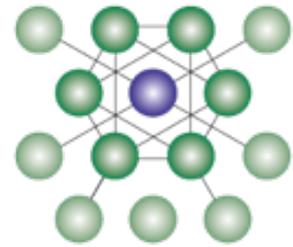


Edith Colomba Interview

GBE



Green Building Encyclopaedia

Introduction

Brian Murphy ONC HNC BSc Dip Arch (Dist+Hons)

Is an architectural technician and architect by training, specification writer by choice and environmentalist by action.

Over 40 years in the construction industry, 33 years specification consultant, 18 years in environmental learning and dissemination.

Specified over £2415m under most procurement methods and their permutations

Trained hundreds in the use of NBS Specification binder and disk services and software

Founded National Green Specification in 2001 which created www.greenspec.co.uk but since 2012 focusing on Green Building Encyclopaedia at <http://greenbuildingencyclopaedia.uk>

Was one of the core team that developed the East of England Sustainable Construction Strategy
Written over 1000 CPD/Lectures on environmental, Specification or Professional Practice subjects and delivered most of them to mixed audiences, BSc, Post Graduate, MSc, Practice CPD, Professional Regional Membership groups, AECB, TGR, CAT, RIBA, RTPI, RICS, CIOB, NCW.
UK and EU funded projects: SiteWISE campaign, DTI Increasing the value of Construction waste streams, DTI funded Waste Reduction and Recycled Products, Interreg Funded Cycle Assessment Procedure for EcolImpacts of Materials (CAPEM.eu and CAPEMCompass.eu)
In 9th year of lecturing at London South Bank University have spoken at Cambridge IDBE, Cardiff, Sheffield Hallam, London Metropolitan, Norwich City College, Reading University, College of Estate Management, Kingston.

Q1: How did you get into the field of sustainable construction?

- I always had an interest in the environment since Geography lessons in school,
- I decided then that the world had enough people and I would not have a child of my own to add another burden.
- Construction was very disengaged as were most Architects,
- Energy World at Milton Keynes in the 1980s was the first time I saw a glimmer of hope
- Association of Environment Conscious Building AECB launched but it appeared to be for Builders, I did not know it changed its name shortly to ...Building to embrace designers too
- The New British Library was happening when Friends of the Earth published The Good Wood Guide
- I questioned the use of Afrosia an endangered species hardwood being used in the Exhibition Hall furniture, but stained black with 4 coats of acid catalyst lacquer
- Its colours and figuring were buried and it felt like plastic, so why wasn't it?
- Who was I a lowly specification writer to question architects trained in Cambridge?
- So I set out to do something about re-educating my profession.

- Construction Resources opened its doors, I took a group of CIIG librarians to visit them
- I met Lucy Pedler a product specialist and I found a way into Environmental Specification and I have not looked back since.

Q2: Why is sustainable refurbishment important?

- Many of 27 million properties leak heat like sieves, let alone their many other problems
- Some because they were made to, before comfort conditions were considered essential,
- Others were made poorly and woefully inadequately insulated or un-insulated.
- Big developers continue to lobby Government, to avoid having to spend any more of their high profit margins on making better buildings and meeting global carbon targets
- Despite local authorities and developers trying hard to clear fell them all and replace them with profit making new apartments to sell to foreign and 'dodgy' investors, there are too many of them to make a difference, and the displaced tenants still need somewhere to live.
- 80% of buildings in 2050 already exist today so we need to fix them more than we need to build new replacements.
- We saw the Decent Homes Programme improve 1 million properties over a 10 year period from not decent to decent in an unsustainable way,
 - Ripping perfectly serviceable buildings apart and sending millions of tonnes of perfectly good materials to landfill;
 - Replacing heating systems, windows and doors, kitchens, bathrooms,
 - Without ever having a 'Whole House Plan' so when they eventually get insulated properly under GreenDeal and Energy Company Obligation (ECO)'s successor all of that work will be undone and redone; more tonnes to landfill.
- Old (pre-1919) solid wall properties are officially classified as 'Hard to treat' whilst anything since then is unofficially and realistically described by me as 'Easy to insulate inadequately' and 'Hard to treat properly'

Q3: Do you think that the UK and European industry are up to speed with the best practice in the field of sustainable refurbishment? What are the areas that can be improved?

