Sustainable Development Goals and the Future of Architectural Education -- Cultivating SDGs-Centred Architectural Pedagogies

Purpose
Following the positive call for a special issue on Architectural Pedagogies and Sustainable Development Goals (SDGs), the purpose of this overview article is to contextualise reflections on nine selected articles, within recent efforts made by professional organisations, which aspire to blend sustainable development into the collective psyche of both academics and future professionals.

Design/methodology/approach
This article adopts four lines of inquiry by capturing key insights on the place of sustainable design knowledge in architectural education validation and accreditation at both national and global scales; presenting analytical narratives on the recent global efforts that embrace excellence in architectural pedagogy through addressing SDGs; elucidating the two knowledge spaces, centred on pedagogy and sustainability, which are strengthened and supported by Archnet-IJAR; and offering reflections on the nine articles published in this special issue that aims at integration of the two knowledge spaces.

Findings
Contextualisation and reflective narratives offer insights into current efforts and demonstrate a clear commitment of professional organisations to embed values relevant to SDGs. Efforts of the Education Commission of the International Union of Architects and the UNESCO-UIA Validation Council of Architectural Education appear to have advanced significantly over recent years with a clear prospect for a sustainable future. The nine articles published in this special issue respond clearly to the goal of Quality Education (SDG4), but not all of them have addressed the goals related to Good Health and Well-being (SDG3), and Sustainable Cities and Communities (SDG11), and their place in architectural pedagogy. However, they take a step further to address aspects of climate change, globalisation, sustainable architecture and urbanism, social sustainability, global north/global south dialectics, and decolonisation.

Practical implications
The findings offer opportunities to recognise efforts by professional organisations, map key pedagogical experiments into these efforts, while providing lessons learned from best practices aiming to effectively integrate SDGs into architectural pedagogy.

Originality/value
No serious effort has been made to articulate the integration of SDGs into architectural education at the level of research or design studio pedagogical practice. Addressing architectural pedagogies and sustainable development is predicated on the fact that there is very little written or known on integrating SDGs into architectural education and design pedagogy. Understanding, appreciating, and sharing various efforts and approaches to incorporate SDGs into architectural pedagogy is a key step towards a sustainable future.
Sustainable Development Goals and the Future of Architectural Education -- Cultivating SDGs-Centred Architectural Pedagogies

1. Introduction

This special issue on Architectural Pedagogies and Sustainable Development Goals (SDGs) has been developed in response to the fact that there is very little written or known, on effectively integrating SDGs into architectural education and design pedagogy. Professional organisations operating at national and global scales, and their associated authorities responsible for the education of future architects, are calling for this integration. Despite this, there remains little evidence of the development and sharing of various experiments and relevant cases. Additionally, international competitions, awards and prizes in architecture and urbanism are calling for ideas and architectural and urban solutions through which SDGs is a key criterion that must be responded to. The impetus for the inclusion of and response to SDGs in architectural education, has never been clearer.

Centred on selected United Nations Sustainable Development Goals (UN-SDGs) as they relate to the education of architects and urbanists, this special issue of “Archnet-IJAR: International Journal of Architectural Research” aims to bridge traditional boundaries between arts, humanities, and social and environmental sciences, and between research, professional practice, and policy. However, the initial emphasis of the call is placed on three priority SDGs from a social perspective. These are: Quality Education (SDG4), Good Health and Well-being (SDG3), and Sustainable Cities and Communities (SDG11), and their place in architectural pedagogy.

The premise of this special issue is to provide a comprehensive understanding of: 1) contemporary social, behavioural, and cultural issues and challenges; 2) the way in which they are addressed in the academic curriculum; 3) the open-ended possibilities of integrating them into teaching/learning processes and practices; and 4) the way in which they are situated in various contexts where future architects and urbanists design and plan buildings, communities, and cities in response to these challenges. Three key questions were introduced and to which contributions were expected to respond:

a) How can architectural pedagogy contribute to an overall Quality Higher-Education (SDG4)?
b) What is the place of Good Health and Well-being in architectural pedagogy (SDG3)?
c) Has social sustainability, as an integral element for Creating Sustainable Cities and Communities, reached architectural education (SDG11)?

