

Supplementary Guidance Notes

for the Professional and Occupational Performance (POP) Records

May 2010

The Supplementary Guidance Notes contain the mapping charts to enable candidates to determine their knowledge exemptions, along with the range and scope lists for both the MCIAT and TCIAT POP Record units.

Working out your knowledge exemptions

If you have the CIAT Accredited Honours degree programme, your exemptions are as follows:

- graduated after 1 May 2010, you are exempt from Underpinning Knowledge units 1–14 for the MCIAT POP Record and Underpinning Knowledge units 1–9 for the TCIAT POP Record.
- graduated before 1 May 2010, you are exempt from Underpinning Knowledge units 1, 2, 4 and 6–14 for the MCIAT POP Record and Underpinning Knowledge units 1–9 for the TCIAT POP Record.

Map of knowledge between the MCIAT and TCIAT POP Records — see page 3. UK HNC/D in Building Studies pre 2002 — see mapping charts on pages 4-5. UK HNC/D in Architectural Design post 2002 — see mapping charts on pages 6-7. UK HNC/D in Building post 2002 — see mapping charts on pages 8-9. UK HNC/D in Construction post 2002 — see mapping charts on pages 10-11. SQA HNC/D in Architectural Technology post 2002 — see mapping charts on pages 12-15. Higher Certificate from IVE, Hong Kong — see mapping charts on pages 16-17. NVQ Level 4, Built Environment Design — see mapping charts on pages 18-19. S/NVQ Level 4, Architectural Technology — see mapping charts on pages 20-21.

Other qualifications are recognised by CIAT for Underpinning Knowledge exemptions. However, the onus is on your educational establishment to map your programme against the POP Record requirements. Such programmes can include:

Ordinary degree in Architectural Technology from Republic of Ireland.

Foundation Degree (Fdsc) in Architectural Technology.

Approved Associate of Science in Architectural Studies from City University in Hong Kong.

Map of knowledge between the MCIAT and TCIAT POP Records

Project inception

MCIAT POP Record	TCIAT POP Record
Unit	Unit
1.1	1.1
1.2	
2.1	2.1
2.2	2.2
2.3	
3.1	
3.2	
3.3	
3.4	

Project planning

MCIAT POP Record	TCIAT POP Record
Unit	Unit
4.1	
4.2	
4.3	
4.4	
4.5	
4.6	
5.1	3.1
5.2	3.2
5.3	3.3
6.1	4.1
6.2	
6.3	
6.4	4.2

Design process

0	
MCIAT POP Record	TCIAT POP Record
Unit	Unit
7.1	
7.2	
7.3	
7.4	
8.1	5.1
8.2	
8.3	5.2
9.1	
9.2	6.1
9.3	6.2
10.1	7.1
10.2	7.2
11.1	7.5
11.2	

Contract management

0	
MCIAT POP Record	TCIAT POP Record
Unit	Unit
12.1	
12.2	8.1
12.3	8.2
12.4	
12.5	
13.1	9.1
13.2	9.2
13.3	
13.4	
14.1	
14.2	
14.3	

Professional practice

MCIAT POP Record	TCIAT POP Record
Unit	Unit
15.1	
15.2	10.1
16.1	
16.2	10.3
16.3	10.4
16.4	10.5
17.1	11.1
17.2	
17.3	

Map of knowledge for pre 2002 Edexcel/BTEC HNC/D (Building Studies) units against MCIAT POP Record units



Map of knowledge for pre 2002 Edexcel/BTEC HNC/D (Building Studies) units against TCIAT POP Record units

U	nit	Design Procedures	Building Construction A	Building Construction B	Building Construction C	Building Services and Equipment A	Contractual Administration	Conversion and Adaptation	Design Technology A	Design Technology B
1	1.1									
1	1.2									
	2.1									
2	2.2									
	2.3									
	3.1									
3	3.2									
	3.3									
4	4.1									
4	4.2									
	5.1									
5	5.2									
	5.3									
6	6.1									
	6.2									
	7.1									
	7.2									
7	7.3									
,	7.4									
	7.5									
	7.6									
8	8.1									
0	8.2									
9	9.1									
5	9.2									
	10.1									
	10.2									
10	10.3									
	10.4									
	10.5									
11	11.1									

Map of knowledge for post 2002 Edexcel HNC/D (Architectural Design) units against MCIAT POP Record units



Map of knowledge for post 2002 Edexcel HNC/D (Architectural Design) units against TCIAT POP Record units

U	nit	Technology A	Technology B	Building Services Engineering and Technology	Contractual Procedures	Refurbishment and Adaptation	Technology C	Specification and Contract Documentation	Design Procedures	Design Technology	Materials, Properties and Performance
1	1.1										
-	1.2										
	2.1										
2	2.2										
	2.3										
	3.1										
3	3.2										
	3.3										
4	4.1										
	4.2										
	5.1										
5	5.2										
	5.3										
6	6.1										
	6.2										
	7.1										
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10	10.2										
10	10.3										
	10.4										
11	10.5 11.1										
11	11.1										

