Programme Design and Mapping Guidance

CIAT

Programme design and mapping

Purpose

This guidance has been produced to assist Programme designers of Honours or Masters degree level qualifications in Architectural Technology or related subjects when considering relevant and appropriate Programme content.

This guidance document sets out:

- **the mandatory threshold standards that all graduates from Accredited Honours and Masters degree level qualifications must meet;**

- **guidance on indicative content for the key subjects of design, technology, management and practice at Honours and Masters level, and;**

- **mapping templates for Honours and Masters Programmes respectively**

To attain CIAT Accreditation, including degree or graduate apprenticeships, educational establishments are required to refer to the Quality Assurance Agency's (QAA) Subject Benchmark Statement (SBS) for Architectural Technology 2022 and map their Programmes against the mandatory threshold standards outlined in the SBS when designing, constructing and sequencing the Programme's curriculum and content.

The SBS has been purposely written in a non-prescriptive format to provide Programme designers with the freedom to customise their Programmes according to its unique selling point(s) and the expertise within the educational establishment. This approach allows for the necessary flexibility and agility to respond to the fast-changing professional and academic discipline of Architectural Technology.

The SBS also considers how practice within the discipline addresses wider social goals, which should be addressed within the curriculum, including:

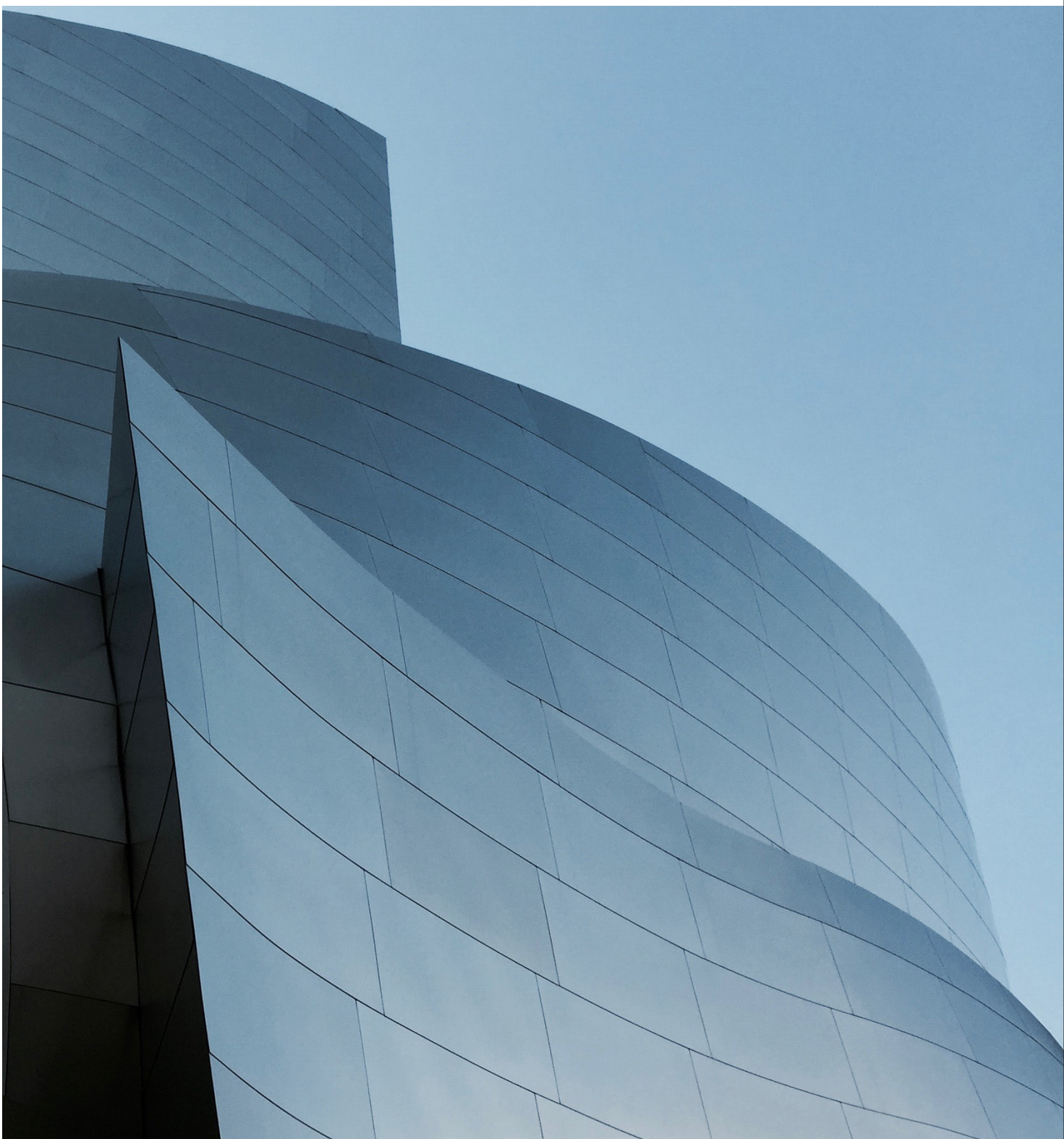
- equality, diversity, inclusion, access/accessibility;
- education for sustainable development, and;
- employability, enterprise and entrepreneurship.

