Written submission: Consultation on the draft Leaving Certificate Construction Technology specification

NCCA is redeveloping Leaving Certificate Construction Technology. The aim of this consultation is to obtain the open and honest views of all stakeholders: students, teachers, parents, and other interested parties. The feedback gained from the consultation will inform the work of the development group in preparing the final specification.

NCCA would greatly appreciate your feedback on the draft specification which can be found here: Draft Leaving Certificate Construction Technology specification

When providing feedback, observations or comments, please reference the specific section and / or relevant learning outcomes.

The closing date for this consultation is 2nd May 2025 at 5pm. Please email your written submission to scconsultations@ncca.ie.

Data protection and open data section

NCCA is committed to protecting your privacy and does not collect any personal information about you through this written submission, other than information that you provide by your own consent. Where a respondent selects 'yes' to the question: *Are you consenting to be listed as a respondent to this consultation*, respondents are consenting to having their name / organisation's name published in the final report as respondents to the consultation.

Where a respondent selects 'yes' to the question: *Are you consenting for your submission to be published*, respondents are consenting to having their submission published on ncca.ie.

Any personal information you volunteer to the NCCA will be respected and NCCA will apply the highest standards of security and confidentiality in accordance with GDPR (2016) and the Data Protection Acts (1998 - 2018). Further information on the NCCA's Data Protection Policy can be found at https://ncca.ie/en/legal-disclaimer-and-data-protection/.

NCCA, as a public body operating under the Open Data and Public Service Information Directive (2021), is required to publish publicly funded research. In accordance with this Directive, any data from this will be anonymised and aggregated and only made available after the final report is published. This is expected to be in June 20254. All open data is made available alongside the report itself on the website www.ncca.ie

NCCA may use the data you provide in the form of quotations. Where this happens, the quote will be anonymised.

Respondent's details

What organisation are you submitting on behalf of?

Association of Secondary Teachers, Ireland (ASTI)

Are you consenting to be listed as a respondent to this consultation?

- o **Yes** ✓
- o No

If yes, please enter the name you wish to have published in the final report.

Association of Secondary Teachers, Ireland (ASTI)

Are you consenting to have the submission published on ncca.ie?

- o **Yes** ✓
- o No

Rationale, Aim, and Key Competencies [Pages 2, 3 and 5]

Rationale: The rationale (Page 2) outlines the nature of Construction Technology and the role and importance of Construction Technology in realising the purpose and vision of senior cycle.

Aim: The Aim (Page 3) outlines the over-arching purpose of the subject and the relevance and expected impact of the subject on student learning.

In your opinion, do the rationale and aim capture the overarching purpose and nature of Construction Technology; the importance of the subject in realising the vision of senior cycle and the relevance and expected impact of this subject on student learning. Please provide specific feedback / observations / comments.

Rationale

We note that LC Construction Studies seems to now be titled "Leaving Certificate Construction Technology". The rationale is detailed providing a good description of what Learning is envisaged. Environmental responsibility and sustainability are noted, as are craft practices with an emphasis on design. *"instils a sense of environmental responsibility in students, encouraging eco-friendly decision-making, sustainable building and craft practices, and a strong emphasis on design."*

The Classroom experience is described in terms of a " *hands-on approach nurtures critical thinking, problem-solving, creativity, craft skills, and communication abilities, empowering students to tackle real-world challenges and shape a sustainable future."*

We welcome the reference to future relevance in society and the workplace such as apprenticeships etc. *"the subject prepares students for a range of diverse futures, including apprenticeships, further and higher education, and STEM-related professions. Through a balanced curriculum that integrates traditional craft skills with modern technologies"*

Aims

We agree that Construction Technology aim is to *"provide students with an experience that develops their interest in and enthusiasm for learning relating to the built environment."* The aims are far reaching, and to what depth the entirety of the aims will have actual time to be realised is another matter, but overall the aims are representative of the course. It is good to see that the value placed on craft skills and knowledge are included in the aims.