- Its variable, there are pockets of excellence everywhere and then there is the rest of industry doing business as usual and large swathes are focusing on understanding new build Building Information Modeling (BIM) to be worried about Environmental let alone Refurbishment
- SPAB know how to do conservation quality refurbishment but are reluctant to insulate
- There are strong correlations between conservation and environmental (material choices) but also diametric opposition (no interventions v adaptation for climate change)
- UK's BRE have their refurbishment Terrace where the regurgitates and shows what is already known by is sponsoring manufacturers, status quo prevails.
- Germany has developed Passivhaus enerPHit for energy focused refurbishment
- UK has AECB's Carbon Light Retrofit (CLR) interprets enerPHit for UK climate and mains energy mix; AECB has the capacity to engage with environmental issues too.
- CLR training is available and the first cohort are getting up to speed
- German Universities have developed WUFI and Delphi Hydro thermal moisture movement analysis software that allows wealthy designers to analyse historic fabric and avoid big errors when they try to over-insulate them
- Germany has developed insulation materials specifically for historic building fabric analyzing the performance of 9 recipes before choosing the optimum, material with conductivity resistance, moisture permeability, moisture transport and mould inhibiting properties
- Sustainable Traditional Building Alliance (STBA) reacted to GreenDeal and ECO and told Department of Energy and Climate Change (DECC) to hand-off pre-1919 property or let incompetent designers, products and installers ruining them.

Dissemination of best practice is the area that needs to be addressed

- There are many EU funded Interreg projects addressing aspects of Eco Refurbishment
- National Trust UK INSURE Interreg project
- TRANSECO could have pushed Eco to grow into mainstream
- Future Cities addresses mitigation and adaptation in the context of Urban Heat Island affect, flooding, biodiversity,
- NW England region produced guidance on Mitigation and Adaptation for future climates
- Zero Carbon Hub has had its moment and its publications remain available.

Q4: What are the risks of refurbishment that is not done with proper knowledge and techniques? Aren't there quality systems in place, assurance from the government regulations that works are done properly?

- First of all its is difficult to do work on pre 1919 historic fabric
 - STBA's Green Knowledge Wheel stresses the interconnectivity of interventions and complexity of decision making
 - Centre of Refurbishment Excellence (CoRE) developed Green Deal Coordinator training because the job needs problem solving decision making and architectural, technician, surveyor skills to alter, extend, refurbish at the same time as extreme energy/carbon reduction interventions
 - Retrofit Academy picks up where CoRE left off.
 - The Green Register of Construction Professionals (TGR) have been running seminars addressing the technical issues of refurbishment
- DECC working with stakeholders developed Publically Available Standard PAS 2030 to set the ground rules
 - But Edith you know from your own experience:
 - How badly contracts are set up to refurbish large swathes of urban residential areas.
 - How contractors are not geared up for competency and never have time to care about getting it right,
 - Focusing on getting the job done as quickly and cheaply as possible without any apparent awareness of the consequences of their actions
 - I have lectured on the consequence of GreenDeal and ECO and the programme that follow to tidy up the mess or condemn the work and make way to clear fell yet more essential social housing to make way for more dodgy investors.
- Zero Carbon Hub were funded by Government to help with setting Zero Carbon definitions to build policy around.
 - They investigated summer and winter overheating, published extensively but never really understood the primary cause of overheating,
 - Discovered and coined 'The Performance Gap', the difference between designed and actual building thermal performance.
 - Engaged the house building sector to bring their attention to their need to engage with Carbon targets and start making competent buildings, instead of building to 5 year old building regulation's energy standards.
 - Only this week one major house builder announced 'less building made better'
 - Produced numerous hot cakes including Builder's Book and Designer's Manual on addressing airtightness and thermal breaks in conventional construction.
 - Their best offering was to suggest clients require their designers to address overheating in their designs, without any guidance on essential solutions to the main cause of overheating
- BRE carried out analysis of overheating buildings, misapplied Infrared Thermography (IRT) and misinterpreted the results which were reproduced in an National House Building Council (NHBC) publication aimed at solving the problem
- Permitted materials products and installers under GreenDeal and ECO schemes include a

cheap, readily available, business as usual, thermal conductivity insulation that exacerbates summer overheating, caused by solar radiation heat, so those schemes and their successors will cause overheating in some of 25 million more properties

Q5: You are all about helping architects make the greenest choices. For this reason you collected your enormous knowledge in the field and started your Green Building Encyclopaedia website. Could you explain what this is about?