Map of knowledge for post 2002 Edexcel HNC/D (Building) units against MCIAT POP Record units



Map of knowledge for post 2002 Edexcel HNC/D (Building) units against TCIAT POP Record units



Map of knowledge for post 2002 Edexcel HNC/D (Construction) units against MCIAT POP Record units



Map of knowledge for post 2002 Edexcel HNC/D (Construction) units against TCIAT POP Record units



Map of knowledge for post 2002 SQA HNC (Architectural Technology) units against MCIAT POP Record units

	Unit	Construction Technology 3: Industrial/Commercial Superstructure	Standard Forms of Construction Contracts	Building Materials: Selection and Deterioration	Architectural Procedures	Architectural Drawing and Design	Design of Building Structures	Conversion and Adaptation of Buildings	Law 1 for Construction	Law 2 for Construction	Construction Health and Safety: Practice and Management	Site Administration	Quality Assurance in Construction	Promoting Sustainable Development	Intermediate CAD for Construction	Advanced CAD for Construction
1																
⊢	$\begin{array}{c} 1.1\\ 1.2\\ 2.3\\ 3.1\\ 3.2\\ 3.3\\ 3.4\\ 4.1\\ 4.2\\ 4.3\\ 3.4\\ 4.4\\ 4.5\\ 4.6\\ 5.1\\ 5.2\\ 6.3\\ 6.1\\ 6.2\\ 6.3\\ 6.4\\ 7.1\\ 7.5\\ 6.3\\ 6.4\\ 7.1\\ 7.4\\ 8.1\\ 8.2\\ 9.3\\ 9.1\\ 9.2\\ 9.3\\ 10.1\\ 10.1\\ \end{array}$															
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	10.2 11.1															
11	11.2 12.1															
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12	12.3 12.4	\vdash		<u> </u>			\vdash		-		-	-		\vdash		-
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13	13.3 13.4															\neg
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14	14.2 14.3															
15	15.1 15.2															\neg
4.0	16.1															
16	16.2 16.3	\vdash		_			\vdash		Ŀ	Ŀ	_	Ŀ		\vdash		
17	16.4 17.1															
''	17.2															
	17.3															

Map of knowledge for post 2002 SQA HNC (Architectural Technology) units against TCIAT POP Record units

l	Jnit	Construction Technology 3: Industrial/Commercial Superstructure	Standard Forms of Construction Contracts	Building Materials: Selection and Deterioration	Architectural Procedures	Architectural Drawing and Design	Design of Building Structures	Conversion and Adaptation of Buildings	Law 1 for Construction	Law 2 for Construction	Construction Health and Safety: Practice and Management	Site Administration	Quality Assurance in Construction	Promoting Sustainable Development	Intermediate CAD for Construction	Advanced CAD for Construction	
1	1.1																
	$ \begin{array}{r} 1.2\\ 2.1\\ 2.2\\ 3.1\\ 3.2\\ 3.3\\ 4.1\\ 4.2\\ 5.1\\ 5.2\\ 5.3\\ 6.1\\ \end{array} $																
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7	7.4																
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Map of knowledge for post 2002 SQA HND (Architectural Technology) units against MCIAT POP Record units

	Jnit	Construction Technology 1: Domestic Construction	Construction Technology 3: Industrial/Commercial Superstructure	Construction Site Surveying	Architectural Drawing and Design	introduction to the Construction Industry	Building Materials: Performance Studies	Information Technology Applications 1	Architectural Design Project 1	Quantitative Building Studies: Introduction	Standard Forms of Construction Contract	Intermediate CAD for Construction	Building Materials: Selection and Deterioration	Design of Building Structures	Architectural Procedures	Conversion and Adaptation of Buildings	Communication: Presenting Complex Communication for Vocational Purposes	Architectural Design Project 2	Law 1 for Construction	Law 2 for Construction	Construction Health and Safety: Practice and Management	Advanced CAD for Construction	Site Administration	Building Inspection	Fire Studies Related to Buildings	Quality Assurance in Construction	Application of Building Regulations	Promoting Sustainable Development
1	1.1		5	5	4		ш	-	4	5	55	_	ш		4	5	5	4			5	4	0)	ш	4	5	4	-
2	1.2 2.1 2.2																											
	2.2 2.3 3.1 3.2																											_
3	3.2																											_
	3.3 3.4 4.1 4.2 4.3 4.4 4.5 4.6																											_
4	4.2																											
	4.4																											
5	5.1 5.2																											
	5.3 6.1																											
6	5.1 5.2 5.3 6.1 6.2 6.3 6.4 7.1 7.2 7.3 7.4																											
7	7.1 7.2																											
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16	16.2 16.3																											
17	16.4 17.1																											
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Map of knowledge for post 2002 SQA HND (Architectural Technology) units against TCIAT POP Record units



Map of knowledge for Higher Certificate from IVE, Hong Kong units against MCIAT POP Record units



