Paper 1 Statutory Controls in Building Works

Objective

To ascertain that the candidate is familiar with all aspects of the statutory control of local building works, he/she must demonstrate his/her awareness of local conditions in Hong Kong without having to make frequent enquiries on standard administrative procedures and statutory requirements.

Format

Multiple-choice and short questions, close-book paper

Duration

3 hours

Syllabus

1. Buildings Ordinance –
   Duties of an authorised person; professional liability in law; degree of supervision required by statute, building control, etc.

2. Submission of plans to the Building Authority -
   Submission procedure; grounds on which application may be refused; basic checking before plans are submitted; working knowledge of Building Regulations and Codes of Practice, Practice Notes for Authorised Persons, etc.

3. Other related Ordinance and Codes of Practice -
   General knowledge of the Town Planning Ordinance and other statutory controls which may affect the approval of development proposals, e.g. Civil Aviation Ordinance, Education Ordinance, Places of Public Entertainment Ordinance, Buildings Ordinance as applied to the New Territories, etc.; land exchange, lease modification, land titles and deeds, etc.

Recommended Reading List

1. Buildings Ordinance (Cap. 123) and subsidiary Regulations
2. Construction Sites Safety Ordinance (Cap. 59)
3. Town Planning Ordinance (Cap. 131)
4. Summary Offences Ordinance (Cap. 228)
5. Hong Kong Airport (Control of Obstructions) (Cap. 301)
6. Demolished Building (Redevelopment of Sites) (Cap 337)
7. Arbitration Ordinance (Cap 341)
8. Codes of Practice:
   a. for the Provision of Means of Escape in Case of Fire
   b. for Minimum Fire Service Installation & Equipment and Inspection & Testing of Installations of Equipment
   c. for Fire Resisting Construction
   d. for Means of Access for Firefighting & Rescue
   e. for Building Works for Lifts & Escalators
   f. for Site Safety Supervision
9. BD Practice Notes for Authorised Persons
10. Typical land sale conditions and Outline Zoning Plans
11. Hong Kong Planning Standards & Guidelines
12. Fire Safety (Commercial Premises) Ordinance and subsidiary Regulations
13. Place of Public Entertainment Ordinance (Cap. 172) and subsidiary Regulations
14. Architects Registration Ordinance (Cap. 408)
15. Landlord and Tenant (Consolidation) Ordinance (Cap. 7) Part IV
Paper 2  Building Contracts, Professional Practice, Professional Conduct, Conditions of Agreement & Scale of Charges

Objective

To ascertain that the candidate has gained sufficient working experience to apply his/her knowledge to general practice and contract administration.

To also ascertain that the candidate is familiar with the HKIA/ARB Codes of Professional Conduct, Conditions of Agreement and Scale of Charges.

Format

Multiple-choice and short essay questions, close-book paper

Duration

4 hours

Syllabus

1. General structure of the building industry and of the professions, and specialised trades concerned with the building process.

2. Job procedures from inception to completion including pre-contract (pre-tender and tender) procedures, and post-contract procedures.

3. Finance of building project: implication of different types of building contract in relation to construction time, first cost, and subsequent maintenance and running costs.

4. Principles of laws of contract applicable in Hong Kong.

5. Duties, liability and relationship of employer, contractor, sub-contractors and clerk-of-works, both in public and private practices.

6. Agreements and Forms of Contract for Use in Hong Kong, including those with and without quantities and for sub-contractors, etc.

7. Types of contract for alteration or addition works where a lump sum price is not suitable.

8. General understanding of the various means of resolution of contractual disputes including arbitration, mediation, litigation etc.

9. Conditions of Engagement and Scale of Professional Charges of the HKIA.

Core Reading List

3. Agreement and Schedule of Conditions of Nominated Sub-Contract for Use in the HKSAR, 2005 Edition

The above 4 items were issued under the sanction of The Hong Kong Institute of Architects, The Hong Kong Institute of Surveyors and The Hong Kong Institute of Construction Managers

5. Architects Registration Ordinance (Cap.408)
7. Code of Professional Conduct, HKIA
8. Code of Professional Conduct, ARB
9. The Rules of the Institute, HKIA
10. HKIA Rules for the Conduct of Architectural Competitions
11. HKIA Guidelines on Dissemination of Information and Promotion of Professional Services, 2008 Edition
12. Guidelines to HKIA Members on Participation in Invited Consultancy Proposals without Remuneration
13. Guidelines to HKIA Members on Participation in Invited Submission for Architectural Consultancy Proposal

