CONSTRUCTION ECONOMICS

THE HISTORY OF BUILDING ECONOMICS

LECTURE 02

CONSTRUCTION ECONOMICS

PRESENTATION OUTLINE

- Realising why the subject was developed
- Identifying the main sources of textual materials
- Understand the trends that are evident in the subject development
- Identifying the current issues
- Understanding the factors that influence the subject discipline

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Introduction

- Building economics is a subject barely 50 years old (Ashworth, 1999)
- Has been largely developed since the middle of the 20th century with the building boom that followed the ending of WWII
- Its origin can be traced to Quantity Surveying practice.

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Introduction (cont'd)

- The impetus for the subject's development are probably twofold:
  - There was a huge spending on construction works in 1950s and 1960s.
    - Houses, schools , hospitals, roads, etc were required to meet expanding population.
    - Something additional needed to be done to achieve value for money, instead of just measure and value the works.

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Introduction (cont'd)

- The impetus for the subject's development are probably twofold (cont'd):
  - Expansion of post compulsory education and the introduction of undergraduate courses for quantity surveyors, needed full time lecturers, some of whom carried out research in the subject matter.

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Introduction (cont'd)

- Then the Ministry of Public Building and Works and RICS began to develop systems of financial control and evaluation for new buildings.
- The systems required a greater understanding of building cost relationships and patterns.

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Building Economics

- Economics in general is about:
  - The choice in the way that scarce or limited resources are and ought to be allocated between their possible uses.
  - Employs principles and procedures to determine the real cost
  - Less concerned with earnings or revenues necessary to meet various obligations than with the principles necessary to justify the selection of a particular project or activity.

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- **Building Economics (cont'd)**
  - Building or construction economics is a branch of general economics
  - Consist of application of the principles associated with general economic theories to the particular need and requirements of the construction industry.

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Building Economics (cont'd)

- It is concerned with a study of the industry and its place within the economy, the construction firms, the roles of designers and contractors, the processes employed and the final product of buildings or other structures.

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Standard Texts

- In 1957, The Ministry of Education published *Building Bulletin No. 4 - Cost Study.*
- It is produced to the construction industry a new method of working and the principles of cost analysis and cost planning.

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Standard Texts (cont'd)

- The aims of this process were carefully itemised to:
  - Identify building elements
  - reveal the distribution of costs between the elements in a building
  - relate the cost of any constituent element to its importance as a necessary part of the whole building

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Standard Texts (cont'd)

- The aims of this process were carefully itemised to (cont'd):
  - Compare the costs of the same element in different buildings.
  - Obtain and use cost data in planning other schools
  - ensure a proper balance, within the appropriate cost limits, between the superficial area and the cost per square metre.

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Standard Texts (cont'd)

- Year by year, many other relevant texts were published.
- In 1962, the Building Cost Advisory Service was formed by RICS which later became the Building Cost Information Service (BCIS)
- Each of the relevant texts that were published helped to explain and expand the subject of building economics.

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- Refer to the table

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Standard Texts (cont'd)

- The subject has grown rapidly during the latter half of the 20th century and represents a major aspect on many building and surveying courses.

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Trends in Building Economics

- The trends throughout the latter part of the 20th century has emphasised in improving the quality of advice in order to allow for clients to make better decisions.
- There have also been an increase in knowledge about the bahaviour of costs and in the use and application of information technology.
- The rapid retrieval of data and the ease by which models can be updated to take into account design decisions have allowed such improved advice to be provided.

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Trends in Building Economics (cont'd)

- The trends have swung between a heavy reliance on the importance of experience and judgement to a rationale that construction costs can be analysed in a simple formulae.
- Emphasise today is towards providing design and construction solutions that seek to resolve the economic choice while still meeting the specific needs of clients

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Trends in Building Economics (cont'd)

- Value for money is seen as a process of adding value to the project.
- Also incorporated within the economic choice is the importance of life-cycle costing or whole-life costs associated with the project.

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Trends in Building Economics

- The interest in building economics is a result of many different factors:
  - Knowledge
    - The acquisition of knowledge has occurred in all walks of life and in all disciplines
    - Knowledge is increasing at an exponential rate.
    - To improve the practice of the construction industry.

