the Preliminaries.

Identifying the Contract Administrator

- In the case of White City, there are both Construction Manager (CM) and Project Manager (PM)
- it must be established which is the role that has the absolute authority and responsibility, in perpetuity.

Identifying the signatory

- This is important to establish whose signature is required in the back page of the formal Tender invitation Spec.
- before they can be issued to other Team members e.g. Consultants,
- and for particular use e.g. to the Quantity Surveyor (QS) for BQ issue, for Tender,
- or for Construction issue to the Trade Contractor.

4.3 Preliminaries

- The Preliminaries (sections A10-A55) contain information about:
- the project, the parties to the contract and consultants on the Project,
- the programme, methods and sequence of work,
- temporary works,
- standards, quality, and many other items.

Creating the Preliminaries

- They are probably the most difficult part of the whole specification preparation process,
- they should be developed progressively and intermittently throughout the project up to Tender stage(s).
- as more information emerges from the briefing refinement.

Preliminaries: General Contracting:

- Preliminaries in General Contracting are Benoy's responsibility but are often prepared by the QS by default,
- they often prepare them since our profession has often failed to perform well in this area.
- Benoy should at least audit the QS's preliminaries, and add to them if they are found wanting.
- On Bluewater they are BCMT's

Responsibility for the Preliminaries: Construction Management:

- In other Procurement methods the Preliminaries are often the responsibility of the CM,
- in which case they may address issues related to the site activities,
- but often fail to address matters of cost control, quality control.

Plugging the gap

- In these cases it is critical that we obtain copies of the CM's Preliminaries
- and compare them with say the NBS's or Benoy's standard preliminaries,
- to check what has been left out
- and provide them in each package specification or get them added to the CM's

Preliminaries in package specifications

- On past projects spekkies have prepared the missing sections,
- particularly on quality control (A30-A37),
- this applies to Bluewater
- and added them to our package specifications.

Package Preliminaries:

- In addition to the A30-A37 we have also prepared A90 and A91
- which go hand in hand with Package specifications
- to simplify the content of numerous work sections in any one package.

Package Preliminaries: Performance or Prescriptive

- A90 is the framework for Performance package tendering
- A91 is used with Prescriptive packages
- to help cut down on repetition from one work section to another.

4.4 Project subdivision into Packages

- Before Specifications can commence the, Project leader (PM) or (CM) must decide how the Works will be divided up.
- and sometimes by default this task falls to the Architect
- This can be by Package, Trade, Building, Room/facility or by Zone.

Bovis methods of subdivision of projects

- It is likely to follow similar lines to those on Bluewater.
- All Bovis project's packages and their numbers are the same, not only on Bluewater, but on all Bovis project.
- We believe their package numbering is based loosely on American Master System which reflects US practice.

Benoy methods of subdivision of specifications

- In contrast our specifications are based on the UK industry accepted “Co-ordinate Project Information” (CPI)
- and Common Arrangement of Works Sections (CAWS).
- Which was developed in the UK based on UK industry sub-contracting activity,
- by the BEC, RICS, RIBA & CIBSE

Benoy's methods accommodate Bovis's methods

- CAWS is adopted by the National Building Specification (NBS) and consequently the Benoy Spec. found in SpecMan software;
- Benoy's methods of specification accommodates the Bovis methods by adding CAWS work sections (chapters of spec) to cover the full range of activities in their subdivision of scope of works

4.5 The beginning of the spec. process:

- Before all packages are started in the office
- spekkies need to be involved with the PM, CM, QS, and other consultants
- to help the Benoy team (including spekkies) to understand the following:

Package Scope of work:

- Scope of the package including:
- Range of trades, materials or construction included.
- Physical boundaries defining the limits between packages,
- Split of responsibility at package interfaces,
- Requirements for Co-ordination between interface contractors.

Split of responsibility at package interfaces:

- Which contractor is doing what
- and in what sequence
- if one has to do work to the others work what the limitations might be
- and controlling the potential for one to use the others work to wriggle out of responsibility and wals away from a guarantee

Sequence of work

- The sequence of the Works
- if any is dictated by the details, as they often are
- or by other restraints, within or without the package.

Design Responsibility

- The split of design responsibilities between Benoy
- and the Contractor (Trade Contractor)
- and if the Consultant Engineer is required to design any part(s) before we go to tender
- and whether this matches up with the Client's understanding and our PSA (Professional Service Agreement) or SFA (Standard Form of Agreement)

Design Responsibility and document content

- The level of detail required in Benoy's drawings can vary,
- depending upon whether the package is to be procured by Performance or Prescriptive (Materials and Workmanship) Specification.