A note on differing educational levels and the QAA SBS

It is expected that educational establishments from different nations will reference their levels according to their own national qualification frameworks. For example, England, Northern Ireland and Wales will refer to Honours degrees as level 6 qualifications, whereas Scotland will refer to them as level 10. Similarly, Masters level qualifications will be referred to as level 7 in England, Northern Ireland and Wales, and level 11 in Scotland. In the Republic of Ireland, Honours degrees are referred to as level 8 qualifications whereas Masters qualifications are level 9.

Overseas qualifications will be compared using UK ENIC – the UK National Information Centre for the recognition and evaluation of international qualifications to ensure that they are equivalent to Honours or Masters level.

Honours degree level mandatory threshold standards



All holders of a CIAT-Accredited Honours degree level qualification must be able to demonstrate knowledge, understanding, application, analysis, evaluation and creativity to differing extents, relative to:

1) context, which includes the social, technological, environmental, economic, political, legal and ethical factors that inform and influence the discipline and practice of architectural technology at local, regional and global levels;

2) professional behaviours, conduct and ethics, architectural practice, design leadership and management functions (for example, principal/ lead designer, design management, information management), procurement methods and contract administration;

3) technologies and interrelation of building elements, systems, components, materials and methods used in the construction and adaptation of different building typologies, and how these contribute to the functions of buildings;

4) architectural and technological design principles, science (that is, fundamentals of building physics and pathology) and values that drive approaches taken in works to new and existing buildings (for example, conservation, maintenance, renovation and adaptation);

5) designing holistically, including the ability to detail the design from first principles, for production, performance, sustainability and better environmental performance and in response to regulatory requirements, health and safety, wellbeing and advances in sustainable technologies;

6) client, user and stakeholder needs, analysing and interpreting the nature of a development, and evaluating context to determine the responsive scope of a project;

7) health and safety requirements within a regulatory system, identifying, analysing, and evaluating hazards and risks when generating solutions to ensure health, safety, welfare and security during the life cycles of buildings, including compliance and enforcement;

8) creating resilient, sustainable and inclusive design solutions as whole systems and in detail in response to varied situations, which are informed by current understandings within the discipline and wider context, including climate change;

9) current philosophies, processes and technologies for the modelling, communication, and management of information and to apply them in a collaborative working environment to support data-driven decision-making;

10) current and emerging topics, technologies and practices (including regulations and standards) that inform the architectural technology discipline through self-reflection, identification of personal development needs, and action planning to maintain awareness and currency, and to accommodate specialisation in light of new and emerging professional environmentssolutions as whole systems and in detail in response to varied situations, which are informed by current understandings within the discipline and wider context, including climate change.

Indicative subject content (Honours degree level example)

The following example of subject content is based upon the QAA SBS for Architectural Technology 2022, pertaining to knowledge criteria for graduates of Honours degree level qualifications contained within the four key subject areas of design, technology, management and practice.

It is expected that an Architectural Technology (or related) Honours degree level Programme with the curriculum and content as listed below would normally satisfy CIAT's Accreditation requirements.

Please note that the subject content is indicative, and it is not implied that each subject area is equally weighted either in content, academic credit or level or in each stage of learning. Each educational establishment has the freedom to determine subjects, subject groupings, subject linkages, sequencing of learning, mode of delivery teaching, learning and assessment methods.