Articles responding to these questions were expected to:

- Demonstrate: 1) theoretical positions, validated frameworks, and implemented strategies that address issues and related knowledge fragmentation; 2) how the SDGs can be incorporated into the curriculum; 3) the interdisciplinary thinking and acting; and 4) the notion of an inclusive and decolonised curriculum.
- Propose and validate teaching/learning experiences (lecture-based or studio-based) that address one or more of the timely topics underlying SDGs, including: engagement with nature; biophilic design; restorative environments; social sustainability; walkability and sustainable neighbourhoods; and learning from traditions.

Nine articles were selected out of a wide array of submissions that exceeded thirty-five articles. While all nine articles respond clearly to the first key question related to Quality Education (SDG4), not all of them have addressed the second and third questions on Good Health and Well-being (SDG3), and Sustainable Cities and Communities (SDG11), and their place in architectural pedagogy. This means that the thrust of this special issue has not been fully met. Despite this, the contributors do address the challenges and opportunities in their unique contexts, taking a step further and speaking to various issues entrenched in the essence of SDGs including globalisation; sustainable architecture and urbanism; social sustainability; global north/global south dialectics; decolonisation; and the challenges of the era of the Anthropocene.

Effective discussion of the core of this special issue and the content of the published articles necessitates consideration within the context of wider recent efforts. In response, this overview article offers highlights on the milieu within which the nine articles are conceived and developed. The overview: a) captures key insights on the place of sustainable design knowledge in architectural
education validation and accreditation at both national and global scales; b) presents analytical narratives on the recent global efforts in promoting excellence in architectural pedagogy; c) articulates insights into two knowledge spaces, centred on pedagogy and sustainability, invigorated and promoted by Archnet-IJAR; and lastly d) offers reflections on the nine articles published in this special issue.

2. National efforts -- The place of sustainable design knowledge in architectural education validation and accreditation

Aspiring graduates of architecture must follow a structured process to join the architectural profession. This involves obtaining a license to practice professionally by registering with the relevant professional body or government board. In many countries around the world, graduates embark upon this process soon after they complete their standard architectural education. These programs of architecture are typically required to be accredited/validated either by higher education authorities or by the educational division of the architectural professional organisation in the country. In other countries, accreditation/validation of the architecture program alone, does not suffice. In these instances, gaining a license requires a rigorous process through a regulatory body. This typically necessitates fulfilling specific requirements, including completing an accredited/validated architectural education, gaining practical experience under the supervision of a registered architect through internships or work placements, and passing a board examination.

In some cases, the body that sets educational standards, oversees, and implements the validation/accreditation of architectural education, is a central pillar of the professional organisation or regulatory board. In other cases, there are two separate boards that act through coordination and consultation. Nonetheless, the role of these boards and architectural institutions is vital in protecting the interests of the public, while simultaneously advancing the architectural profession. They play a critical role in addressing timely challenges related to society, economy, the environment, and the skills required for successful practice, both locally and globally. In essence, these boards are established to maintain high standards in architectural education and elevate the overall excellence of the profession. While discussing the process of registration in countries around the world goes beyond the scope of this overview, it is important to highlight examples that represent the current place of sustainability and sustainable design knowledge within the requirements of validation and accreditation of architectural education.

2.1 Australia

In Australia, the Architects Accreditation Council of Australia (AACA) facilitates the National Standard of Competency for Architects (NSCA), on behalf of the Australian ARBs. All pathways to professional registration, require applicants to apply their knowledge and skills in architectural practice, as specified in the NSCA. There are several pathways to qualify as an architect in Australia (AACA, 2023c). However, the most likely pathway for Australian university students is: 1) Graduate with a recognised academic qualification in architecture; 2) Achieve the minimum period of logged, applied experience; and 3) Successfully complete the Architectural Practice Examination (APE). The APE consists of a three-part examination process, each of which must be passed in sequence before a successful candidate is qualified to apply to register as an architect (AACA, 2023a):

1. Part 1 of the APE entails the successful submission of a logbook along with a statement of practical experience (SOPE) (minimum of 3,300 hours). The purpose of the logbook and SOPE is to record in a condensed format, the candidate’s fulfilment of the practical experience required for the APE. The Logbook and SOPE must be mapped against the NSCA Performance Criteria, and this provides the basis for assessors to explore the nature and level of experience in Part 3 - the Examination by Interview.