Map of knowledge for Higher Certificate from IVE, Hong Kong units against TCIAT POP Record units

	nit	Building Services II	Building Construction	Building Technology II	Land Surveying II	CAD II	Building Site Management	Architectural Practice II	Law & Contract Procedures	Measurement II	Desgin Studio Technology	Integrated Studies
	1.1											
1	1.1											
<u> </u>	2.1											
2	2.2											
	2.3											
	3.1											
3	3.2											
	3.3											
· .	4.1											
4	4.2											
	5.1											
5	5.2											
	5.3											
6	6.1											
0	6.2											
	7.1											
	7.2											
7	7.3											
	7.4											
	7.5											
	7.6											
8	8.1											
	8.2											
9	9.1											
	9.2											
	10.1											
	10.2											
10	10.3											
	10.4											
<u> </u>	10.5											
11	11.1											

Map of knowledge for NVQ Level 4 Built Environmental Design against MCIAT POP Record units



Map of knowledge for NVQ Level 4 Built Environmental Design against TCIAT POP Record units



Map of knowledge for S/NVQ Level 4 Architectural Technology against MCIAT POP Record units

The shaded areas indicate where the S/NVQ unit matches the knowledge requirements in the POP Record units. Where more than one S/NVQ unit matches a POP Record unit then all S/NVQ units must be attained to gain exemption for the POP Record unit knowledge requirements.



Map of knowledge for S/NVQ Level 4 Architectural Technology against TCIAT POP Record units

The shaded areas indicate where the S/NVQ unit matches the knowledge requirements in the POP Record units. Where more than one S/NVQ unit matches a POP Record unit then all S/NVQ units must be attained to gain exemption for the POP Record unit knowledge requirements.



Range and scope lists

Listed below are the types of evidence which could be covered within the MCIAT and TCIAT POP Record units. It is designed to be indicative and is not a comprehensive list.

MCIAT POP Record

Unit 1 — Client and user requirements

- The **goals and priorities** of clients including; quantity; quality; cost; time; development; improvement and use
- The **needs** such as: the purpose of use; location; occupancy; site access; access to services; access to transport infrastructure; client expectations, options, preferences and aspirations; space standards and requirements for spatial organisation and relationship of functions; health and safety
- The **requirements**, which could be identified by: client and user requirement studies; consultation with people who may have an interest (clients, users, statutory bodies); checklists; questionnaires; standard documentation and advisory material; comparative field research; market research
- Appropriate methods and techniques for investigation: documentary, field research, questionnaires
- The use of investigations sources such as: records, people, authorities, archives
- The use of data such as: photographs, maps, drawings, legal documents, surveys, questionnaires
- Investigation of factors including: historical, conservation, social, visual, environmental, construction, quality cost, time
- Clarification of **opportunities and constraints**, which might include: project type, purpose and location, regulatory, physical and technical, health and safety, quantity, quality, cost, time
- Information presenting by methods such as: written, graphical

Unit 2 — Feasibility studies

- Different **survey types** (land and buildings) and **survey methods** (visual, approximate measured, detailed, graphic and instrumental)
- Utilisation of other **investigation sources** such as photographs; maps and charts; drawings; people; authorities and archives
- Circumstances and conditions: topography, obstacles, 'live' (in use) conditions
- Equipment: mechanical, optical, electronic
- Adherence to safe working practice: equipment; clothing; access
- Factors for investigation: historical, conservation, social, visual, environmental, construction
- Permission holders and processes: client; site owner and occupiers; adjoining owners and occupiers; notifiable authorities
- Methods and techniques for investigation: documentary, field research
- Investigations sources: records, people, authorities, archives
- Data: photographs, maps, drawings, legal documents, surveys
- **Opportunities and constraints**: project type, purpose and location, regulatory, physical and technical, health and safety, timescale
- Presenting: written, graphical, oral

Unit 3 — Sustainable development

- Factors against which impact of utilisation are assessed: nature; location; continued availability
- Utilisation: historic use; current use; anticipated future use
- Environmental implications: visual; social; cultural; technical; economic
- Alternative resources: culturally and environmentally acceptable to finite and non-renewable resources; local and global ecological systems; "high" and "low" technological alternatives
- Presenting: oral; written; graphical; electronic
- **Stakeholders**: immediate supervisors and managers; elected representatives; public servants; shareholders

- Investigating: use of benchmarking tools; research; consultancy advice
- Alternatives: development; adaptation; alteration; refurbishment; relocation
- Social views of people who have an interest: client; finders/investors; workforce; suppliers; users; community
- Asset value and sustainability: provide capital growth; location in relation to a stable economy and community; stable revenue; minimising running costs (environmental and economic); minimal maintenance; location in relation to flooding/ground conditions
- Sustainability policies and management: waste management; health and safety practice; energy consumption; use of prefabricated components and reclaimed/recycled components; storage facilities; local sourcing of materials; efficiency of ordering materials; site security
- Legislative controls: low energy; carbon dioxide emission and landfill waste reduction; depletion of finite resources; reducing landscape impact; access; health and safety practice
- Sustainability policies: brownfield site development; efficient building services systems; efficient resource use; waste minimisation and recycling; use of prefabricated components and reclaimed/recycled components; encouraging biodiversity; location; mixed/flexible use; integration with surrounding architecture and infrastructure; transport access; user and community needs; impact on community; insulating