Design

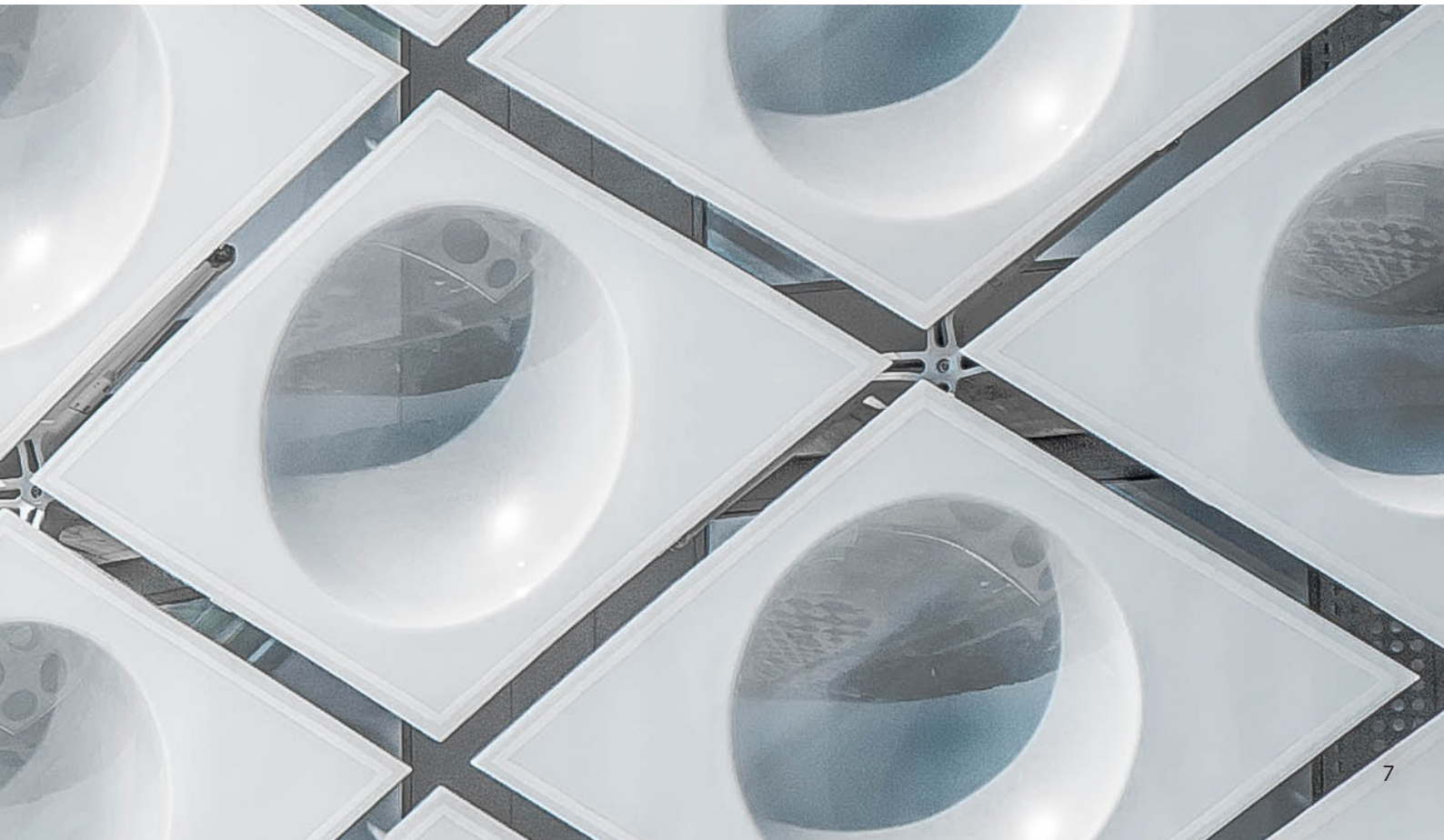
Indicative content (Honours level)

- Client requirements and user factors; challenges and preferences to develop design brief and proposals;
- Design related to the technology of architecture (forms, functions, concepts, and contexts) nationally and internationally factors used to establish the fundamental link between design and the technological, environmental, cultural, ethical, economic, well being and social inclusion parameters;
- History and context, design of buildings (new build, adaptations, refurbishment, conservation);
- Sustainable and inclusive design projects, user and market needs, cost, quality, environmental impact, safety, appearance, fitness for purpose including accessibility and inclusive design, life cycle, maintenance and refurbishment;
- Realisation of design into built form through the generation of detailed technical solutions linked to design projects, and;
- Presentation of Architectural Technology information using computer-aided design, three-dimensional modelling, information and communication technology and building information modelling.

Technology

Indicative content (Honours level)

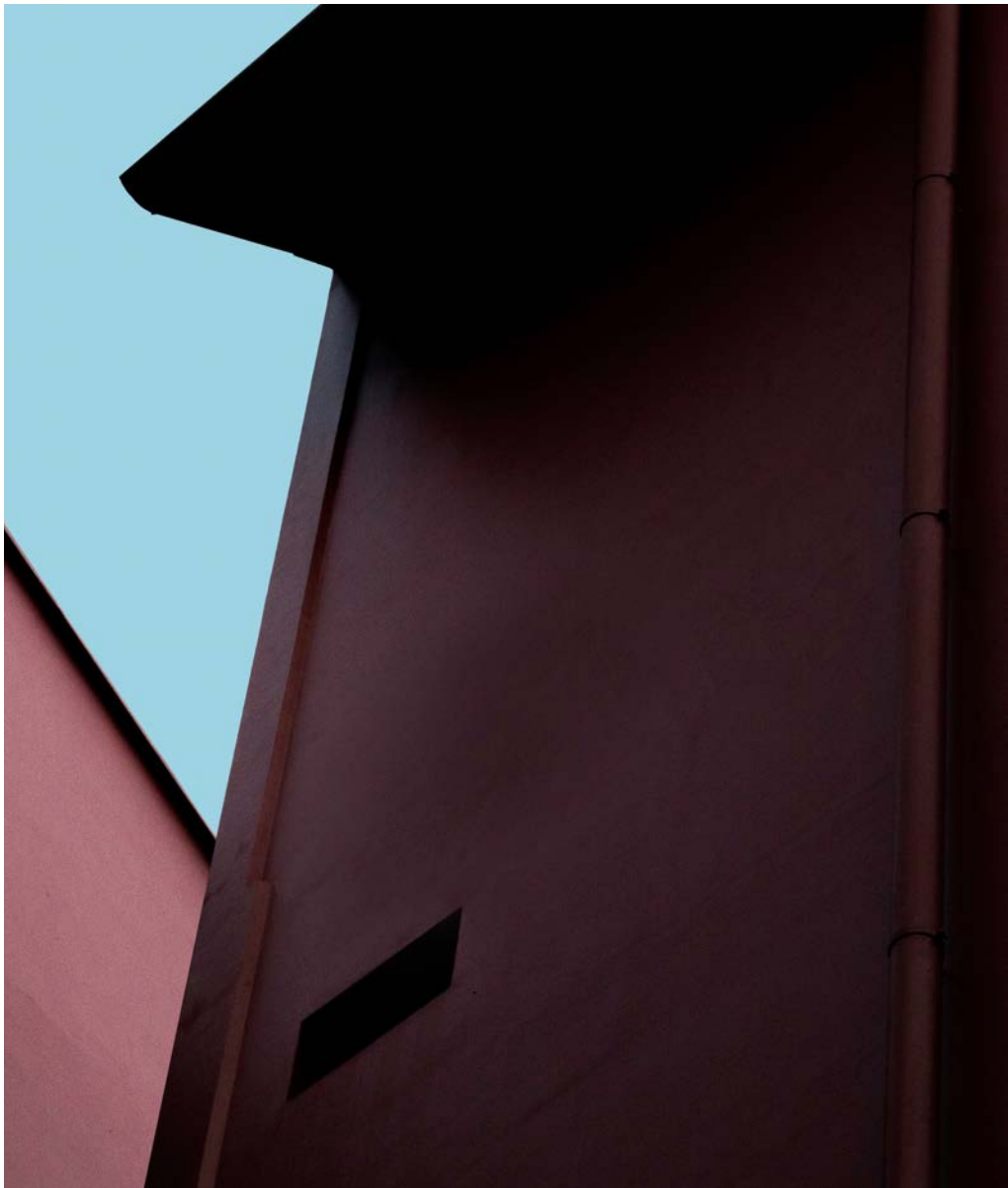
- Technological theories that inform and influence the practice of Architectural Technology;
- Science and engineering of materials and components related to design for production and performance, tectonics, design and technical guides, material certification;
- Building services engineering, environmental science and structural engineering;
- Building elements, components, systems and methods used f or the construction and adaptation of different building typologies and how these contribute to the functions of buildings;
- Building performance appraisal, investigation, diagnostics and non-destructive testing including the ongoing processes of evaluation, development, redevelopment and maintenance;
- Design and construction process and systems efficiency, effectiveness, environmental sustainability and environmental impact, blending creativity and scientific innovation;
- Utilisation of technical and performance requirements and methods for specifying materials and components, and;
- Responsible sourcing of products, materials and systems that minimises the impact of the building on the environment and natural resources.