2. Candidates who have met the eligibility requirements for Part 1 are permitted to sit the written scenario-based National Examination Paper (NEP), in Part 2. The examination of professional knowledge is an important part of the APE. The objective of the NEP is to provide a reliable and valid test of knowledge and application of relevant Performance Criteria in the NSCA.

3. Candidates must pass the NEP as a condition of admission to Part 3, the examination by interview. This interview is conducted by two experienced practicing architects, who are registered in the State or Territory that is facilitating the APE. The objective of the interview is to enable the assessors to confirm that the candidate has demonstrated adequate knowledge and/or experience of the NSCA sufficient to enable him or her to perform to the standard expected of an architect in Australia.
Success in Part 3 of the Architectural Practice Examination allows the candidate to apply for registration in any state or territory in Australia. State and Territory Architect Registration Boards (ARBs) review and must unanimously approve each application during their formal board meetings before professional registration can take place. A minimum of seven years of education and supervised professional experience must therefore be successfully completed, before a graduate can apply for professional registration as an architect in Australia. Furthermore, several alternative pathways to registration are also offered in Australia (AACA, 2023c).

Most candidates seeking registration as an architect in Australia are required to complete the Architectural Practice Examination unless they are eligible to achieve registration via another pathway. The purpose of the Architectural Practice Examination is to ensure that persons applying to be admitted to a Register of Architects in any State or Territory in Australia have an adequate knowledge and understanding of the practice of architecture in Australia and a capacity to exercise professional skill. The NSCA sets out the benchmark competency against which an applicant for registration as an architect in Australia is measured. This standard describes what is reasonably expected of a person who can demonstrate the standard of skill, care and diligence widely accepted in Australia as a competent professional practitioner in architecture (AACA, 2021).

The new NSCA has been progressively implemented since its inception in 2021 and will fully replace the 2015 edition by the end of 2023. In the context of this paper, there are several significant additions to the 2021 NSCA which are worth noting. Embedded within the practice of architecture is the recognition of Aboriginal and Torres Strait Islander Peoples’ ongoing connection and custodianship of Country, and the ethical responsibilities to the physical environment and the transition to a carbon-neutral built environment. As these responsibilities are fundamental to architecture practice, they have been added to the 2021 NSCA Performance Criteria and must be met to: 1) graduate from an accredited program of architecture, 2) register as an architect; and 3) maintain annual registration as an architect, through continuing professional development activities.

New and expanded Performance Criteria (PC) for the 2021 NSCA (AACA, 2021) include 1) new recognition of First Nations principles in designing for Country, and 2) sustainability competencies broadened and expanded as outlined in Tables 1 and 2.

Table 1: New recognition of First Nations principles in designing for Country (AACA, 2021).