Unit 4 — Project planning

- The **procurement objectives** of a project, including: type and from of contract; risk allocation; time; project duration and complexity; economic and political context; funding sources
- The **criteria against which tenders are assessed**: degree of commercial and financial risk; relative costs; timescales; complexity; quality; client constraints (mandatory and advisory)
- The **legal and statutory requirements** affecting procurement such as: common law; contract law; EU Statutes; Codes of Practice and procedures
- Recommending the appropriate **procurement method** (for example; partnering, negotiation, competitive tender, management contracting, construction management, project management) and agreeing and recording the implementation procedures, including tendering process; tender evaluation; award recommendation; contract award
- The **people involved** in the contract such as: client; employer; partners; lead contractors; domestic, nominated sub contractors; management; third parties
- The **criteria for selecting the form of contract** such as: client needs and requirements; form of procurement; degree of commercial and financial risk; relative costs; timescales; complexity; quality; sector practice; project type (for example design, construction or services)
- Identification of required **services** (specialist and support) and resources (human; material; plant and equipment and facilities), assessing their quality and reliability and mechanisms for obtaining them under the required term of appointment
- Confirmation of the **roles and capabilities of the design team**, which will include: aspects of design; health, safety and welfare; statutory and other approvals; procurement; coordination; quality assurance
- Recognising and communicating with **people who have an interest**, which might include: the client; prospective users; contractors (potential, lead and sub); suppliers; partners; regulatory authorities; government agencies; public interest organisations
- Clarifying and communicating the **requirements of the design brief and programme** such as: key decision stages; scheduling and timetabling; delivery of design documentation; statutory approvals; design team meetings; procurement
- Agreeing appropriate **methods for design development, evaluation, modification and updating**, such as: responsibilities; format; content; indexing; distribution; reviewing; resolving conflicts; revising; quality control; storage; security; retrieval; statutory approvals and specifying a method of design monitoring appropriate to the project (this could include exchanging and coordinating information; checks and approvals; meetings and reporting)
- Undertaking necessary and appropriate **design investigation** (for example documentary search; investigative search; field investigation; consultation; physical models; computer models)

Unit 5 — Health and safety

- Clients: customers; owners; users; occupiers
- **Relevant regulations** such as: CDM regulations and Approved Codes of Practice; current health, safety and welfare regulations
- **People who may have an interest** such as: CDM Coordinator; other designers; specialist advisors (e.g. contractors); clients
- Operations and individual activities: construction, construction process and constructing (infrastructure/ structure/ building fabric/ finishes/ services and equipment/ landscape); using; cleaning; maintaining; altering; demolishing
- Hazards such as: falls from height; fire; obstructions; moving vehicles; slips, trips and falls (same height); hit by falling or moving objects; manual handling; health issues; power sources; hazardous substances; trapped by something collapsing or overturning; confined spaces
- Assessing: likelihood of occurrence; severity of harm incurred
- Risks: high; medium; low
- **Developing and modifying**: planning; investigating; analysing; identifying interactions; calculating and testing; selecting materials, components and systems; detailing and specifying
- Designs: infrastructure; structure; building fabric; finishes; services and equipment; landscape
- Measures: control at source; cumulative protection; manage
- Other people involved: contractors; cleaners; maintainers; owners; users

Unit 6 — Regulations

- Methods and techniques for the investigations: documentary search; comparative field research; client and user consultation; discussion with regulatory and statutory bodies and local authorities
- **Requirements and preferences** of regulatory bodies especially relating to: infrastructure issues; land use; physical development; environmental considerations; timetable; financing
- Giving consideration to and advising **People who may have an interest** such as: client; owner; tenant; community and special interest groups; planning authorities; civic and historical societies; regulatory bodies; public enquiries
- Key factors: such as, infrastructures; land use; physical developments; environmental considerations; timetable; financing
- **Consents for**: development and use of land; structures; buildings and highways; health, safety, and welfare; renewal and clearance; grant, loan and subsidy applications
- Giving advanced and subsequent consideration to **options and alternatives** such as: amending the brief; amending the proposal; appealing; abandoning the application
- Advice and applications: which may be, written; graphic; oral

Unit 7 — Concept design development

- Key factors affecting the brief such as; client and user requirements; infrastructures; land use; physical developments; environmental considerations; timetable; financing; procurement
- The **people who have an interest** in the project, which may include: the client and their financial advisers; users; potential contractors, subcontractors and suppliers; potential investors and other funders
- Selecting and analysing relevant data such as: critical design parameters; the scale and sensitivity of the project; validity of any data in any subsequent process of evaluation or process of appeal
- Key Legislation about: design and construction; construction process; end use and consents for: development and use of land; structures; buildings and highways; health, safety, and welfare
- Presenting briefs: which may be, written; graphical; physical; oral
- Providing adequate and accurate **information** including: client requirement; user factors; ergonomic factors; procurement; physical developments; resources; construction; regulation; health, safety and welfare; cost and confirming this with the **people who have an interest** (client and their financial advisers; users; potential contractors, subcontractors and suppliers; potential investors and other funders)