Management

Indicative content (Honours level)

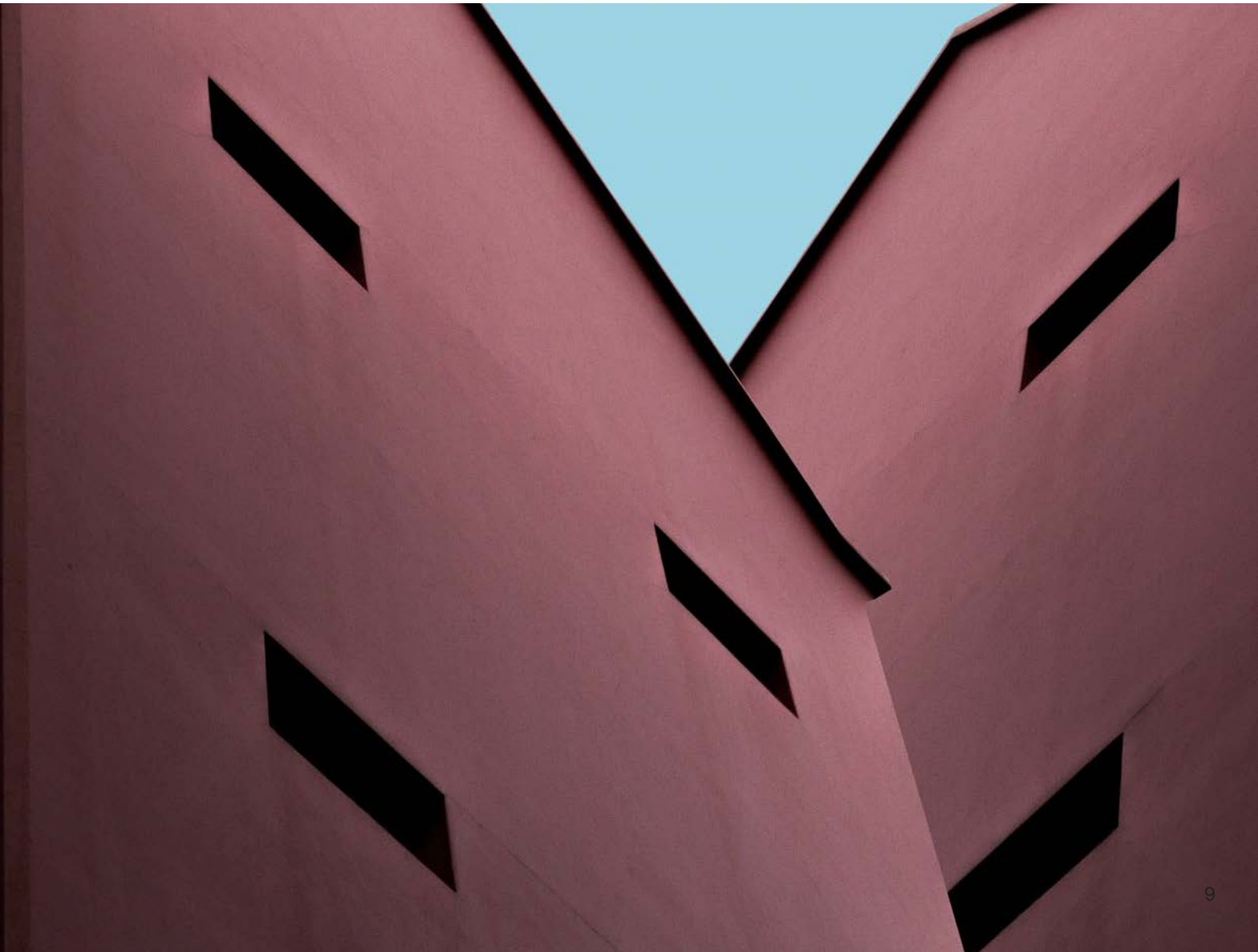
- Project and design management, procurement, contract management;
- Design and construction process and systems;
- New and emerging technologies, processes, modelling, knowledge and information management, management, enterprise and infrastructure architecture;
- Acting with honesty and integrity, and respecting the values and needs of a diverse population whose perceptions and understanding change and evolve;
- Clear communication of design, social, and ethical values of inclusive design, design articulation, technical solutions and end-user experience to a range of audiences and stakeholders, and;
- Business and organisation structures, continuous improvement and quality assurance techniques.