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Trends in Building Economics

- The interest in building economics is a result of many different factors (cont'd):
  - Information Technology (IT)
    - IT is perhaps the biggest single indicator that has helped unlock techniques and practice that would not be available manually.
    - Improve data storage, data retrieval, etc
    - Data used in building economics can be easily and rapidly changed or updated.
    - Design decisions can be more easily incorporated.

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Trends in Building Economics

- The interest in building economics is a result of many different factors (cont'd):
  - Increased Awareness of Other Industries and Professions
    - The academic base has allowed the different professions to understand each other more easily.

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Historical Context

- The ending of WWII followed the period of high unemployment of the 1930s.
- The British economy was in serious condition and the country was in serious debt.
- During the immediate post-war years, several major factors helped to create conditions of an economic boom in the construction and property industries:
  - The desire to renew outdated property
  - the need to replace the considerable amount of property that have been damaged.

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Historical Context (Cont'd)

- During the immediate post-war years, several major factors helped to create conditions of an economic boom in the construction and property industries (cont'd):
  - The need to provide new buildings for homes, employment, education, health, etc for growing population and the needs of the welfare for state.
  - The need to provide new buildings to meet the aspirations of a new generation.

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Historical Context (Cont'd)

- There were also changes in the manufacturing industry, with the newer industries requiring investments in new premises to suit changes in technology.
- Greater proportion of jobs being created in offices than on the shop floor.
- Major developments in the development of motor car causing the need to build better roads and highways
- All these factors helped create the need for construction development and an expanding construction industry

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Historical Context (Cont'd)

- Early Years
  - Building economics in the middle of this century confined itself almost to the forecasting of contractors' tenders through approximate estimating.
  - The techniques used before were often referred to as single price methods
  - Approximate quantities were required to provide clients with a budget.
  - They also provided an overall cost which architects would then complete the working drawings for the project

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Historical Context (Cont'd)

- Early Years (cont'd)
  - There were methods that allowed for a simple and quick quantification of the building but methods required significant expertise and judgement in their pricing.
    - These forecast frequently result in the preparation of addendum bills of quantities.
  - The reasons for the discrepancies between approximate estimates and tender sums were not difficult to find.
  - Changes in design and specification, lack of accurate cost data and information were among the reasons.

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Historical Context (Cont'd)

- Early Years (cont'd)
  - The initial study of building economics encouraged the development of a set of procedures that would help, at least to minimise the variability between early estimates and tender sums.

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Historical Context (Cont'd)

- 1970s and 1980s
  - The middle years of building economics were dominated by two themes:
    - Concerned with the ability to forecast contractors' tender sums more accurately
      - Cost Modelling was introduced based on different techniques of regression analysis and simulation.
      - They attempted to capitalise on the widening availability of computers that were becoming a more common tool in the industry.

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Historical Context (Cont'd)

- 1970s and 1980s (cont'd)
  - The middle years of building economics were dominated by two themes (cont'd):
    - Concerned with value for money in building
      - different designs and techniques being adopted on site to generate different cost to the clients

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Historical Context (Cont'd)

- The later years
  - The more recent years, building economics research and development has built upon past studies and has been informed by changes in other parts of society.
  - Has required the industry to respond with new ideas and proposals.
  - Value for money remains a constant companion.
  - Has encouraged development in value engineering and management techniques to examine ways of meeting clients' longer term objectives.

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Historical Context (Cont'd)

- The later years (cont'd)
  - There also have been a shift away from evaluating buildings on the basis of their initial costs and values alone to looking at the longer term perspective.
  - The emphasise throughout has been on improving the quality of advice in order to allow clients to make better decisions.

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Historical Context (Cont'd)

- The future
  - Can be summarised as follows:
    - Construction costs will always need to be forecasted, budgeted, controlled, accounted and evaluated.
    - The principle of doing more for less, which is a principle adopted throughout many facets of industry and society, will remain a topical theme, do its work quicker, better and less expansive.
    - Seeking out better or more economic methods
    - The use of information technology in the capture and use of data and knowledge will become more interactive

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Historical Context (Cont'd)

- The future (cont'd)
  - Can be summarised as follows (cont'd):
    - Best practices, achieved through benchmarking, will set the standards to be adopted and exploited.
    - A whole industry approach.
    - The presence of advanced communication systems promises to make countries more alike and to reduce the importance of national boundaries.
    - The future is always going to be difficult to predict!!