Key Competencies: Key competencies is an umbrella term which refers to the knowledge, skills, values and dispositions students develop in an integrated way during senior cycle. These competencies are linked and can be combined; can improve students' overall learning; can help students and teachers to make

meaningful connections between and across different areas of learning; and are important across the curriculum.

The draft specification sets out examples of how key competencies can be developed in Leaving Certificate Construction Technology on pages [Pages 7 and 8]

In your opinion, does this section effectively capture the development of student key competencies in Leaving Certificate Construction Technology? Please provide specific feedback / observations / comments.

Defining and Assessing Competencies: One of the significant challenges of a competency-based approach is defining competencies accurately and developing effective and reliable methods to assess their mastery. Competency and Learning Outcomes based approach can be vague and unclear as evidenced in the Junior Cycle. This can be more complex than assessing content knowledge through traditional exams. Ensuring consistency in evaluation across different teachers and schools is crucial.

Need for Structured Time and Training: Teachers require dedicated time for planning, collaboration, and training to effectively implement the new methodologies associated with a competency-based approach. Many respondents in various ASTI survey reports emphasised the necessity of "more training for teachers to enhance pedagogical performance" and increased allocation of *time* for planning and review.

Increased Workload and Insufficient Resources: Many schools feel that they currently are already stretched too thin to manage the increased workload associated with the reforms. There's a perceived need for additional senior leadership capacity to effectively drive change. Furthermore, concerns exist regarding inadequate teacher allocation to cater to the diverse needs of senior cycle students and offer a broad curriculum, especially in smaller schools.

In conclusion, while the "Key Competencies" approach holds promise for developing well-rounded and capable students, its success hinges on addressing these associated problems through adequate resourcing, comprehensive teacher training and support, allocation of dedicated time to teachers, clear guidance and materials, and careful consideration of equity and assessment strategies.

"Students can and should be helped to develop their key competencies irrespective of their past or present background, circumstances or experiences and should have many opportunities to make their key competencies visible." This will very much depend on a fair, transparent and equitable system across all schools. Some schools have much better facilities and equipment than others including space. This must be addressed or equal opportunity will not be afforded to all our students.

In terms of AAC's the following competency is noteworthy.

"***Managing learning and Self*** *is fostered as students engage in design-based activities where they reflect on their progress and set goals to support personal growth and ensure project success. They make informed choices and <u>take responsibility for their learning</u>, adapting strategies to support their progress in Construction Technology. By evaluating and reflecting on their work, students build a sense of self-efficacy, which helps them pursue their goals with confidence, driving their growth and success in the subject while developing valuable skills for life.*"

This would be beneficial in terms of students taking the responsibility to self-certify that their work is entirely their own work, with no outside influence or generative AI used (unless acknowledged). This would be important in the Project Portfolio for example. It is vital that teachers are not expected to certify work – especially AI generated work submitted by students that was not completed in the Classroom under their supervision.

Strands of study and learning outcomes [Page 9-23]

Course overview: The course overview sets out the knowledge, skills, values and dispositions for students in four strands. The specification emphasises a non-linear, integrated approach to learning across the strands.
The details of the strands are described on pages [Pages 9 and 10] of the specification.

In your opinion, does the structure illustrate the connected nature of the strands and the development of student knowledge, skills, values and dispositions in an appropriate way? Please provide specific feedback / observations / comments.