Performance or prescriptive

- This often depends on the nature of the content of the package,
- e.g. Curtain Wall or Stone cladding are most often a Performance specifications,
- whilst Plasterwork or Brickwork are most often prescriptive (materials and workmanship) specifications.

How much do you draw

- By knowing this we can establish the cut-off point beyond which Benoy may not need to go, in terms of drawn detail.
- This will ensure we do not waste time unnecessarily drawing things that are likely to be designed by the Trade Contractor.
- unless your happy for him to trace yours and relable it.

But don’t use it as an excuse not to finish the design

- Too often team members are tempted to let the contractor choose,
- when they don’t have the time or know-how to select the appropriate material or product.
- We are still responsible unless the client agrees to pass on the responsibility to the Trade Contractor.

This applies as much to design and working drawings

- Don’t think that if you can’t get your head round the problems then you can leave it to the Contractor.
- You still need to identify the basic requirements that they need to satisfy.
- and draw the general arrangement to show a practical solution.

Spekkies involvement

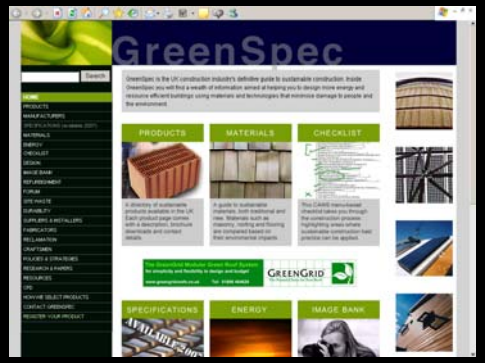
- Our involvement at this stage will help lead to a smoother, more efficient programme
- for all involved in production information.

Specification Content:

- A work section list needs to be drawn up at this stage to identify what and how much work is to be done.
- It is possible that there will be special elements that are not already covered within the existing Benoy specification library of clauses in SpecMan.
- Eg. H90 Tension Fabric Structures, although we do have one now it is very lean on content but it is on our list of things to do

New elements not specified before

- In these cases research time needs to be programmed in
- to gather information, assimilate it and create the text of the work section from scratch in the Benoy Spec.
- in order to create the package specification.



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- To do the profession, the practice, the spekkies, the designers, the project and the product justice this needs at least a month or research time.
- Not “can I have it tomorrow?”

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4.6 Programmes

- When the construction programme is prepared by the CM it rarely if ever recognises adequate production time for drawings or specifications.
- and programmes are heavily weighted to post BQ activities

Weighted programmes

- It is often the case that the procurement programme is based purely on the needs of the construction phase for different Packages,
- which suits the Construction Manager, but takes little account of the needs of the designer.

Designers need more time

- It is often the case that the designers have to complete much of the design process
- in order to define column layouts and the subtle variations around the building
- in order to determine the contents of the piling /ground works package
- which is one of the earliest packages in the whole project master programme.

4.7 Tender Event Schedule

- The Tender Event Schedule (TES) is prepared by the CM
- it lists the packages and gives all of the important dates
- that we must work towards
- starting with the BQ issue to the QS.
- What the TES does not cover is the dates of stages leading up to the BQ issue.

Events leading up to BQ Issue

- These might include:
- Client sign off dates for designs,
- the Brief refinement completion dates,
- the outlining of the scope for the packages,
- and any other progress checks along the way.

Programming events leading up to BQ Issue

- We believe this should be the responsibility of the PM.
- We believe this should be conveyed to all parties by the CM,
- since without it they won’t know when to release the package content list or package outlines,
- nor when to preview any of the proposed documents.

Benoy should programme the PM and CM

- In the absence of those dates in a programme
- Benoy should consider preparing this information itself for its own use
- and publishing it to other parties indicating the dates they must meet
- in order for us to meet their programme

Specification duration

- The time taken to produce a specification from initial contact to final issue varies
- due to the nature of the contents, e.g..
- DPM could take 2 months;
- Toilets or Doors could take 4 months;
- Curtain Walling could take 6 Months.
- Elements without ready-made specifications will take longer.

Programming specifications

- With these time frames it is possible to establish
- when each specification should start
- but more importantly when discussions with other parties should commence.

Thin specifications

- Despite what has been discussed so far
- we can still turn round a spec in a matter of days
- if we choose to and if we have somebody available
- but don’t expect it to resolve any of the issues that you have chosen not to brief us on or don’t know yourself.

Thin specifications

- They will have no substance or real meaning
- in terms of the real nature of the package
- and I recommend you do not consider this a viable proposition.

4.8 Pre-Publication Procedure.

- If there are to be packages then there must be a person within Benoy who is responsible for that package.
- We will need at least an initial briefing with this person
- but better still with all parties to the package as described above.