(please make 3-4 significant screenshot images from the website)

- First of all can I clarify my definition of Sustainable because there is too much fog around the definition.
- Clever people aspire to one clever phrase that covers it and others don't have time to learn it, but just want the jargon to bluff their way through on business as usual and 10-40 year old 'College Knowledge'.
- If one sentence was all that was needed then we would not need GBE Encyclopaedia
- I anticipate 30,000 pages (based on material I already have that needs recreating as web pages) and I have only written 2050 so far, by the time 30,000 are written there will be another 10,000 to add on.
- Whilst the industry is driven by Profits before People before Planet, egged on by Fiduciary Rules, an obligation to make a profit for shareholders...
- GBE is interested in HERACEY® Healthy, Environmental, Resourceful, Appropriate, Competent, Effective, Yardstick, which is about making high performance buildings addressing many issues including green and sometimes violet materials that make other green materials perform significantly better.
- If you drill down below HERACEY there is an ever growing list of over 400 criteria we judge materials by
- Not all of them apply to all materials or applications but these criteria help us to sieve out the wrong materials and shortlist the right materials for an application.
- GBE is about interrogating Issues, distilling them to their essence: problems have causes, they need to be understood and competent solutions need to be found for them
- Manufacturers focus on solving problems, they create products and accessories that combine to make systems, they develop their supply chains and installers get trained.
- GBE tries to link up all the parts:
 - Issue Papers, Defects, Questions and Answers, Jargon Busters, Materials, Properties, Checklists, Products, Systems;
 - Companies: Applicators, Suppliers, Servers, Consultants and make them easy to find without searching.
 - But there are hundreds of materials and thousand of products GBE do not have most of them yet.

Q6: You have been working quite a lot with green manufacturers and building suppliers What is your role in helping them and how, as architects or clients, can we find the right companies for the job?

- GBE helps manufacturers and suppliers to extract all relevant information about their products and systems and disseminate them to designers and specifiers.
- GBE Product Data Collection currently gathers say 600 out of 1200 items of information about products, to create 35 tables including filling: Building Information Modeling (BIM) and COBie Product Data Templates, Specification, Method Statement, etc.
- These can be added to website to enable them to be found by Internet robots and spiders
- They also need to be put into database search tools to find the right ones
- But this all takes time and we need more companies willing to pay to process this information to become part of an intelligent sieving system
- CAPEM Compass Building Product Comparison System was created out of EUs drive for

Life Cycle Analysis to support any green claims by manufacturers and at the opposite end of the spectrum the architects need to choose the right materials with the right properties to do the particular job in the particular application in the right place in a building's elements.

- GBE also uses the information to create Robust Specification that help defend a product against value engineering, cost cutting and substitution. They contain all the reasons you chose the product, to encourage you to defend the choice, to determine equivalency and repel 'or similar' and worse.

Q7: let's talk about young architects. Do you think current university courses and postgraduate studies in the UK offer the student the base of good practice in the field of sustainable refurbishment?

What should students and young professionals do in order to learn all the skills they need?

- To be frank I am not sure that it does.
- I regard Architectural Education as a potentially great provider of problem solving skills that can be applied in any walk of life, I hope it instills unflappable, logical, deductive, ordered, sequential processing skills as well a flair with a 9B pencil or graphics software.
- Architectural Education tends to focus on unbuildable schemes, uniqueness; philosophical issues, design, graphics, are words that come to mind immediately looking at the end of year exhibitions
- At LSBU one studio tutor does encourage student to engage with existing buildings with different building functions and to rework, extend them, re-clad them and solve a new set of problems.
- I give out a post card and leaflet from TGR and AECB to students and encourage them to join and get the magazine and attend their CPD when the time is right.

Q8: What are the areas of sustainable refurbishment you focus on while teaching at South Bank University? (Fabric, thermal mass, overheating, etc.)