Strands	Learning Outcomes
1. The Built Environment	19 Learning Outcomes
2. Design, Craft Skills, and Materials	20 Learning Outcomes
3. Building Fabric	18 Learning Outcomes
4. Services and Control Technology	26 Learning Outcomes
Total : *4 Strands*	*83 Learning Outcomes*

As was the case previously, the course is extremely broad. This Leaving Certificate Construction Technology specification is designed for a minimum of 180 hours of class contact time. It will be extremely difficult to complete this course in this minimum time. Four Strands with *eighty three* Learning Outcomes demonstrate the rate the course has inflated or become bloated.
Each of these four areas could be a third level course in its own right. There is a critical need to provide the context of what is the expected depth that each of these strands will be delved into?
The Graphic on page 9 needs to have "Strand 1" included with "The Built Environment" as do the other graphics. Our understanding is that the Learning Outcomes will provide the answer as to the scope of treatment of these various strands and if that is the case the course is far too large in its ambition.
The Leaving Certificate Construction Studies syllabus was active for approximately 41 years, from its initial implementation in 1984 to 2025, when a new specification is scheduled to be introduced in schools. A revised syllabus was created in 2005 but its implementation was indefinitely postponed. Whilst it could be argued that the old syllabus of Construction Studies was very outdated, it did change largely due to the changes in the State Examinations Commissions' exam papers. Thus it was indirectly updated to introduce new areas of study like Passive Housing and new technologies. It has left a legacy however that the course has had much added to it, without any content being dropped.

This is an area of concern for the ASTI and we have the view that:
In any well-designed LC syllabus specification there should be clear and constructive alignment between learning outcomes, subject content, pedagogy and assessment. The syllabus should be planned in an integrated way taking account of all these elements.

Learning outcomes must not simply be a "wish list" of what a student is capable of doing on completion of the learning activity.

Learning outcomes must be capable of being validly assessed.

There should be another column with assessment heading to the right of each learning outcomes to provide rigour.

Ambiguity and Lack of Clarity: Learning outcomes can sometimes be vaguely worded or open to multiple interpretations. This can lead to inconsistencies in teaching, assessment, and student understanding of what is expected.

Alignment Challenges: Ensuring that learning activities, teaching methods, and assessments are genuinely aligned with the stated learning outcomes can be a complex and ongoing process, requiring significant *time* and effort from instructors.

Strand 1: The Built Environment [Page 11]

Please provide your views on the learning set out in this strand with reference to

- clarity for planning for teaching and learning
- alignment with the rationale and aims
- opportunities for the development of key competencies and
- access and challenge for all students.

Please provide specific feedback / observations / comments.

Strand 1: The Built Environment [Page 11]

- **clarity for planning for teaching and learning**
  There are 19 Learning Outcomes in this Strand. While all are laudable some are very expansive and will take considerable time to cover in Year 1 of the course. The mix of classroom safety and site safety is not ideal. Both situations are completely different environments and is repeated again in terms of hazards. Thus this is in effect two more Learning Outcomes in this section.

- **alignment with the rationale and aims**
  Broadly aligned although the amount of content remains a worry.

- **opportunities for the development of key competencies**

    "Key competencies in senior cycle August 2024"
    1. Thinking and solving problems
    2. Being creative
    3. Communicating
    4. Working with others
    5. Participating in society
    6. Cultivating wellbeing
    7. Managing learning and self

Further information is provided on page 10 of this publication by the NCCA

"*Key Competencies is an umbrella term which refers to the knowledge, skills, values and dispositions students develop during senior cycle. Competencies refers to a person's capacity to use their knowledge, skills, values and dispositions in a co-ordinated way to act in response to various tasks, contexts, situations and events.*"

Whilst it is a commendable aspiration to list these and ascertain that these are the overall outcomes of the course, the difficulty arises from the inevitable confusion caused to teachers trying to navigate the course content, prepare for exam and project work, the CAO points system whilst encouraging and developing the student. There is an overall lack of clarity and focus in this approach. Competencies are consequences of learning, but can be a distraction to teachers engaged in the day to day teaching and learning.

As previously stated the "Managing learning and self must include a very clear understanding on the part of parents/guardians and students that they are responsible for their learning and particularly their project, folio and practical. They must take responsibility for the compilation, validity and hand up (by electronic means or otherwise) of all material especially for State Examination purposes.