Recommended Reading List

14. Professional Practice for Architects in Hong Kong
Wong W.S., Chan E. Editor, Pace Pub. Ltd., 1997
15. Building Contract Procedures in Hong Kong
Martyn J. Hills, Longman, Hong Kong
16. Professional Practice in Hong Kong, PACE
18. The Architect in Practice, Willis
Paper 3 Building Structures

Objective

To ascertain that the candidate have an awareness and understanding of the basic principles of structural design, and a general working knowledge and practical understanding of the regulations/codes applicable for the selection and integration of structural systems in the design of buildings.

Format

Multiple-choice questions, close-book paper

Duration

1.5 hours

Syllabus

1. Appropriate structural system -
   Sufficient awareness and understanding in order to select appropriate structural systems and components for various building types, and assess the effect of building functions on the selection of a structural system.

2. Basic structural systems -
   Preliminary design and simplified analysis of basic structural elements.

3. Composite structural system -
   Selection and recommendation of composite structural systems for various building types.

4. Connections -
   The identification and selection of details for the connection of various structural elements in the assembly of buildings.

5. Load calculations -
   Understanding of the magnitude and distribution of loads on buildings, and of the impact of various loading conditions on the integrity of the structural system in building. Knowledge of requirements of prevailing codes and regulations related to all loads, including lateral loads, identify and calculate the primary loads on building structures.

6. Geotechnical and foundation design -
   Sufficient knowledge to understand soil report and relate the properties of soils to foundation design. Understanding of the overall concept related to the application of ground anchors, earth retaining structures, deep basement construction and other geotechnical systems in building design.

7. Curtain walls and cladding systems -
   The ability to assess the appropriate fixing and construction details related to curtain walls and cladding systems including the incorporation of movement joints.

8. Economics -
   Knowledge to relate the cost of structural systems, their materials, and methods of assembly and installation to the design of buildings.
9. Code requirements - 
Awareness and understanding of the relevant requirements of building 
regulations, codes of practices and standards in the selection of structural systems 
and building appurtenances.

10. Building additions and renovations - 
The ability to assess requirements and considerations to renovate or modify an 
existing building structure.

Recommended Reading List

1. Design and Technology in Architecture, David Guse, 1985, John Wiley & Sons
2. Structural Concepts & Systems for Architects 7 Engineers, Lin & Stotesbury, 1981, 
   John Wiley & Sons
3. High-rise Building Structures, Wolfgang Schueller, 1977, John Wiley & Sons
   Sons
6. Understanding Structures, Derek Seward, Macmillan
7. Building (Construction) Regulations
   Spon
9. Concepts of Cladding, A. Brooks
10. Cladding of Building, A. Brooks
11. The Way We Build Now – Form, Scale & Technique; A Orton
12. Multi-Storey Steel Building; Hort, Henn & Sontag
13. Structures in Architecture, M Salvadori
15. Introducing Structures – Civil & Structural Engineering, Building and 
   Architecture; A J Francis
   Butterworth Heinemann, 1997
17. Shaping Structures: Statics; Allen, Edward and Zalewski, Waclaw, 
   John Wiley & Sons, 1997
   Butterworth Heinemann, 1994
   New York, 1990
Objective

To ascertain that the candidate have acquired the basic knowledge in applying the general principles of building services and environmental controls through their architectural training as well as practical experience.

Format

Multiple-choice questions, close-book paper

Duration

1.5 hours

Syllabus

1. Basic principles –
   Measurement systems and devices
   Normal human comfort levels
   Temperature
   Humidity
   Natural and artificial light
   Air pressure
   Air quality
   Water quality
   Sound quality

2. Heating, ventilation and air-conditioning

3. Fires services

4. Plumbing and drainage

5. Electrical

6. Lifts and escalators

7. Acoustics

8. Miscellaneous –
   Refuse collection systems
   Cost awareness of various building services systems
   Solar energy
   Daylighting utilisation
   Historical context in architecture
   Social values
   Intelligent buildings
**Recommended Reading List**