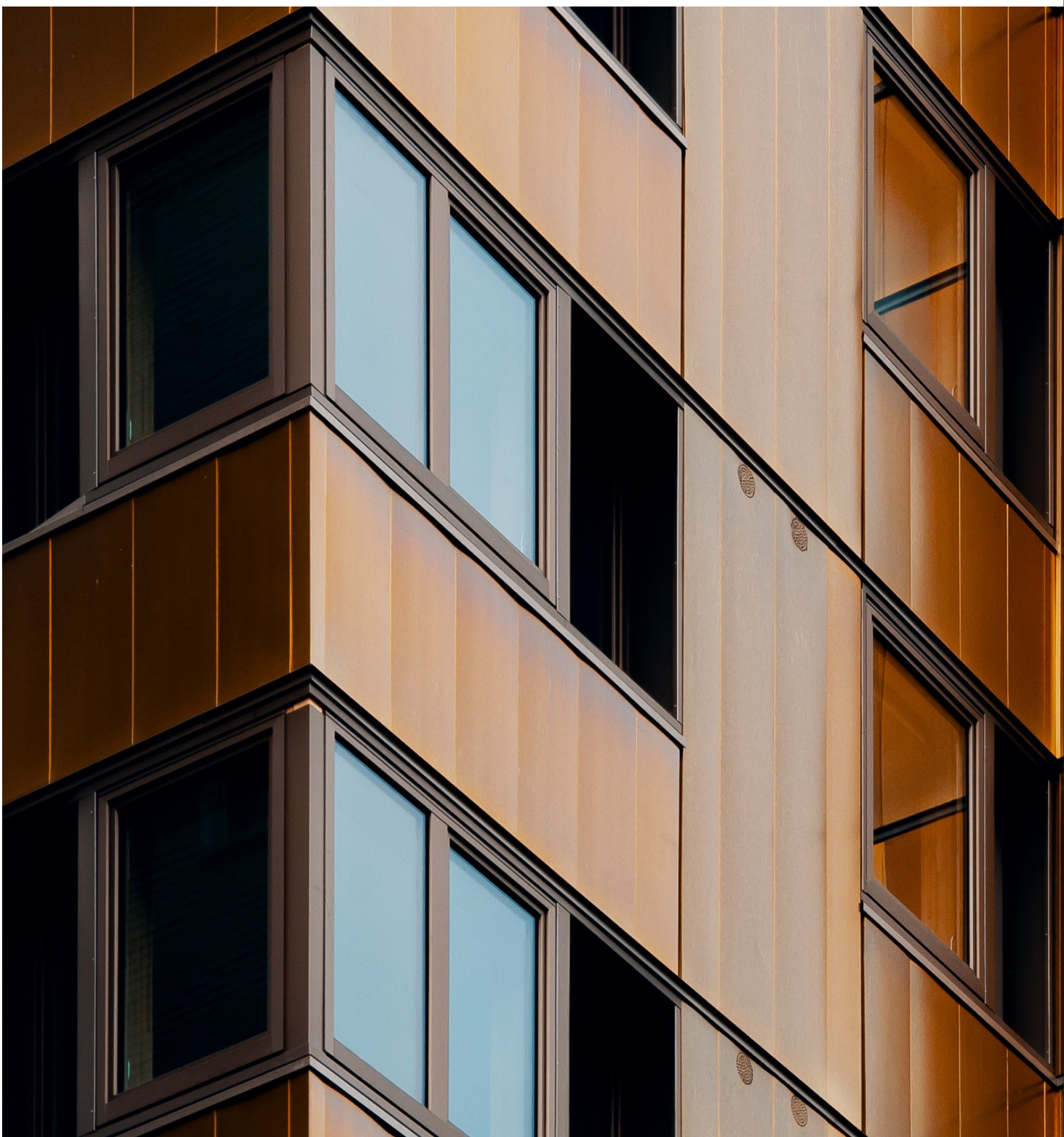
Practice

Indicative content (Honours level)

- Legal and regulatory requirements for sustainable and inclusive buildings including building and planning regulations, construction and health and safety;
- Architectural Technology in relation to practice and employment including clients, professions, collaboration, partnering professional services, indemnity insurance, litigation;
- Hazards and risks, safe systems of work;
- Adding economic and social value to society;
- Agility and responsiveness to changing environments and offering an enhanced impact on projects, and;
- Working independently and as an ethical member of a team, critical thinker and with structured personal development (including leadership, ethics, enterprise, management functions).

