



ANSWER KEY TO ACCOMPANY: *Architecture* by Geoffrey Makstutis

INTRODUCTION

1. b. seventeenth (p. 6)
2. (p. 9)
 - * 'a person who designs buildings and advises in their construction'
 - * covers what most people agree the role of an architect to be
 - * architecture is not simply about buildings nor about the design and construction of them
3. (pp. 8-12)
 - * architects are rich – architecture is not a profession that naturally leads to wealth
 - * architects are famous – a few well-known ones, thousands known only to a small number of people
 - * architects command universal respect – historically architects have not been highly valued but today good architects are respected like other professionals
 - * architects just draw/design things – architecture is a varied profession with some highly specialized activities
 - * being an architect is hard work – an architect needs to engage in continuing professional development as well as the activities of professional practice
 - * architecture is an occupation – for those who succeed in architecture it becomes more than just a job but there are job-like aspects to the practice of architecture
 - * architecture involves a lot more than drawing – architecture incorporates many processes and drawing is part of the process (in larger practices may find some architects who do 'draw' in the traditional sense)
 - * architecture is rewarding – it is for anyone who feels that having a well-designed environment is important and who likes the challenge of combining creativity, philosophy, science and engineering

CHAPTER 1: THE SETTING

1. (p. 17)
 - * Doric, Ionic and Corinthian
 - * a visual 'language' – they defined a system of proportion and rules of usage for different building elements as well as a coherent set of decorative motifs
2. (p. 20)
 - * Imhotep
 - * Pyramid of Djoser (Stepped Pyramid) in Saqqara
 - * represented one of the most important aspects of the life and afterlife of the pharaoh – not simply a burial place
3. (pp. 21-22)
 - * Iktinos and Kallikrates
 - * centrepiece of the Athenian Acropolis (cultural centre of Athenian city-state and broader collection of Greek city-states) and template for important public and private buildings for centuries to follow

4. (p. 23)
 - * De Architectura (The Ten Books of Architecture)
 - * firmitas (firmness), utilitas (commodity) and venustas (beauty)
5. (p. 23)
 - * the power of the Roman Catholic Church increased and there was a rise in monastic orders leading to the construction of the great cathedrals of Europe
6. c. Master Builder (p. 24)
7. (p. 26)
 - * architect came to be seen as on a par with other artists
 - * apprentices would receive educations in the humanities as well as the arts
 - * architect engaged in practical pursuit but from position of scholarly study of geometry, mathematics and aesthetics – theory and practice coming together
8. (p. 27)
 - * the development of the architect as a profession
 - * a reasoning of the difference between the architect and master mason or other skilled craftsman
9. (p. 28)
 - * Andrea di Pietro della Gondalla (Palladio)
 - * I Quattro Libri dell'Architettura (The Four Books of Architecture)
 - * nine rule-sets that defined the principles and regulations upon which architecture should be based
10. (p. 29)
 - * due to increasing prosperity a greater demand for design and building services to support the expression of the middle classes' new affluence in their business and domestic environments
11. (pp. 29-30)
 - * Académie de L'Architecture, École des Arts, Institute of British Architects, American Institute of Architects
 - * need became increasingly important as complexity of projects and relationships between client and architect, and architect and builder, became more specialized
12. (p. 32)
 - * a new social order was now possible and architecture could express a new relationship among people that was about equality and democracy not aristocracy and class
 - * new materials and technology meant new range of possibilities for designers to exploit
13. (p. 33)
 - * Modernism embraced the notion that traditional forms of art, architecture, literature and social organization were moribund while change was happening through science, technology and social upheaval.
 - * Bauhaus provided a radical change in the way that architecture and design education were approached – the school's programme encompassed fine art, ceramics, performance, product design and applied arts
14. (pp. 33-34)
 - * Postmodernism in architecture was a move against the 'nondescript' nature of Modernism and a return to architecture that could be seen to carry social and cultural significance to the people who used or viewed it.

15. (pp. 34-35 and p. 237)

- * Deconstruction refers to a form of critical analysis in literary criticism, social science and philosophy that seeks to expose the inherent internal contradictions of literature and philosophy
- * Deconstructivism is a style of architecture defined by Philip Johnson and Mark Wigley for their 1988 exhibition at the Museum of Modern Art in New York

16. (p. 38)

- * the computer
- * means of generating form in new and innovative ways

Discussion/essay question

1. Research in more detail the movements of Modernism and Postmodernism as they relate to architecture. Discuss the key features of each movement and examine the implication of these for people using the buildings. (pp. 32-34)

CHAPTER 2: EDUCATION AND QUALIFICATION

1. (p. 49)

- * early 1970s in London
- * based on the idea that a group of students will work with the same tutor for an entire academic year
- * main focus of Unit System is the design projects, with other areas of study acting in support

2. (p. 50) The most common form of architectural education is often referred to as the Studio System.

