# LECTURES ON INNOVATION IN BUILDING TECHNOLOGY: LECTURE ARTICLES FOR STUDENTS OF ARCHITECTURE BY MICK EEKHOUT

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The process of architecture is fundamentally concerned with the art of space, providing societies with technical, environmental and aesthetic solutions for various types of shelter for various human activities.

Traditionally, when it comes to realising a concept, the constraints of engineering safety, function, economy, and environmental responsibility require the input of individuals trained in various disciplines.

There is a wonderful confusion created among clients - and others - when a pan-disciplinary talent is encompassed within the expertise of an individual and in the execution of the work. Mick Eekhout is one such talent - a professional at ease within the fields of architecture, engineering, and industrial design.

However, when this talent is contained within a pan-disciplinary international company – the concept of the 'one stop shop' – then it is readily accepted.

Mick Eekhout came from architecture studies and practice, then moved on to industrial design and then focused on 3D space-frame structures, establishing his company Octacube Space Structures in 1982. He took the company internationally in 1997 and since then has designed, engineered and built structures in collaboration with some of the most prominent architects in the world.

In an era that has seen the power of the image and hyperbole swamp technical knowledge some individuals, like Mick, have continued to see and understand that beneath the waves the currency of research and know-how informs creativity, and have also understood the real pleasure that a sound technical foundation brings to the creation and development of the designer's ideas.

His research and projects exemplify a step-by-step improvement in product and performance, and he shares his discoveries generously while nurturing the next generation of designers.

Of these, those who have navigated 'flick of the cursor' egos because of their technical skills and imagination, and those also able to bring environmental and social awareness to what is realized, manifest a freshness of ideas and concept which is out

of the ordinary.

When we mean to build,
We first survey the plot, then draw the model;
And when we see the figure of the house,
Then must we rate the cost of the erection;
Which if we find outweighs ability,
What do we then but draw anew the model
In fewer offices, or at last desist
To build at all? Much more, in this great work,
Which is almost to pluck a kingdom down
And set another up, should we survey
The plot of situation and the model,
Consent upon a sure foundation,
Question surveyors, know our own estate,
How able such a work to undergo,
To weigh against his opposite; or else
We fortify in paper and in figures,
Using the names of men instead of men:
Like one that draws the model of a house
Beyond his power to build it; who, half through,
Gives o'er and leaves his part-created cost
A naked subject to the weeping clouds
And waste for churlish winter's tyranny.

Shakespeare Henry II Pt 2, Lord Bardolph

Mick's career and work have evolved through research and development. These should be viewed as an investment - finance and energy invested to create knowledge. The innovation that results – based on this knowledge – delivers revenue.

Innovation is a good thing but not as an end in itself or without context – that is, in isolation. Innovation can create something completely new and, often, is seen as techno-centric. However, innovation can also be manifest in methods of teaching, leading, organising and delivering an architectural concept. In this context, for

innovation to have a valuable and effective role in society, there have to be certain foundations for its success: a culture of market creation needs to exist that allows, supports and then exploits innovation.

At the moment, Europe does not create sufficient markets of this kind. Public procurement needs to recognise and support innovation. Public procurement is circa 16% of EU GDP and, currently, is driven by monetary rather than innovative concerns. Funds are spent on the "cheapest" solution rather than purchasing innovative products and processes that have the potential for long-term sustainability.

Innovation in a societal context requires flexibility of the mind, being less focused on the physical. Our information-based society has yet to develop a structure that reduces the need for physical mobility, yet clearly this is possible and desirable. Perhaps energy limitations , in tandem with information exchange technologies, will redefine the needs for such mobility.

Financial risk is an inevitable aspect of research and development; more entrepreneurs – business angels and venture capitalists - are vital if the results of research and development are to be realized. These people, with financial muscle, have learned to celebrate 'failures' as part of the learning process on the road to the creation of ' winners'. At the moment, the EU and our society in general are functioning on a "No Risk' or 'Zero Risk" ethos.

There is clearly a need for creative, innovative and pro-active legislation from government which recognises that through innovation we fabricate and frame our society's future.

Mick Eekhout's contribution to the advancement of lightweight structures, and the education of architects and engineers through his work over the past decades at TU Delft and Nottingham University, has been considerable. This collection of his lectures is a rich vein of information and thought and deserves to be read widely.

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