- Yes all of those and much more
- Whilst I focus on new build to match up with their studio work I am forever veering off to engage with refurbishment or retrofit as it is commonly know today.
- Much of the work that the industry needs to focus on for the next few decades is Adaptation of existing building fabric for Climate Change.
- I get 12 lectures in the Energy and Resource Efficiency in Design Series
- And I get 11 homework opportunities in response to my supporting lecture series
- So I talk about Global Imperative and try to instill a sense that they need to come out of university insisting on change and that they need to be capable of being the agents that deliver it. Sadly I am lecturing to Post Graduates who needed this much sooner in their courses.
- Task 1 CV to get to know them and link names to faces
- Task 2 Briefing Process: client's wants and needs, schedule of accommodation (activities) and architect's aspirations
- Task 3 Site/ Existing Building analysis: what does the site offer, its challenges and what and how can the Task 2 proposed building exploit it/them.
- Task 4 Building Element Performance Requirements: Task 3 External site conditions and Task 2 internal activity space condition requirements and how the building elements need to respond to these
- Task 5 Building Elemental Assemblies and material choices: to meet Task 4 requirements
- Task 6 U values of elements, k values of materials, thicknesses, assembly R & U values
- Task 7 Embodied Energy/Carbon Sequestered Carbon of materials > elements > whole building calculations
- Task 8 Servicing strategy responding to Task 3 and Task 4
- Task 9 U values, Building areas and volumes, Whole Building energy demand calculation,

fuel choices, in-use carbon burden of building, elemental % comparisons to highlight the importance of expensive high performance windows, doors and rooflights.

- Task 10 Designing out waste and whole building waste calculations
- Task 11 Jargon Busting on one term or phrase related to their building project

Q9: How do you see the perfect sustainable refurbishment process? Take the example of a typical London property, a Victorian terraced house. Imagine you are advising the owner on what to do step by step to ensure a quality job. Which professionals should they involve? At what stages in the process?

- Invest well to remove as many long terms running costs as possible
- Do not compromise the building's integrity for the sake of a bathroom or kitchen
- Check if its in a conservation area or is a listed building
 - If Yes: Engage a SPAB qualified Architect
 - If not: Engage one of the following:
 - CoRE or Retrofit Academy trained GreenDeal Coordinator
 - AECB CLR trained Architect/Technician/Surveyor
 - EnerPHit trained Architect/Technician/Surveyor
 - But they also need to have green building know-how
- Develop a good Client brief by working with the designer to be as thorough as possible
 - Do not compromise with 'nearly enerPHit' or 'enerPHit equivalent'
 - The result will be significantly compromised in the details leading to unsatisfactory performance all round
- Insist the services engineers (if you use one) know how to deliver 'enerPHit' performance when you choose them
- Don't let the designers off the hook as they start to compromise
- Don't be seduced by innovative products with theoretical performance in marketing, choose proper materials that have a track record in real performance (avoid greenwash)
- Don't rush into building before finishing the design if necessary model the building so there are no surprises that make you want to change it during construction
- Ensure all details are designed and specified thoroughly before going to tender
- Ensure you choose a Passivhaus, EnerPHit or CLR and green experience builder and subcontractors or tenderers to get a competent price for a 'proper-job'
- If there are difficult details make sure everybody knows and they can give their correct price for doing the correct job
- If the tender looks too cheep question it and make sure they have priced all the difficult pieces and they are not trying to save money by compromising.
- Do not put them under time pressures that mean they cannot care about finishing the job properly.
- Test during construction at appropriate stages to avoid expense later
- Prove the building is working as designed, but get it sorted, if not.

Q10: please write your own question!

I am brain dead

Conclusions: again GBE website, newsletter, contact, thank you etc.

- GBE is at the start of a long journey, it keeps getting added to as we do more and more gets paid for.
- [Http://greenbuildingencyclopaedia.uk](http://greenbuildingencyclopaedia.uk)
- GBE has 2 newsletters (manufacturer or designers) that are worth signing up for.
- [Sign up](#) and choose your role and we will send the right one to you
- E BrianSpecMan@aol.com
- Twitter: [@BrianSpecMan](http://twitter.com/brianspecman)
- Twitter: [@GBEGreenBuild](http://twitter.com/GBEGreenBuild)

- Scribd: [BrianSpecMan](#)
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- CAP'EM [Compass](#)

Thank you to Edith for arranging this interview and coming up with some challenging questions
Thanks to GreenSpec's compromises for spurring me to do GreenBuildingEncyclopaedia to fix them.

Edith Colomba

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