[Please note this note applies to all further sections of the strands 1-4 under the heading of key competencies]

- **access and challenge for all students**
Access:
    - Relevance and Engagement: A modernised curriculum focusing on current technologies, sustainable practices, and the broader built environment make the subject relevant and engaging for a wide range of students, including those who might not have traditionally considered construction-related careers.
    - Diverse Learning Styles: The subject always incorporated a variety of assessment methods beyond the traditional written exam, catering to diverse learning styles and allowing more students to demonstrate their understanding and skills effectively. This included project-based assessments, with a portfolios, and a practical skills test. It is welcome to

see that this practice is continued especially the Practical skills test which is an equitable and fair system of assessment.

- Broader Career Pathways: By encompassing a wider scope of construction technology, the redeveloped subject could highlight a more diverse range of potential career pathways within the sector, including architecture, engineering, project management, sustainable building, and skilled trades. This could attract students with varied interests and aptitudes.
- Integration with Other Subjects: Opportunities for cross-curricular links with subjects like Science, Mathematics, Design and Communication Graphics, could enhance understanding and provide a more holistic educational experience for students.

Challenges:

- Resource Requirements: Implementing a technologically advanced curriculum might require significant investment in new equipment, software, and infrastructure for schools. Ensuring equitable access to these resources across all schools, regardless of their size or location, will be crucial to avoid widening the social and digital divide.
- Teacher Training and Professional Development: Teachers will need quality ongoing professional development to effectively deliver the redeveloped curriculum, particularly in areas involving new technologies and assessment methods. Sufficient time and resources must be allocated for this training. The training should be of a similar quality as was provided by T4 support service.
- Practical Skill Development: Construction Technology inherently involves practical skills. Ensuring all students have equal access to appropriate workshop facilities, tools, and materials for hands-on learning could be a challenge, especially for schools with limited resources.
- Assessment Equity: Designing fair and equitable assessment methods that accurately measure a range of skills and knowledge, including practical competencies and the application of technology, will be complex. Ensuring consistency and comparability across different schools and assessors will be vital.
- Curriculum Overload: Integrating new content and technologies without carefully considering the existing curriculum could lead to overload for both students and teachers. Prioritisation and clear learning outcomes are essential.
- Varying Levels of Prior Knowledge and Interest: Students will enter the redeveloped Construction Technology course with diverse levels of prior knowledge and interest in the field. The curriculum must cater for this range, providing both foundational knowledge and opportunities for more advanced learning.

Successfully navigating the Senior Cycle Redevelopment of Construction Technology will require careful planning, adequate resourcing, effective teacher training, allowance of time, and ongoing consultation with all stakeholders to ensure equitable access and meaningful learning experiences for all students.

Strand 2: Design, Craft Skills, and Materials [Page 14]

Please provide your views on the learning set out in this strand with reference to

- clarity for planning for teaching and learning
- alignment with the rationale and aims
- opportunities for the development of key competencies and
- access and challenge for all students.

Please provide specific feedback / observations / comments.

- **clarity for planning for teaching and learning**

There are 20 learning outcomes in this Strand. This talks about a range of materials and their properties but there must be a clear admission that there will be an emphasis on wood as the primary material. This will tie in with the previous learning of Junior Cycle Wood Technology and this link is vital. It is unrealistic to expect that the course could possibly have an in-depth examination of all materials used in the construction industry. There will of course be quiet a range of materials relayed to the student, from cement, aggregates and various plastic damp proofing courses and membranes etc. but this material science aspect should be another area of study dealt with in greater depth at an appropriate third level course.

The area of design is another course in itself and again if the student gets a basic appreciation of design it will naturally develop in third level as a follow on. It is important to be realistic with learning outcomes both in terms of time and resources.

- **alignment with the rationale and aims**

Broadly aligned, although the amount of content again remains a worry.