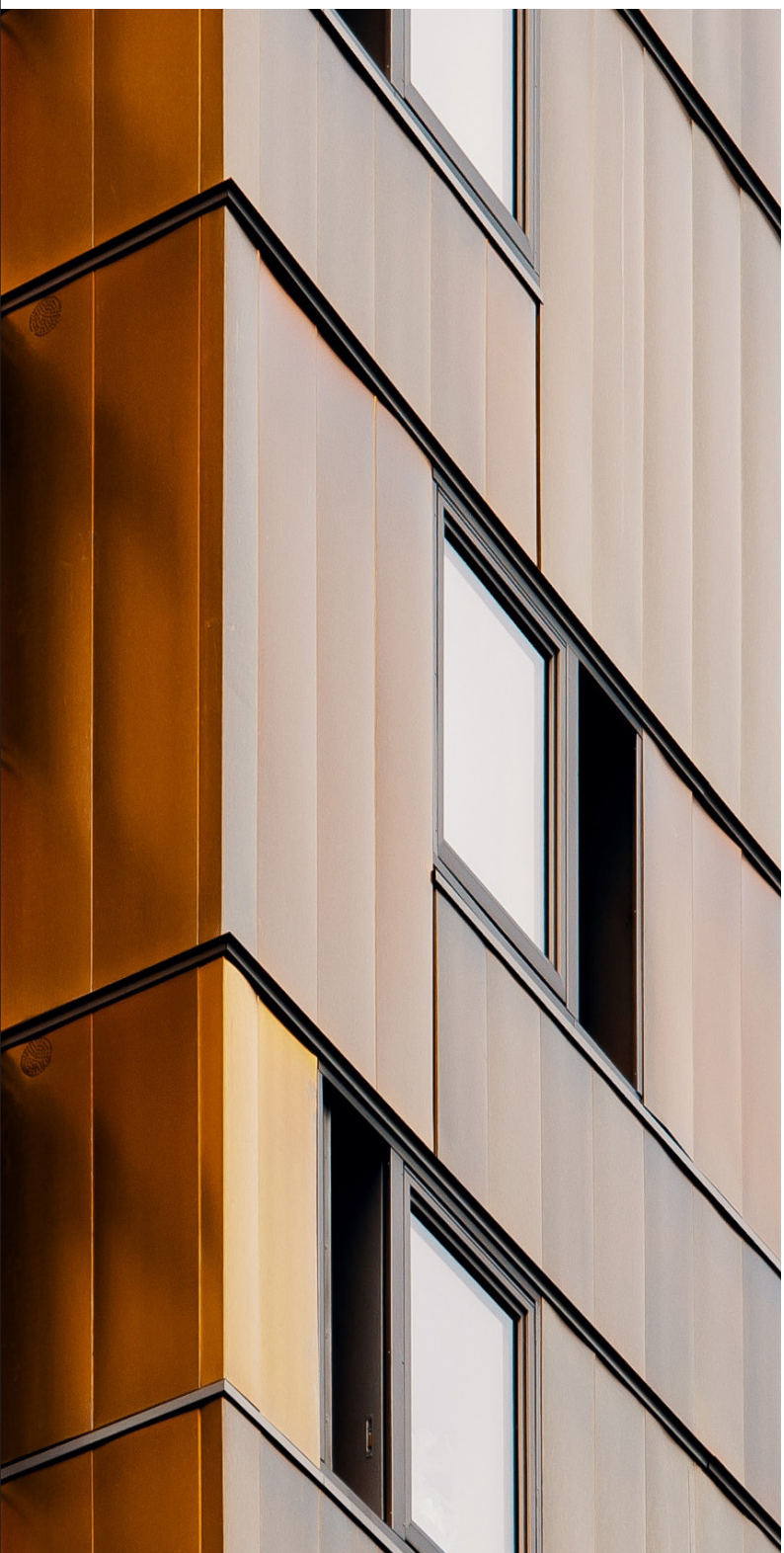


Masters degree level mandatory threshold standards



Normally, a systematic and broad understanding of the concepts of Architectural Technology is assumed prior to a student undertaking a CIAT-Accredited Masters Programme.

Please refer to the above section which sets out the minimum benchmark standards for CIAT-Accredited Honours degree level Programmes to better understand how CIAT Accredited Masters degrees should further prepare students.



All holders of a CIAT-Accredited Masters degree level qualification must be able to demonstrate:

1) a critical awareness of the historical and contemporary context, and the underpinning social, technological, environmental, economic, political, legal and ethical theories that inform and influence the practice of architectural technology;

2) a systematic understanding and critical awareness of current and emerging trends in architectural technology such as, but not limited to, digital construction;

3) evaluation of appropriate methodologies for dealing with complex problems;

4) independent analysis of complex concepts applied in the generation of critical discussion by working with some originality:

5) completion of a major piece of design work, or substantial research project, informed by thorough understandings of the discipline.