- The key **characteristics of a design programme**, which should include: timetable; phasing; interaction between consultants; critical path; key project stages; interaction with design approval stages; interaction with construction programmes
- Presenting programmes: which may be, written; graphical; physical; oral
- Significant factors such as: client requirements; user factors; ergonomic factors; community factors; procurement factors; physical factors; resource factors; construction factors; regulatory factors; health, safety and welfare; cost factors
- **Significant parameters** such as: visual and spatial; functional performance; technical performance; requirements of relevant legislation and codes; cost
- Use of **existing design approaches** and new sources of information and ideas to select existing and develop innovative design ideas
- **Tests** which give valid and relevant information about the design option, which could include: comparative; consultative; mathematical; statistical and computer modelling; simulation; physical testing; value engineering
- **Decision makers**: clients; users; financial advisers; contractors (potential, lead and sub); suppliers; partners; regulatory authorities; government agencies; public interest organisations
- Presenting: oral; graphical; written; computer based

Unit 8 — Design proposals

- **People who have an interest**: the client; prospective users; contractors (potential, lead and sub); suppliers; partners; investors; regulatory authorities; government agencies; public interest organisations; media
- Implications of modification: cost; programme; performance
- **Presentation methods**: documentary; comparative studies; illustrated oral presentations; computermodelled simulations; public exhibition; including use of appropriate materials, such as: drawings; projections; physical models; computer generated data; photomontage; mock-ups; written reports; cost estimates; programming; cash analysis; outline approvals from regulatory authorities
- Presenting using: oral; graphical; written; computer based

Unit 9 — Technical design development

- Physical factors: geology; exposure; orientation; light levels and solar gain; temperature range and wind speed
- **Technical factors**: materials performance and availability; structural forms; component life; heating and cooling; energy use; surface type and durability; occupancy; health, safety and welfare; fire protection; access; equipment performance; plant availability; human resource availability; transportation; traffic generation; local ecology; emissions and pollution risk
- Tests: data research; comparison with regulations; modelling; calculation
- **People who have an interest**: the client; prospective users; contractors (potential, lead and sub); suppliers; partners; investors; regulatory authorities; government agencies; public interest organisations
- **Presentation methods**: documentary; comparative studies; illustrated oral presentations; computermodelled simulations; public exhibition; including use of appropriate materials, such as: drawings; projections; physical models; computer generated data; photomontage; mock-ups; written reports; cost estimates; programming; cash analysis; outline approvals from regulatory authorities
- Presenting using: oral; graphical; written; computer based

Unit 10 — Design information management

- Information type: design brief; records of earlier stages; surveys; reports; statutory approvals and requirements; cost estimates; standards and codes of practice; technical literature
- Purpose of documents: to obtain consents; procurement; contract; production
- Requirements for controlling: type of measurement; cost; time; quality; methods of production
- **Type of document**: forms of contract; specifications; drawings; bills of quantities; schedules; health and safety plans; accounts; claims; incoming and outgoing drawing and document registers; records of document approval and revision
- Decision makers: client; financial advisers; contractors (lead, potential and sub), suppliers
- Criteria: format; presentation; accuracy; technical content; completeness; referencing; cross referencing and correlation; status
- **Drawings**: location, assembly and components; sketches; working drawings; schedules; presentation drawings
- Purpose of drawings: obtain consents; procurement; contract; production
- Drawing conventions: detailing standards; codes of practice; current industry practice; methods of coordination
- Checks and approvals: format; presentation; accuracy; technical content; completeness; referencing; cross referencing and correlation; status; positioning; shape; dimensions; tolerances; composition; fixing; annotation; symbols and conventions
- Schedules: schedules of rates, works materials, building elements, components and finishes
- Purpose of schedules: obtain consents; procurement; contract; production
- Drawing conventions: detailing standards; codes of practice; current industry practice; methods of coordination
- Checks and approvals: format; presentation; accuracy (including balancing checks); technical content; completeness; referencing; cross referencing and correlation; status

Unit 11 — Specifications

- **Specification type**: original document; National Building Specification (NBS); industry/practice standard; elements, trade, buildings; phase
- Purpose of document: obtain consents; procurement; contract; production
- Information sources: design information; statutory regulations; British Standards; codes of practice; technical literature referenced against: SMM; Common Arrangement; CI/SfB
- Checks and approvals: format; presentation; accuracy (including balancing checks); technical content; completeness; referencing; cross referencing and correlation; status