- **opportunities for the development of key competencies**

This is a section where competencies previously established in Junior Cycle should be further developed. The craft skills developed in Junior Cycle Wood Technology will be further developed in terms of hand and craft skills, and will be honed and examined through the Project and Practical test. These skills are transferrable to many areas after completion of second level education.

Skills important to the future success of students will also be developed through the written portfolio which supports the Project. The method of assessment is

critical to the success of these learning outcomes and development of key competencies. This will be discussed in the Additional Assessment Component (AAC) section further on in this document.

- **access and challenge for all students**

access

Schools do not have the same facilities, equipment and resources. This is an equity issue and translates to different levels of access to these in demand resources. Some schools have only one senior construction room with two or three Leaving Cert classes whilst other schools have several suitably equipped rooms. Some schools have newer modern rooms and equipment while other schools have old dated facilities.

A dedicated Workshop technician is urgently required to prepare materials and maintain/sharpen equipment and manage ordering of materials/stock.

There needs to be large investment into IT equipment both in terms of infrastructure (Wired and wireless internet networks), hardware and software to support project research, compilation and submission. IT technicians are needed in all schools, it is not reasonable and in many cases possible to expect teachers to do this specialist work.

In terms of Safety, Health and Safety an audit of all construction technology school machinery and space allocation should be carried out and funds made available for the upgrade of facilities. The qualified person (namely the Construction Technology must be present during all practical sessions including the Practical exam.

Challenges

The student must take full ownership of their project work. They must be responsible for the research, compilation, storage, verification and submission of same. The portfolio element of the project is vulnerable to outside influence (outside help or through generative AI software). Teachers cannot verify if these factors are, or are not used. The project and portfolio is weighted at 30% of the total marks. It is unclear what the breakdown of this 30% is. How is it divided between the actual Project (Realisation) and the Portfolio?

Workload is a huge issue in schools. Practical classes always tended to avail of extra time during the school year and this would be allowed from other classes. Now with an AAC in all subjects there will be greater pressure in terms of project time and completion. The portfolio should have a set/mandated maximum number of pages similar to Design and Communications Graphics Student Assignment. Paper size should be specified (A4 for report and possibly A3 for drawing details)

As stated assessment should be integral to the design of the course therefore it is essential to get sample exams for the written, sample instructions for

the project and detailed instruction regarding the portfolio with sample projects and sample practical exams. There must be sample marking schemes with guidelines/points necessary for mark allocation provided by the SEC, similar to existing practice.

Strand 3: Building Fabric [Page 17]

Please provide your views on the learning set out in this strand with reference to

- clarity for planning for teaching and learning
- alignment with the rationale and aims
- opportunities for the development of key competencies and
- access and challenge for all students.

Please provide specific feedback / observations / comments.

- **clarity for planning for teaching and learning**

Strand 3 has 18 Learning Outcomes. Some are complex and vague at the same time. In the absence of an identified assessment example, it is very difficult to create purposeful learning outcomes. This is the new material dealing with Passive House construction and function.

- **alignment with the rationale and aims**

Broadly aligned but lacks clarity.

- **opportunities for the development of key competencies**

This will depend on resources and sample materials being provided. This section needs quality training for teachers similar to the T4 support service. There needs to be sample and resource material provided

- **access and challenge for all students**

Equity of facilities, equipment and resources are uppermost here again. Model making needs to be properly supported.

Strand 4: Services and Control Technology [Page 20]

Please provide your views on the learning set out in this strand with reference to

- clarity for planning for teaching and learning
- alignment with the rationale and aims
- opportunities for the development of key competencies and
- access and challenge for all students.

Please provide specific feedback / observations / comments.

- **clarity for planning for teaching and learning**

Strand 4 has 26 learning outcomes and has a huge amount of content. Areas such as heat loss calculations, ventilation, air quality, heating, water and waste systems and smart technologies. It is clear that it will be difficult to get this course covered in a two year period. SEC exams and marking schemes are needed to check the depth of treatment.