Design

Indicative content (Masters level)

- Critical evaluation of historical and contemporary, national and international challenges and preferences affecting the development of design brief and proposals;
- Informed, evidence-based application of the social, ethical, cultural, technological, environmental, economic, political, legal factors that relate to the technology of architecture;
- Resilient, sustainable and inclusive design projects including systematic review or case studies, user and market needs, cost, quality, environmental impact, safety, reliability, appearance, fitness for purpose including accessibility and inclusive design, life cycle, maintenance and refurbishment;
- Innovative approaches to design and construction process, advanced solutions for achieving system efficiency, critical evaluation of economic and environmental sustainability and environmental impact
- Realisation of design into built form through the generation of accurate and effective detailed design solutions linked to design projects, and;
- Presentation of Architectural Technology information confidently and competently, and clear articulation of arguments and communication to specialist and non-specialist audiences using a wide range of written, oral and visual media.

Technology

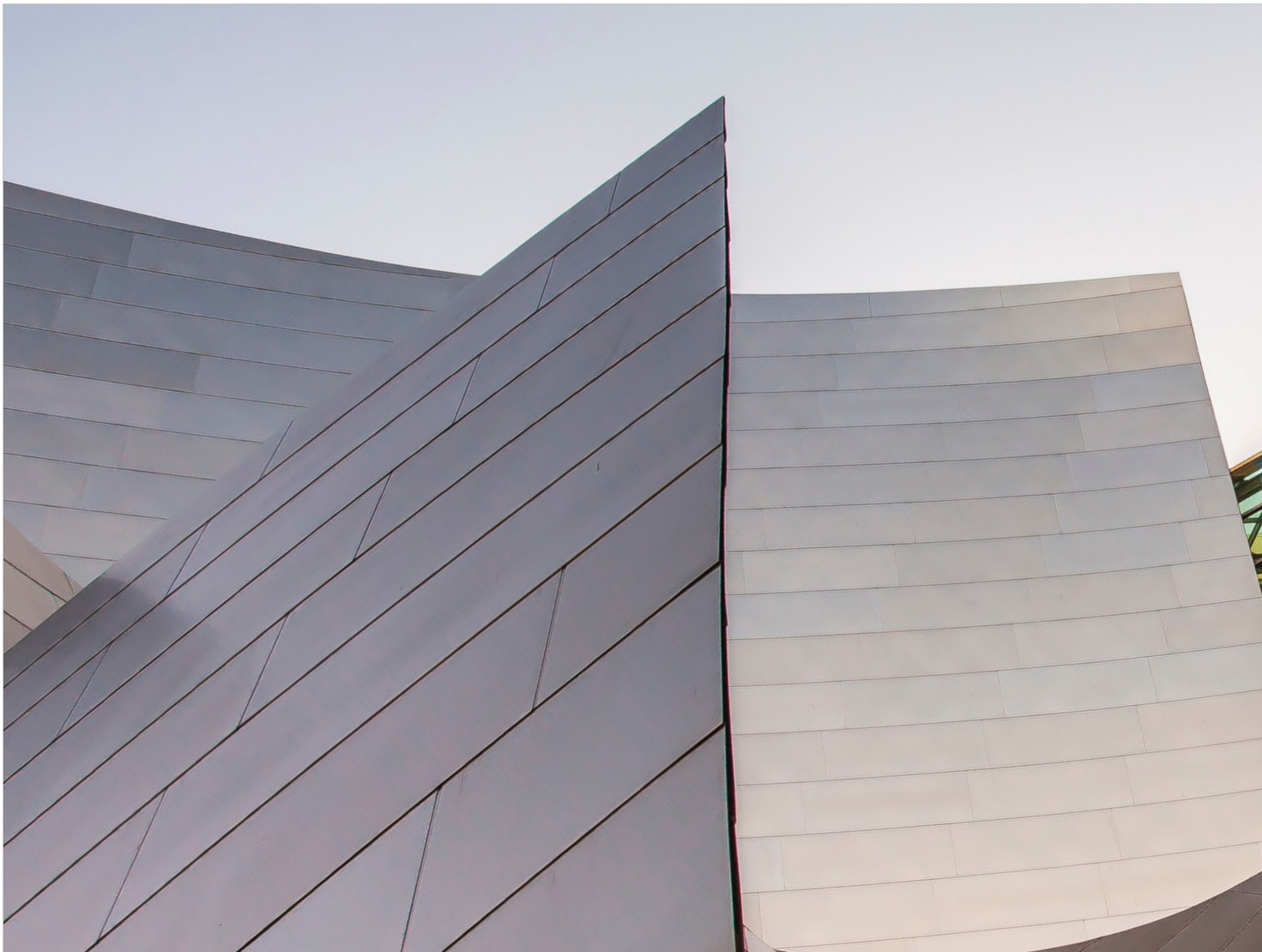
Indicative content (Masters level)

- Critical evaluation of technological theories that inform and influence the practice of Architectural Technology;
- Advanced, effective application of science and engineering of materials and components related to the design for production and performance of simple and complex buildings;
- Critical appraisal of the application of building services engineering, environmental science and structural engineering in familiar and unfamiliar context;
- Evidence informed selection of building elements, components, systems and methods used for the construction and adaptation of different building typologies and how these contribute to the functions of buildings and appropriate methodologies for dealing with complex problems;
- Building performance appraisal, investigation, diagnostics and non-destructive testing including the ongoing processes of evaluation, development, redevelopment and maintenance;
- Utilisation of current technical and performance requirements and methods for specifying materials and components, and;
- Responsible sourcing and lifecycle of materials, products and systems.