- * in Studio System the design-studio activity will be one module among others that a student will be engaged with during the course of a semester or term

3. c. students at different levels work together (p. 50)

4. (pp. 51-52)

- * 'problem-based learning'
- * seeks to create situations where student engages with issues that are like those that exist outside of the educational environment – modelled on the 'real world'

5. c. charrette (p. 55)

6. (p. 55)

- * where a student has an opportunity to work on a real project for a client as part of his/her studies

Discussion/essay question

1. Discuss why written and verbal skills are important for an architect. Outline two situations in which an architect may be called upon to write and two in which he or she might be called upon to speak about his/her work. (pp. 58-59)

CHAPTER 3: THE CLIENT AND THE BRIEF

1. (p. 70)

- * via word of mouth or referral
- * referrals tend to be of similar scope and type

2. (pp. 71-72)

- * open and invited
- * open are open to all who register (usually have to pay a registration fee), invited have limited access (usually for very large projects)

3. (p. 74)

- * a proposal to provide services

4. (pp. 75-86)

- * private, commercial, corporate, developer, institutional, government
- * private – individual or family; private dwelling
 - commercial – small companies; shops, restaurants, nightclubs, etc.
 - corporate – companies; office-related buildings such as headquarters, research laboratory
 - developer – individual or company; commercial and residential properties
 - institutional – institutions such as museums, galleries, schools; buildings that support the aims and values of the institution such as a theatre, museum, etc.
 - government – local and national government; wide range of projects including schools, hospitals, office buildings, embassies, etc.

5. (p. 89)

- * gives architect some idea of what client requires
- * forms part of the contract with the architect

6. b. initial/project/design/consolidated (p. 90)

7. (p. 92)

- * a contract is a legally binding agreement between parties that sets out an offer, acceptance and consideration
- * a written contract ensures that there is no ambiguity or misunderstanding of rights and responsibilities

8. (pp. 97-98)

- * a design-build contract is one in which an organization acts as a single entity in the overall process of delivering a project
- * a project management contract sees the architect not as designer but as coordinator of the design and consultancy work of other architects

9. c. the offer/the acceptance/the consideration (p. 99)

10. (p. 100)

- * using a percentage of the estimated construction cost
- * higher percentage in smaller projects – intended to reflect fact that there is not much difference between amount of work required for a small project and a larger project (many of the requirements are same regardless of size e.g. planning applications, building regulations, etc.)
- * lower percentage for very large projects – reflects fact that a small percentage will be considerable amount of money and likely to be a lot of repetitive information in the project 11.
 - b. hourly rate (p. 101)

CHAPTER 4: FROM BRIEF TO PROJECT

1. (p. 104)

- * RIBA – appraisal, design brief, concept, design development, technical design, production information, tender documentation, tender action, mobilization, construction to practical completion, post practical completion
- AIA – originate, focus, design, build, occupy

2. (p. 105)

- * inception
- * full documentation of the site including site-survey information

3. (p. 106)

- * orientation of the site, height and location of surrounding buildings, height and location of existing trees, traffic patterns, soil conditions

4. a. feasibility phase (p. 109)
5. (p. 109)
 - * cost, statutory obligations, procurement
6. (p. 110)
 - * when projects are located in environmentally sensitive areas
7. (pp. 111-114)
 - * physical information about plot – location, size, slope/elevation, existing conditions, etc.
 - * history of site
 - * existing use of site
 - * movement of vehicles
 - * movement of people
8. (p. 115)
 - * a design concept is the underlying idea of why the proposal takes the form that is represented
 - * architects use concepts in order to attempt to bring other disciplines, influences or methodologies into their design process
9. (p. 125)
 - * selection of materials
10. b. Intelligent Materials Pooling (p. 126)
11. (p. 128 and p. 237)
 - * Cradle-to-Cradle design
 - * concept of sustainable design that seeks to minimize or eliminate waste from the lifecycle of a product
12. c. 1% (p. 132)
13. (pp. 132-133)
 - * detailed proposal
 - * establish basic idea of the project
14. (pp. 134-135)
 - * aim of a presentation is to give the audience an understanding of the proposal without going into fine detail or technical information
15. (pp. 135-137)
 - * real models allow architects to model quickly and easily, are low cost, require no need for specialist software or for members of the team to be conversant with computer modelling, can be worked on by many hands
 - * computer models can be produced rapidly, changes can be implemented easily, ability to 'inhabit' the model, can verify project meets safety standards