First draft from spekkies

- If time allows, a first draft for the package will be prepared by printing out a unedited ‘mark-up expendable’ text from SpecMan,
- and a first trawl through the document would be carried out by spekkies, to delete irrelevant clauses.

Teams add to the process

- The spekkies would expect the team members to add their notes to this first draft
- to cover the specific details of the materials to be used, in what methods and where.

Designers know their building intimately

- This is often best done by the author of the drawings
- since they know that part of the building intimately, all of the research carried out and meetings held with manufacturers.
- Spekkies will give any guidance or training in this process where needed.

Spekkies involved in meetings

- Our attendance at meetings with manufacturers or other consultants
- can often be helpful to both spekkies and the team member.
- This is especially so if the team member lacks experience,
- since spekkies will ask the questions that they need to know answers to.
- but will also ask questions on behalf of the designers whether they would have asked themselves or not.

Spekkies need to know more than designers

- The team member will often learn a great deal
- about aspects of the work that they don’t normally address,
- but without which spekkies cannot complete their task.

Second draft

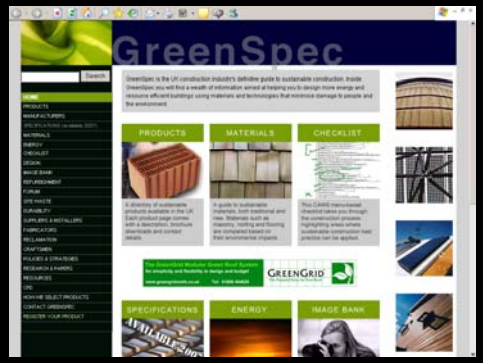
- Provided there is sufficient information on the drawings and the PM or CM has defined the scope of the package in a comprehensible form,
- the next draft, will be created in SpecMan and/or Word by spekkies from the information, added by the team members.

Document naming

- This will be referenced with the .DOC suffix in the computer
- It must be checked by the package Architect,
- updated or amended by spekkies for issue to other members of the Team with the A01 suffix.

Further modifications by all

- This is usually followed by a series of modifications from all and sundry and so the Specification is refined.
- With each issue the suffix is updated during the development stage, e.g.. A02, B01 etc.



4.9 The Content

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- Two different approaches to specification are discussed here:
- Notes on Drawings or
- Cross reference from drawings to specification.

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First method: Small Projects:

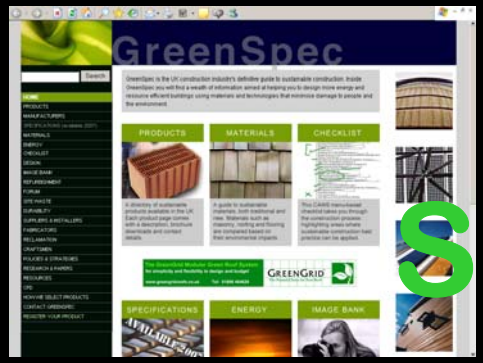
- The first is suitable for small projects where the number of documents is small.
- In order to do this all drawings must show material, grades, manufacturer's names and product references, location, joints / fixings, details, colours, gloss levels or textures, patterns, finishes and sizes. etc. etc.

Second method: Large Projects:

- The second is generally adopted on bigger projects where CPI principles published in 1987
- recommended in the recent Latham report, are adopted.
- Here the notes are not on the drawing,
- but are in the specification thus avoiding the risk of contradiction with the specification.

Cross references from drawings

- Here the drawings cross reference to the specification.
- In this situation the notes otherwise added to drawings have to be collected together and passed to the spekkies to process.
- This can be done by marking up a draft spec. during the production of drawings.



Specification format

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- We make use of the word-processor program MS Word,
- The front cover, content page and revision sheet of this document (the handout) indicates the form the specification will take.
- We use a ready-made Specification template.

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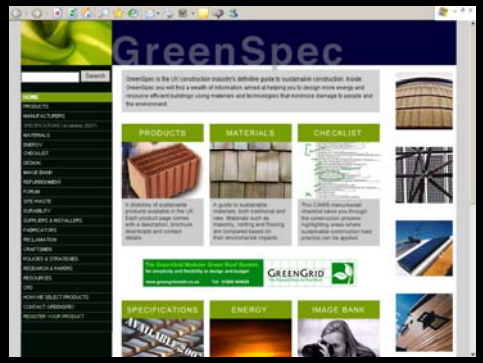

Templates

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- The template contains many ‘automatic field inserts’.
- these help maintain consistency of approach, content and appearance
- and to speed up production.

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Logotypes

- The current Project Logotype is to be inserted at the top, and client/developer and sometimes the Benoy Logotype at the bottom.
- It should be borne in mind that the logotype provided should takes up a minimum of computer memory to avoid clogging up server space on the network.