Unit 12 — Tenders and contracts

- Tender type: open competitive; two stage; 'two envelope'; selected list
- **Type of tender documents**: invitation to tender; form of tender; returns procedure; specifications; drawings; schedules; bills of quantities; health and safety plans
- **Content of tender documents**: technical requirements; contract terms and the conditions; procedures for submitting tenders
- Tenderers: contractors; sub/works/trade contractors; suppliers; consultants
- Statutory requirements: compulsory competitive tendering; European Union requirements, codes of practice and procedure
- Evidence: documentary; references; interview
- Selection criteria for tenderers: quality and delivery record; perceived added value; acceptability of know sub-contracting arrangements; acceptability to client; financial resources; references for previous clients/financers
- Selection criteria for tender: quality; technical viability; timescale; costs; loading and cashflow; perceived added value; comparative criteria; weighting; organisational policies; legal requirements
- Variations, adjustments and corrections: price; quantity; quality; standards; carriage and delivery; completion; maintenance; after sales service; method of payment; terms of payment; contract conditions

- **Contract type**: main contract; sub contract; lump sum; design and consult; schedule based; prime cost based; hybrid; firm price; fluctuating price; labour and materials; labour only; materials supply only; service contracts; design warranties
- **Contract documents**: standard form of contract; contract drawings; specifications; schedules; bills of quantities
- **People involved**: employers; main contractor; domestic and nominated sub contractors; works/trades contractors; third parties
- Statutory requirements: compulsory competitive tendering; European Union requirements, codes of practice and procedure
- Obligations: insurance; bonds; warranties; statutory; financial guarantees
- Amendments and variances: allocation of risks and responsibilities; structure of contract; key instructions; legal factors
- **Documents relating to**: contract requirements (main contract; sub contract; lump sum; design and consult; schedule based; prime cost based; hybrid; firm price; fluctuating price; labour and materials; labour only; materials supply only; service contracts; design warranties); costs; quantity; quality; build progress; as built data
- People involved: client; consultants; contractors (lead and sub); consultants; suppliers; operatives
- **Certificates and notices**: Instruction; Interim Certificate; Statement of Retention; Notification to Subcontractor; Revision to Completion Date; Partial Possession; Practical Completion; Making Good Defects; Final Certificate

Unit 13 — Contract compliance

- Quality standards: statutory requirements; project specifications; British Standards; Codes of Practice; company standards; trade advisory guidance and best practice
- Legal and statutory requirements and responsibilities: Building Control; environmental health; health and safety; fire; utilities regulations; highways; heritage; development licences and building permits; employment practice; byelaws; non-statutory guidelines
- People involved: client; consultants; contractors (lead and sub); consultants; suppliers; operatives
- **Monitoring systems**: visual inspection; comparison with design requirements; comparison with standard documentation; checking manufacturer's documentation; checking delivery notes; sampling and testing; site meetings and reports; records of work against agreed programmes
- **Programmes**: bar charts; network analysis; critical path; line of balance; action lists; method statements; cost forecasts
- **Resources**: staff; plant and equipment; materials and components; finance; time; specialist services; public utility services
- **Opportunities for cost saving**: waste reduction; resource management and logistics; applications of new technology; energy management; recyclable materials; alternative sources, types and quality of materials; plant and labour
- Variations: resource shortages; design problems and constraints; industrial disputes; lack of essential construction information; construction errors; inclement weather
- Corrective action: corrective action; contract claims

Unit 14 — Project completion

- **People involved**: design and construction team; client; consultants; contractors (lead and sub); consultants; suppliers; operatives; site inspectorate; users; managing agents
- **Responsibilities**: environmental sustainability; insurances; security; operations; health and safety; utility supply
- Operational documentation, equipment and services: manuals and guidance materials; plans; health and safety file; operating equipment; security information and equipment; certificates; services
- Improvements from feedback: management procedures; client, design and construction team performance; working arrangements; formal and informal communications; quality control; design and technical appraisal; operational appraisal; performance in use

- Feedback information: approved providers; contract documentation; project documentation; organisational documentation; standards details; specifications; product information
- Methods and sources: project records and documentation; site inspections; scientific research and data; studies of performance in use; meetings; questionnaires; reports
- Types of information and guidance: record drawings; schedules; specifications; contract records; photographs; trade literature; statutory consents; commissioning and test certificates; operating instructions and performance ratings; guarantees; warranties
- **Guidance about**: the design approach; construction and installation details; key references; statutory and other limitations on use; health and safety aspects (including health and safety file); operating installations; maintenance guidance; sources of replacement materials, components and spare parts; security information and equipment; certificates; services
- Features of works and installations: sustainability; health, safety and welfare; structure; materials; finishes; furnishings; fittings; power and light; heating and ventilating; telecommunications; movement of goods and people; special services and equipment; external works; landscaping

Unit 15 — Management of meetings

- Preparation: previous minutes; agenda; support papers; notification; attendance; matters arising
- Information about: location; attendance; meeting type, style and purpose; historical issues; political issues
- **People involved**: client; user; employer; employee; contractor (main and sub); consultants; partners; funders; investors; legal and regulatory authorities; government agencies; public interest organisations; other bodies