Management

Indicative content (Masters level)

- Project and design management, procurement, contract management, strategies and processes that deliver value for clients;
- Critical appraisal of new and emerging technologies, processes, modelling, knowledge and information management, management, enterprise and infrastructure architecture;
- Business and organisation structures, continuous improvement and quality assurance techniques;
- Expert and effective use of project management tools and industry software in planning and management of projects, and;
- Critical appraisal of project management processes, management of innovation, change and risk management.



Practice

Indicative content (Masters level)

- Independent and critical synthesis and evaluation of complete information, ideas, and data relating to a wide range of factors affecting Architectural Technology practice including political, design, technological, environmental, ethical, cultural, economic and social issues;
- Systematic understanding of the Architectural Technology discipline in the context of design, construction, management and professional practice;
- Working independently and as an ethical member of a team, exercising initiative and personal responsibility, demonstrating the ability to make decisions in complex situations and meeting tight deadlines;
- Conduct a substantial independent, Architectural Technology-specific investigation, making effective use of appropriate research methodologies and data collection techniques;
- Interrogate primary sources and secondary data at the forefront of the professional discipline to investigate a chosen topic and justify conclusions, and;
- Communicate complex ideas and information effectively, using academic protocols and conventions.

Indicative mapping template

The below templates are indicative, and can be used to map the Programmes against the Honours/ Masters(as appropriate) mandatory threshold standards.

Programme Teams must also outline how their curriculum addresses wider social goals, including:

- equality, diversity, inclusion, access/accessibility;
- education for sustainable development, and;
- employability, enterprise and entrepreneurship.

It may be more appropriate to include this as part of the narrative within formal Accreditation submissions. Please refer to the relevant Accreditation Guidelines for more information.

Honours degree level Programmes

Mandatory Threshold Standards	Module Level
1. context, which includes the social, technological, environmental, economic, political, legal and ethical factors that inform and influence the discipline and practice of architectural technology at local, regional and global levels	
2. architectural and technological design principles, science (that is, fundamentals of building physics and pathology) and values that drive approaches taken in works to new and existing buildings (for example, conservation, maintenance, renovation and adaptation)	
3. designing holistically, including the ability to detail the design from first principles, for production, performance, sustainability and better environmental performance and in response to regulatory requirements, health and safety, wellbeing and advances in sustainable technologies	
4. creating resilient, sustainable and inclusive design solutions as whole systems and in detail in response to varied situations, which are informed by current understandings within the discipline and wider context, including climate change	
5. technologies and interrelation of building elements, systems, components, materials and methods used in the construction and adaptation of different building typologies, and how these contribute to the functions of buildings	
6. current philosophies, processes and technologies for the modelling, communication, and management of information and to apply them in a collaborative working environment to support data-driven decision-making	
7. professional behaviours, conduct and ethics, architectural practice, design leadership and management functions (for example, principal/lead designer, design management, information management), procurement methods and contract administration	
8. client, user and stakeholder needs, analysing and interpreting the nature of a development, and evaluating context to determine the responsive scope of a project.	
9. health and safety requirements within a regulatory system, identifying, analysing, and evaluating hazards and risks when generating solutions to ensure health, safety, welfare and security during the life cycles of buildings, including compliance and enforcement	
10. current and emerging topics, technologies and practices (including regulations and standards) that inform the architectural technology discipline through self-reflection, identification of personal development needs, and action planning to maintain awareness and currency, and to accommodate specialisation in light of new and emerging professional environments.	
equality, diversity, inclusion, access/accessibility	
education for sustainable development	
employability, enterprise and entrepreneurship	

Masters degree level Programmes

*Normally, a systematic and broad understanding of the concepts of Architectural Technology is assumed prior to a student undertaking a CIAT-Accredited Masters degree level Programme. Prior to creating or revising postgraduate curriculum, please refer to the Honours standards which sets out the minimum benchmark standards for CIAT-Accredited Honours degree level Programmes.

Mandatory Threshold Standards	Module Level
1. critical awareness of the historical and contemporary context, and the underpinning social, technological, environmental, economic, political, legal and ethical theories that inform and influence the practice of architectural technology	
2. systematic understanding and critical awareness of current and emerging trends in architectural technology such as, but not limited to, digital construction	
3. evaluation of appropriate methodologies for dealing with complex problems	
4. completion of a major piece of design work, or substantial research project, informed by thorough understandings of the discipline.	
5. independent analysis of complex concepts applied in the generation of critical discussion by working with some originality	
equality, diversity, inclusion, access/accessibility	
education for sustainable development	
employability, enterprise and entrepreneurship	

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