Discussion/essay question

1. Discuss the type of energy which can support a shift towards more sustainable cities and towns. Explain the benefits of the different types of this energy in buildings. Are there any drawbacks to using them? (pp. 129-130)

CHAPTER 5: THE PROJECT AND THE PROCESS

1. (p. 141)
 - * provide for the managed growth and alteration of the fabric of the built environment, also provide some control over visual aspect of a locality

2. (p. 145)
 - * where development may have impact on others or where a change of use is proposed
3. (p. 146)
 - * process is based on the submission of drawings and information that set out the intention of the client team
4. (p. 146)
 - * existing site plan, section(s), plan(s), elevations, proposed site plan, planning application form, planning fee
5. (p. 147)
 - * structural integrity, fire safety, health, accessibility, energy conservation
6. (p. 149)
 - * working drawings provide an overall understanding of the project as well as a detailed description of it at many different levels
 - * general arrangement drawings and detail drawings
7. a. Building Information Modelling (p. 152)
8. (pp. 155-156)
 - * amount of time needed to develop drawings is reduced, less onerous to make changes, level of consistency across set of drawings, possible to have many people working on parts of a single drawing
9. (p. 156)
 - * a specification sets out the requirements for the completed project
 - * performance specification and prescriptive specification
10. (p. 158)
 - * door, window, hardware, room, finish
11. (p. 158)
 - * prepared in conjunction with a quantity surveyor and lists all of the materials and products to be used in project, as well as their cost
12. (p. 160)
 - * it is the contractor/builder who will work to make the design become a reality based on the information provided
13. (p. 160)
 - * bid/tender or negotiation
 - * tender (or bidding process) is more common – competitive process in which a group of potential contractors submit their estimated costs for the scheme
14. b. client and contractor/builder (p. 163)
15. A _____ is an individual or company hired by the main contractor to undertake some specific aspect of the construction.
16. (p. 173)
 - * small amounts of work that need to be completed
17. (p. 173)
 - * period in which defects have to be corrected (normally six months)
 - * architect has to continue to be involved with project until defects rectified and some money may be retained until the work is completed

Discussion/essay question

1. Discuss the advantages of using BIM software on a project. (pp.152-153)

CHAPTER 6: THE PRACTICE

1. (pp. 176-178)
 - * sole practitioner, partnership, limited liability company
 - * sole practitioner – difficulty undertaking work on a large scale, difficult to seek out new projects while working on existing ones, liability
 - partnership – sharing of liability, larger projects are more possible, good way to develop a practice
 - limited liability company – can bear greater financial exposure on larger projects, shares can be issued
2. (p. 182)
 - * principal is the qualified architect at the head of the firm
3. Associates are usually qualified architects who work at one level below the principal. (p. 183)
4. (p. 184)
 - * stepping stone to higher, more responsible position, offices rely on them to assist in the design stages, create presentation materials, make models, etc.
5. (pp. 188-189)
 - * departmental structure and team-based approach
 - * departmental structure
 - Benefits – can increase through-put of a project, practice can have many schemes at different stages
 - Drawbacks – large number of people in some departments and fewer in others and may be times when those in large department are not actively engaged in a project, some staff may find lack of ability to follow a scheme through from start to finish is less rewarding
 - * team-based approach
 - Benefits – continuity throughout the project, more rewarding for individual to follow scheme from start to finish
 - Drawbacks – if particular skill is not held within the team then need to bring someone else in
6. c. cost consultant/quantity surveyor (p. 195)
7. (pp. 195-196)
 - * role of a structural engineer is to provide the design and specification of the system that will keep the building standing
 - * a mechanical engineer considers the ways in which the building is to be cooled, heated and ventilated

CHAPTER 7: THE FUTURE

1. (pp. 220-228)
 - * visualization in film and television, planning, project management, specification writer, site architect/contract administrator
2. (p. 230)
 - * sustainability – architects need to consider ways in which the design of buildings can utilize more sustainable materials and allow for longer lifespans
 - * utilize sustainable materials, design flexibility into buildings for future use, understand the way people live and the relationship between space and community

Discussion/essay questions

1. Discuss how the Internet, and in particular on-line virtual worlds (such as Second Life) and Google Earth, are impacting on architecture in the twenty-first century. (pp. 208-212)
2. Explain in detail how modelling software such as CAD and BIM are influencing the design and construction of buildings. (pp. 212-213, see also chapter 5 pp. 152-153)