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>PC03</th>
<th>Understand the principles of project planning, considering implications for Country, environmental sustainability, communities, stakeholders and project costs.</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC08</td>
<td>Understand how to implement culturally responsive and meaningful engagement processes that respect the importance of Country and reciprocal relationships with Aboriginal and Torres Strait Islander Peoples across architectural services.</td>
<td></td>
</tr>
<tr>
<td>PC15</td>
<td>Understand legal and ethical obligations relating to copyright, moral rights, authorship of cultural knowledge and intellectual property requirements across architectural services.</td>
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<tr>
<td>PC17</td>
<td>Have an understanding of Aboriginal and Torres Strait Islander Peoples’ aspirations to care for Country and how these inform architectural design.</td>
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<tr>
<td>PC26</td>
<td>Be able to undertake site, cultural and contextual analysis as part of preliminary design research.</td>
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<tr>
<td>PC27</td>
<td>Understand how to embed the knowledge, worldviews and perspectives of Aboriginal and Torres Strait Islander Peoples, shared through engagement processes, into the conceptual design in a meaningful, respectful and appropriate way.</td>
<td></td>
</tr>
<tr>
<td>PC29</td>
<td>Be able to develop and evaluate design options in terms of the heritage, cultural and community values embodied in the site, and in relation to project requirements.</td>
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<tr>
<td>PC30</td>
<td>Be able to explore options for siting a project, including integrating information and analysis of relevant cultural, social and economic factors.</td>
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<tr>
<td>PC34</td>
<td>Be able to apply principles and methodologies for presenting conceptual design proposals and associated information to clients, stakeholders and communities, including using culturally responsive methods appropriate to different audiences.</td>
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<tr>
<td>PC36</td>
<td>Be able to apply creative imagination, design precedents, emergent knowledge, critical evaluation and continued engagement with Aboriginal and Torres Strait Islander Peoples to produce a coherent project design. This should be resolved in terms of supporting health and wellbeing outcomes for Country, site planning, formal composition, spatial planning and circulation as appropriate to the project brief and all other factors affecting the project.</td>
<td></td>
</tr>
<tr>
<td>PC45</td>
<td>Understand processes for selecting materials, finishes, fittings, components and systems, based on consideration of quality and performance standards, the impact on Country and the environment, and the whole life carbon impact of the project.</td>
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</tr>
</tbody>
</table>
The professional criteria in Part III include a strong emphasis on environmental sustainability and environmental comfort and the ability to incorporate sustainable design principles into a design project. Sustainability is considered within these criteria, focusing on the relationship between people, buildings, and the environment. The impact of buildings on the environment and the principles of sustainable design are emphasised. Notably, the criteria encompass the integration of technologies for environmental and the whole life carbon implications of procurement methods, materials, and the environment. The ARB's General Criteria for Part I and Part II consists of 11 main sections with 33 sub-criteria that cover various aspects, such as aesthetics, technical skills, structural planning, and cost requirements. Sustainability is considered within these criteria, focusing on the relationship between people, buildings, and the environment. The impact of buildings on the environment and the principles of sustainable design are emphasised. Notably, the criteria encompass the integration of technologies for environmental comfort and the ability to incorporate sustainable design principles into a design project.

### Table 2: Sustainability competencies broadened and expanded (AACA, 2021).

<table>
<thead>
<tr>
<th>PRACTICE MANAGEMENT &amp; PROFESSIONAL CONDUCT</th>
<th>PC3</th>
<th>Understand the principles of project planning, considering implications for Country, environmental sustainability, communities, stakeholders and project costs.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PC10</td>
<td>Understand the whole life carbon implications of procurement methods, materials, components and construction systems.</td>
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<td></td>
<td>PC12</td>
<td>Understand how relevant building codes, standards and planning controls apply across architectural practice, including climate change implications, the principles of fire safety, and barriers to universal access.</td>
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<td></td>
<td>PC16</td>
<td>Understand risk management and mitigation principles and strategies – including safety in design, project risk, requirement for resilience from the impacts of climate change and appropriate insurances – across architectural services.</td>
</tr>
<tr>
<td>PROJECT INITIATION &amp; CONCEPTUAL DESIGN</td>
<td>PC24</td>
<td>Understand how to identify and evaluate project development options in response to a project brief – its objectives, budget, user intent and built purpose, risks and timeframe, including environmental sustainability considerations.</td>
</tr>
<tr>
<td></td>
<td>PC28</td>
<td>Be able to draw on knowledge from building sciences and technology, environmental sciences and behavioural and social sciences as part of preliminary design research and when developing the conceptual design to optimise the performance of the project.</td>
</tr>
<tr>
<td></td>
<td>PC31</td>
<td>Be able to identify, analyse and integrate information relevant to environmental sustainability – such as energy and water consumption, resources depletion, waste, embodied carbon and carbon emissions – over the lifecycle of a project.</td>
</tr>
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<td></td>
<td>PC33</td>
<td>Be able to investigate, coordinate and integrate sustainable environmental systems – including water, thermal, lighting and acoustics – into the conceptual design.</td>
</tr>
<tr>
<td>DETAILED DESIGN &amp; CONSTRUCTION DOCUMENTATION</td>
<td>PC45</td>
<td>Understand processes for selecting materials, finishes, fittings, components and systems, including water, thermal, lighting and acoustics – into the conceptual design.</td>
</tr>
</tbody>
</table>