- **alignment with the rationale and aims**

Broadly, yes

- **opportunities for the development of key competencies**

Much scope here to develop key competencies. This will only happen if the subject is supported with considerable resourcing. The area of drawing sections add to the already heavy workload contained in the subject.

- **access and challenge for all students**

As stated previously. New technologies need to be supported by quality teacher CPD.

Additional Assessment (AAC1) [Page 26]

Exploring the Constructed Environment

Please provide specific feedback / observations / comments on the AAC in Leaving Certificate Construction Technology with reference to how the AAC might motivate students, how it aligns to the learning outcomes in the specification and how it facilitates the development of key competencies.

The Project is weighted at 30% of the marks, and comes with supporting portfolio. It is allocated 35 hours of class contact time. The portfolio element of the project is vulnerable to outside influence (outside help or through generative AI software). Teachers cannot verify if these factors are, or are not used. The project and portfolio is weighted at 30% of the total marks. It is unclear what the breakdown of this 30% is. How is it divided between the actual Project (Realisation) and the Portfolio?

The portfolio should have a set/mandated maximum number of pages similar to Design and Communications Graphics Student Assignment. Paper size should be specified (A4 for report and possibly A3 for drawing details)

It is difficult to give a considered view on this AAC in the absence of a sample project brief. It is regrettable that the specification is set to be launched without first publishing a sample project brief and marking scheme.

Additional Assessment (AAC2) [Page 28]

Craft Skills Assessment

Please provide specific feedback / observations / comments on the AAC in Leaving Certificate Construction Technology with reference to how the AAC might motivate students, how it aligns to the learning outcomes in the specification and how it facilitates the development of key competencies.

Weighted at 20% of the marks. This should link in with skills developed in the Junior Cycle. Direct assessment is present in the Practical test. By direct assessment we mean that students are in a controlled environment with supervision and a set time to complete the task. This is fair, equitable and transparent. This is to be lauded as a proper equitable and fair assessment method which limits the influence of outside factors of AI and external influences. A sample Craft skills test with marking scheme needs to be provided at least a year in advance of the course.
It is commendable that the Subject Development have retained this AAC. It is essential to retain the integrity of the subject.

Supports for Successful Enactment

Please provide specific feedback / observations / comments on supports that might be needed for successful enactment of this subject specification.

There is too much change too quickly. The Senior Cycle Redevelopment should have been staggered much more, be piloted, and have all resourcing, training and assessment practices well known before commencement. It should be paused and implemented in a careful controlled way. The credibility and standing of the Leaving Cert established was second to none. This new Senior Cycle Redevelopment (SCR) must have this standing. There are ethical questions of fairness, transparency in terms of any work carried out outside of the school in a format with no limit on time. AI, internet and dedicated projects for purchase are a danger to the creditability of SCR.
There must be a time allocation to all teachers to cope with the huge demands of a new SCR.
Storage facilities and space are concerns but facilities, equipment, resources are key. It is necessary to employ workshop technicians to cut material, maintain machines and hand tools.
This is a huge increase in workload on teachers when they were already at breaking point in terms of stressors. Schools are extremely complex and busy spaces now. There is potential chaos in trying to provide adequate IT facilities to support Senior Cycle Redevelopment (SCR). Huge investment into all aspects of ICT is urgently needed.

Teachers will not take responsibility for student projects. Storage and the method of transfer of material to the SEC will be presumed to be as previously. Digital upload of content will not be the remit of the subject teacher. Formwork and paperwork in connection with the SEC must be reduced.

Subject planning must be supported with dedicated templates and numerous examples of sample subject planning. Crucially there will need to be a understanding that this new subject planning will not be required until the subject is bedded in.

Continuous Professional Development (CPD) or Teacher Professional Learning (TPL) must be during teacher's normal working time and in person. It must NOT be online. It is not feasible or fair to expect overworked teachers to implement at least two new subjects and possibly a new Transition Year (TY), LCVP etc. in their own time.