4.10 Titles and file names

- The hard copy document title and related soft copy file name follows the Benoy/Bluewater convention
- as will the issue status and amendment suffix.

Informing Document Management (Issue)

- We have established a simple system for informing the Document Management team Danny and Ciara,
- to issue a specification, what its name and title is
- who needs to be informed either by fax or EMail,
- that the document has been issued.

Who receives the specification

- To speed up issuing of documents we need to know who the relevant members of the teams are,
- e.g.. PM, CM, PS, consultants and named individuals for each of those parties, for each building, zone or package,
- and any others expecting to receive information.
- e.g.. Building Inspector, Site Architect

How do they get them

- We also need to know how documents are to be issued,
- either by hard copy and/or electronically for each of those individuals,
- and how do they expect to receive them
- via computers, EMail, fax, post, courier, by hand.

4.11 Conventions.

Naming project or package specifications in SpecMan

- The directory and file naming of the Specification in SpecMan follows methods detailed in the Procedures manual for SpecMan
- these are dictated by the way the software works.
- but identifies the project, zone and package

Naming project or package specifications in Word

- In Word files we adopt a different system but one which you are familiar.
- The package title will take a lead from the predominant trade or element of the package and follow CPI's CAWS classification.
- unlike the drawings which take their lead from CI/SfB.

Naming project or package specifications in Word

- Specifications use one letter and two numbers inside brackets
- to identify the predominant work section or trade in the package
- and two numbers to identify the number of the specification 00 - 99
- if more than one covers the same types of work
- e.g.. (L31) 01

Naming project or package drawings in AutoCAD

- whilst drawings use two characters inside brackets
- to identify the element
- and three numbers to identify the drawing 000 - 999
- e.g.. (22) 001

CAWS Common Arrangement of Work Sections

- A sample list of possible CAWS work section references and titles is included in this document (the handout).

Issuing the specification

- The specification group (spekkies) provide the drafts for mark-up by the team,
- and prepare/issue the document on behalf of the team/practice.

Signing off hard copy

- The spekkie(s) responsible for preparing it will initial the ‘author’ box in the revisions sheet at the back.
- The team member should check to confirm the content is correct
- and initial the ‘checked-by’ box on the revision sheet at the back.

Signing off Tender issues in hard copy

- Before releasing the Tender issue,
- the responsible authorising person within the practice
- has to sign in the appropriate box in the revision sheet at the back.
- take it to their Project Manager to obtain their signature
- allow them to copy the document and bring back the original.

Electronic sign off:

- Bovis have in the Hummingbird system a form of electronic sign-off
- which adds notes to the cover of the specification,
- and is carried out by the PM with the Hummingbird system Manager.

Schedules

- Schedules are not incorporated in specifications
- e.g.. Doors, Ironmongery or Sanitaryware,
- although they are now being prepared and issued in separate but similar documents in Word or Excel.

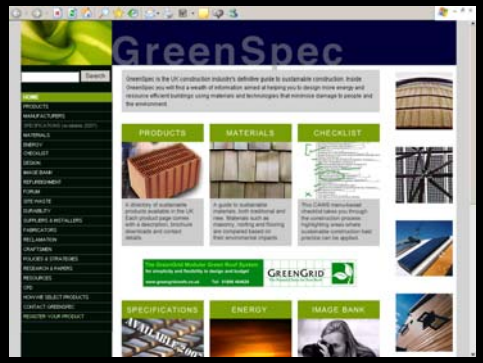
4.12 Future considerations

Drawing Annotation:

- Specification clauses describe items on drawings
- and can often include a cross-reference to a drawing,
- which is both the visual description
- and location of that item in the Works
- and visa versa.

CPI

- We would like to consider the greater use of CPI principles,
- by using AutoDesk's Annotation Manager working through AutoCAD 13, AEC 5 and SpecMan 3.
- and would allow the simplification of drawing annotation
- to a dynamic computer based method.



Feedback

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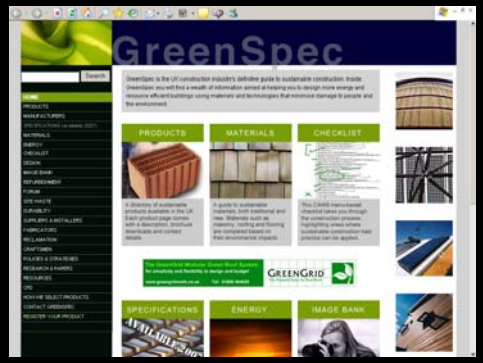
- These files are created by generalists with a big dollop of green flavour
- These files are updated from time to time
- We are not experts so from time to time these file may get out of date or may be wrong.
- If you feel that we have got it wrong please let us know so we can put it right



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