#### 2.2 The United Kingdom

In the UK, there are two organisations that oversee the education of future architects: The Royal Institute of British Architects (RIBA) and the Architects Registration Board (ARB). The RIBA validates programmes (not individuals) and identifies courses and examinations which achieve the standards necessary to prepare students for professional practice. The ARB operates as an independent statutory regulator and competent authority for architects and their education.

The primary responsibilities of the ARB are twofold: first, to safeguard the stakeholders of architectural services, and second, to ensure that architects are qualified and competent professionals. To become a UK registered architect, students must complete their architectural education and pass the prescribed examination for ARB registration. The architectural education process, according to ARB, consists of three parts. Part I involves a three-year undergraduate degree, followed by at least one year of practical experience in an architectural practice. After that comes Part II, which entails a two-year postgraduate diploma or a Master's degree. An additional year is required to gain a total of 24 months of practical experience before proceeding to Part III, which is the professional practice and registration examination. In total and similar to the Australian requirements, seven years of education and experience is necessary before a UK-educated graduate of architecture can seek chartered status. All students who complete their architecture education in the UK are required to pass the prescribed examination for ARB registration.

The ARB's General Criteria for Part I and Part II consists of 11 main sections with 33 sub-criteria that cover various aspects, such as aesthetics, technical skills, structural planning, and cost requirements. Sustainability is considered within these criteria, focusing on the relationship between people, buildings, and the environment. The impact of buildings on the environment and the principles of sustainable design are emphasised. Notably, the criteria encompass the integration of technologies for environmental comfort and the ability to incorporate sustainable design principles into a design project. The professional criteria in Part III include a strong emphasis on environmental sustainability and sustainability-related legislation within the legal framework and processes (ARB, 2011; Bently, 2013). Notably, climate literacy and health and life safety were introduced in 2021 as part of RIBA mandatory competences. Additionally, there are several themes and values identified by RIBA which are set as requirements for validation. Among these requirements is "health and life safety: demonstrating authoritative knowledge of statutory frameworks to safeguard the community and end user" (RIBA, 2021a).
2.3 The United States of America

The authority responsible for accrediting professional degree programmes in architecture in the USA is the National Architectural Accrediting Board (NAAB). This board sets standards and procedures for verifying that accredited programmes meet the required standards for architectural schools, leading to professional architect practice licensure by The National Council of Architectural Registration Boards (NCARB).

Sustainability was introduced explicitly into the architecture curriculum in the USA in 2004, with its principles integrated into both theoretical lectures and practical design studios. Until 2020, the NAAB Student Performance Criteria (SPCs) consisted of 34 criteria grouped into three main categories: 1) technical skills, knowledge, and integrated building practices; 2) leadership and practice; and 3) critical thinking and presentation. Within these categories, various sub-sets cover topics such as environmental systems, human behaviour, sustainable design, cost control, architects' role, and professional practice, as well as academic and presentation skills (Bentsy, 2013; Ismail et al., 2017; NAAB, 2020). However, within recent iterations of the NAAB conditions for accreditation, the requirements are classified into two overarching categories of criteria: programme criteria, and student criteria (learning objectives and outcomes). An articulated focus on ecology and society manifests among the two sets of criteria:

“PC.3 Ecological Knowledge and Responsibility—How the programme instils in students a holistic understanding of the dynamic between built and natural environments, enabling future architects to mitigate climate change responsibly by leveraging ecological, advanced building performance, adaptation, and resilience principles in their work and advocacy activities” (NAAB, 2020, p.2).

“PC.8 Social Equity and Inclusion—How the programme furthers and deepens students' understanding of diverse cultural and social contexts and helps them translate that understanding into built environments that equitably support and include people of different backgrounds, resources, and abilities” (NAAB, 2020, p.2).