Unit 16 — **Professional relationships**

- **Purpose**: sharing experience; issuing instructions; making decisions; increasing understanding; implementing a solution; confrontation; negotiation; dispute resolution; expert testimony
- **People receiving the information**: same and related professions; clients; users; technical and non technical team members; members of the public
- Presenting using: oral; graphical; written; computer based
- **Tests**: site investigation; physical surveys; materials and systems tests; laboratory analysis; examination of compliance with statutory, health and safety, environment and other ruling constraints
- Factors to be taken into account: information and conclusions from previous cases; required outcomes; known and anticipated limitations
- Aids and techniques: identify options; relations between factors; weighed priorities; value utilities; expert systems; decision theory; decision trees; graphical aids
- **Criteria**: client interests; user interests; legal; ethical standards; conflicts of interest; good practice conformity; current information; cost effectiveness; resources; safety; return to operational state; predicted risk; predicted disruption
- Systems to protect interests and compensate: indemnity insurance; guarantees; warranties; contract conditions

Unit 17 — Continuing professional development

- Aims and objectives: preparation for new job or role; intellectual challenge; need for updating; ensuring and evidencing professional competence; compliance with employer and professional requirements; awareness of shortcomings
- **Sources**: national/ industry bodies; education and training providers; in house; media (journals, newspapers, TV/radio, internet); fairs and exhibitions; conferences; professional bodies and regional networks

TCIAT POP Record

Unit 1 — Client and user requirements

- The **needs** such as: the purpose of use; location; occupancy; site access; access to services; access to transport infrastructure; client expectations, options, preferences and aspirations; space standards and requirements for spatial organisation and relationship of functions; health and safety
- The **requirements**, which could be identified by: client and user requirement studies; consultation with interested parties (clients, users, statutory bodies); checklists; questionnaires; standard documentation and advisory material; comparative field research; market research
- Appropriate methods and techniques for investigation: documentary, field research, questionnaires
- The use of investigations sources such as: records, people, authorities, archives
- The use of data such as: photographs, maps, drawings, legal documents, surveys, questionnaires
- Investigation of factors including: historical, conservation, social, visual, environmental, construction, quality cost, time
- Clarification of **opportunities and constraints**, which might include: project type, purpose and location, regulatory, physical and technical, health and safety, quantity, quality, cost, time
- Information presenting by methods such as: written, graphical

Unit 2 — Feasibility studies

- Different **survey types** (land and buildings) and **survey methods** (visual, approximate measured, detailed, graphic and instrumental)
- Existing information: records available
- Utilisation of other **investigation sources** such as photographs; maps and charts; drawings; people; authorities and archives
- Adherence to safe working practice: equipment; clothing; access
- Circumstances and conditions: topography, obstacles, 'live' (in use) conditions
- Equipment: mechanical, optical, electronic
- Presenting: graphical and written

Unit 3 — Health and safety

- **Relevant regulations** such as: CDM regulations and Approved Codes of Practice; current health, safety and welfare regulations
- **People who may have an interest** such as: CDM Coordinator; other designers; specialist advisors (e.g. contractors); clients
- Hazards such as: falls from height; fire; obstructions; moving vehicles; slips, trips and falls (same height); hit by falling or moving objects; manual handling; health issues; power sources; hazardous substances; trapped by something collapsing or overturning; confined spaces
- **Developing and modifying**: planning; investigating; analysing; identifying interactions; calculating and testing; selecting materials, components and systems; detailing and specifying
- Designs: infrastructure; structure; building fabric; finishes; services and equipment; landscape
- Measures: control at source; cumulative protection; manage

Unit 4 — Regulations

- Key factors: such as, infrastructures; land use; physical developments; environmental considerations; timetable; financing
- Legislation: construction; construction process; end use; health, safety and welfare
- **Consents for**: development and use of land; structures; buildings and highways; health, safety, and welfare; renewal and clearance; grant, loan and subsidy applications
- The applications, which may be written; graphic; oral

Unit 5 — Design proposals

- **Presentation methods**: documentary; comparative studies; illustrated oral presentations; computermodelled simulations; public exhibition; including use of appropriate **materials, such as**: drawings; projections; physical models; computer generated data; photomontage; mock-ups; written reports
- Justifying by using: sketches, drawings and projections; physical models; computer generated data; diagrams; written reports; cost estimates; programming outline approvals from regulatory authorities
- **People who have an interest**: the client; prospective users; contractors (potential, lead and sub); suppliers; partners; investors; regulatory authorities; government agencies; public interest organisations; media
- Presenting using: oral; graphical; written; computer based

Unit 6 — Technical design development

- Construction and installation requirements: contained in the design brief
- Physical factors: geology; exposure; orientation; light levels and solar gain; temperature range and wind speed
- **Technical factors**: materials performance and availability; structural forms; component life; heating and cooling; energy use; surface type and durability; occupancy; health, safety and welfare; fire protection; access; equipment performance; plant availability; human resource availability; transportation; traffic generation; local ecology; emissions and pollution risk
- Products: raw materials; manufactured materials; components and systems
- Standards: British Standards and Codes, official certificates; guidance publications
- Identification by: standard lists and procedures; investigative research
- Data: identified construction criteria; existing design solutions; potential conceptual solutions
- Tests: data research; comparison with regulations; modelling; calculation
- Presenting using: oral; graphical; written; computer based