1. Building (Standards of Sanitary Fitments, Plumbing, Drainage Works & Latrines) Regulations
2. Building (Ventilating Systems) Regulations
3. Related AP/RSE Practice Notes
4. Code of Practice on Building Works for Lifts and Escalators
5. Code of Practice for Minimum Fire Service Installations & Equipment and Inspection & Testing of Installations of Equipment
6. Handbook on Overall Thermal Transfer Value (OTTV), Building Authority
7. Hong Kong Waterworks Standard Requirements for Plumbing Installation in Buildings (Feb 2004), Water Supplies Department
9. Code of Practice for Energy Efficiency for Lighting Installation
10. Code of Practice for Access Facilities of Buildings for the Provision of Telecommunications and Broadcasting Services
11. Code of Practice for Energy Efficiency for Air Conditioners
12. Code of Practice for Energy Efficiency for Electrical Installations
19. Acoustics, Noise & Buildings; Parkin, Humphreys & Cowell; 4th Edition; Faber & Faber
Paper 5  Building Materials & Technology

Objective

This subject is concerned with the practical application of the properties and performance of materials, components and finishes and the elements of construction.

The first objective is to test the candidate’s knowledge of the properties of materials and their performance in use; his ability to analyse the properties required of a material or product for a particular situation, and to make a good selection from the sources available.

The second objective is to test the candidate’s understanding of the principles that govern the design or the selection of appropriate construction technique for a variety of situations. This understanding should include all scales ranging from complete building systems to detailed component designs.

The third objective is to test the candidate’s knowledge of local construction techniques and practices, including his understanding of the local statutory restraints, construction programming and sequencing of works, and the performance of the component systems through the life of buildings.

In all cases candidates should understand the ways in which the selection of materials, component systems and construction techniques interact with each other, and with other design aspects, to influence the economics, functioning and appearance of buildings in the Hong Kong context.

Format

Multiple-choice questions, close-book paper

Duration

1.5 hours

Syllabus

1. Application of building techniques and materials
   - Demolition, site clearance and alteration works
   - Excavation and earthworks
   - Steel sheet piling works
   - Concrete works
   - Foundation systems in Hong Kong
   - Brickwork and blockwork
   - Masonry
   - Roofing, waterproofing and expansion joints
   - Carpenter, joinery and ironmongery
   - Structural steelwork
   - Metalwork
   - Metal windows and doors
   - Glazing, curtain, wall and cladding
   - Floor, wall and ceiling finishes (incl. carpet and raised flooring)
   - Painting
   - Builder’s works and materials in relation to plumbing, drainage and E&M services
   - Internal fittings and fixtures
   - External works and landscape works

2. Local construction trade practices

3. Detailing and selection of building components and systems

4. Local statutory restraints
   - Building (Construction) Regulations
   - Fire Resisting Constructions
Refuse Storage Chamber and Chutes Regulations
- Building (Energy Efficiency) Regulations
- Practice Notes for Authorised Persons
- Standards of Sanitary Fitments (Plumbing, Drainage and Latrines) Regulations

5. Application and statutory requirements for the design for the disabled
- Building (Planning) Regulations and applications

6. Principles and applications of specification in the Hong Kong context
- Workmanship and materials for construction
- Standards and tests for various building materials and fitments

7. Building defects – diagnosis, remedial works and prevention
7.1 The approach to building and remedial works
- Diagnosis: principles and procedures
- Remedial works
- Sound construction: principles and techniques
7.1 Common causes and mechanisms of failure in building envelope
- Condensation
- Entrapped moisture
- Rail penetration
- Rising dampness
- Movement
- Loss of adhesion
- Corrosion

Core Reading List
2. Building (Construction) Regulations
3. Practice Notes for Authorised Persons
4. Building (Energy Efficiency) Regulations
5. Refuse Storage Chamber and Chutes Regulations
6. Building Materials and Technology in Hong Kong, Wong Wah Sang

Recommended Reading List
8. Code of Practice for Overall Thermal Transfer Value in Buildings, Buildings Department
9. Fire Resisting Construction, Building Authority
10. Standards of Sanitary Fitments (Plumbing, Drainage and Latrines) Regulations
12. Architectural Graphic Standards; Ramsay Sleeper, AI
14. Construction Technology, Vol. 1, 2, 4; R Chudley
15. AJ Metric Handbook
18. Building (Planning) Regulations
20. Professional Practice for architects in Hong Kong, Pace Publications, 1998, Wong Wah Sang