Unit 7 — Design information management

- Requirements for controlling: type of measurement; cost; time; quality; methods of production
- **Type of document**: forms of contract; specifications; drawings; bills of quantities; schedules; health and safety plans; accounts; claims; incoming and outgoing drawing and document registers; records of document approval and revision
- Purpose of documents: to obtain consents; procurement; contract; production
- Scope: number; type; format; size
- **Registers and records**: incoming and outgoing drawing and document registers; records of document approval and revision
- Checks and approvals: format; presentation; accuracy; technical content; completeness; referencing; cross referencing and correlation; status; positioning; shape; dimensions; tolerances; composition; fixing; annotation; symbols and conventions
- Drawings: location, assembly and components; sketches; working drawings; schedules; presentation drawings
- Drawing conventions: detailing standards; codes of practice; current industry practice; methods of coordination
- Schedules: schedules of rates, works materials, building elements, components and finishes
- Type of prescriptive specification: original document; NBS; industry/practice standards
- **Source information**: design information; statutory regulations; British Standards; codes of practice; technical literature
- Referenced against: common arrangement; CI/StB
- The information: approved providers; project documents; drawings; specifications; technical and product references
- Use of information: technical reference; current record; archive
- Classification and types of information: project file; organisational system; alphanumeric; CI/StB; common arrangement files; microfiche; electronic

Unit 8 — Tenders and contracts

- Tender type: open competitive; two stage; 'two envelope'; selected list
- **Type of tender documents**: invitation to tender; form of tender; returns procedure; specifications; drawings; schedules; bills of quantities; health and safety plans
- **Content of tender documents**: technical requirements; contract terms and the conditions; procedures for submitting tenders
- Tenderers: contractors; sub/works/trade contractors; suppliers; consultants
- Variations, adjustments and corrections: price; quantity; quality; standards; carriage and delivery; completion; maintenance; after sales service; method of payment; terms of payment; contract conditions
- Amendments: extension to tender period; changes resulting from queries
- Selection criteria for tenderers: quality and delivery record; perceived added value; acceptability of known sub-contracting arrangements; acceptability to client; financial resources; references for previous clients/financers
- Selection criteria for tender: quality; technical viability; timescale; costs; loading and cashflow; perceived added value; comparative criteria; weighting; organisational policies; legal requirements

Unit 9 — Contract compliance

- Quality standards: statutory requirements; project specifications; British Standards; Codes of Practice; company standards; trade advisory guidance and best practice
- **Monitoring systems**: visual inspection; comparison with design requirements; comparison with standard documentation; checking manufacturer's documentation; checking delivery notes; sampling and testing; site meetings and reports; records of work against agreed programmes
- Legal and statutory requirements and responsibilities: Building Control; environmental health; health and safety; fire; utilities regulations; highways; heritage; development licences and building permits; employment practice; byelaws; non-statutory guidelines
- Corrective action: corrective action; restore compliance

Unit 10 — **Professional communications**

- Types of meetings: involving people within or without your organisation
- Obtaining information: dialogue; questioning others
- Technical information and advice: issuing instructions; making decisions; increasing others' understanding; negotiation
- Presenting: orally; in writing; graphically
- **People receiving information**: same and related occupations; clients, technical and non-technical people; craft and manual workers
- Giving technical instruction: critical points; clear language
- **Technical recommendations**: implications of alternatives that have been considered; descriptions of information sources consulted; analysis techniques applied; criteria used for drawing conclusions
- Information sources: experience and practice; information systems; other people
- Analysing problems: information and conclusions from and comparisons with previous cases; required outcomes; known and anticipated limitations
- Aids and techniques: identify options; relationship between factors; graphical aids
- **Criteria**: interests of the client; legal; conformity with recognised good practice; cost-effectiveness; resources; safety; predicted risk
- Ethical standards and good practice: codes of practice; statute law, duty of care
- **Conflicts of interest**: offers resulting in adverse conditions to individuals or the community; offers involving the financial interest of the practitioner

Unit 11 — Continuing professional development

• Aims and objectives: preparation for new job or role; intellectual challenge; need for updating; ensuring and evidencing professional competence; compliance with employer and professional requirements; awareness of shortcomings

- **Personal development**: maintenance of existing competence; improvement of existing competence; development of new competence
- **Sources**: national/industry bodies; education and training providers; in house; media (journals, newspapers, TV/radio, internet); fairs and exhibitions; conferences; professional bodies and regional networks
- **Standards of competence**: job descriptions; professional institution requirements; industry national standards
- Development plan: priorities; target dates; development activities
- Development activities: formal courses; research; work experience; personal study

Notes

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