As part of the student learning outcomes, for a programme to be validated/accredited, evidence should demonstrate addressing “SC.1 Health, Safety, and Welfare in the Built Environment—How the program ensures that students understand the impact of the built environment on human health, safety, and welfare at multiple scales, from buildings to cities” (NAAB, 2020, p.3).

Evidently, the preceding outline demonstrates commitment of AACA and the Australian ARBs, RIBA and the UK ARB, and NAAB to embed values relevant to SDGs. It should be stated that this is supported by reports and guidance documents of related organisations. In the case of Australia, these documents include: the National Standard of Competency for Architects (AACA, 2021), the Race to Net Zero Carbon (Prasad et al., 2021), and Indigenous knowledge in the built environment (Jones et al., 2018). Similarly, in the case of the United Kingdom, guidance documents include: Safety and Sustainability Guidance for Institutions (ARB, 2021), RIBA Education and Professional Development Framework (RIBA 2020a), RIBA Sustainable Outcomes Guide (RIBA, 2020b), and RIBA 2030 Climate Challenge (RIBA, 2021b). Finally, in the case of the United States, the guidance reports include: Framework for Design Excellence by the American Institute of Architects (AIA, 2023) and the guidance and resources on Equity, Diversity, and Inclusion by the Association of Collegiate Schools of Architecture (ACSA, 2023).

3. Global efforts: The place of sustainable design knowledge in the work of UIA Architectural Education Commission

While the examples outlined in the preceding section are taking place at the national level in Australia, the United Kingdom, and the United States, it should be noted that the AACA, RIBA and NAAB all receive requests from schools of architecture that seek to achieve global recognition. Thus, over the past two decades all have sought global validation of schools with full accreditation status as in the case of RIBA, or substantial equivalency status as in the case of the AACA and NAAB. These mutual recognition agreements and reciprocal recognitions are designed to recognise the professional credentials of architects licensed/registered in different countries. They support the mobility of architects...
by creating opportunities to practice beyond geographic borders. Australia has mutual recognition agreements or reciprocal recognition with the following countries/economies at present: Canada, Japan, Singapore, the United States, and the United Kingdom (AACA, 2023b).

In parallel, since the mid-1990s, global efforts through the International Union of Architects/Union Internationale des Architectes (UIA) have seen significant expansion. After being a committee for architectural education since 1995, the UIA Education Commission (EDUCOM) was established over a decade ago with the primary goal of enhancing worldwide access to high quality architectural education, and to emphasise the importance of international mobility of professionals. Yet, it has two-fold objectives. Firstly, it takes on the responsibility of endorsing the UNESCO-UIA programme validation efforts. Secondly, it operates as a think-tank for architectural education policy, actively developing guidelines, documents, proposals, and opinions pertaining to architectural education globally, while recognising the unique context-specificities of schools of architecture in various countries around the world.

3.1 The UNESCO-UIA Charter and Validation System of Architectural Education.

The recognition of architecture study programmes by the UNESCO-UIA validation represents an internationally benchmarked assessment of quality in architectural education with two underpinning documents: UNESCO-UIA Charter for Architectural Education (UIA, 2023a) and UNESCO-UIA Validation System (UIA, 2023b). Assessment is carried out through a process of robust, unbiased, evidenced-based peer review. The UNESCO-UIA Validation advances the creation of a global network of recognised architecture programmes, setting up certified institutions and their students, with a great advantage. According to UIA Education Commission, in its role as keeper and advocate of the UNESCO-UIA Charter for Architectural Education, UNESCO-UIA maintains a significant overview of the Canberra Accord, a global system for recognising the substantial equivalence of validation systems. The Charter is reviewed every 6 years by the UIA Education Commission. The Royal Institute of British Architects (RIBA) acts as the system operator of the UNESCO-UIA Validation System (UIA-EDUCOM, 2023).

The latest update of the Charter and Validation Manual involves explicit reference to SDGs as demonstrated by the general considerations and articulation of the objectives of architectural education. Under the general considerations section, three striking references to SDGs can be seen in the following statements:

“That a quality education in architecture must prepare architects to formulate new solutions for the present and the future, as new eras will bring with them grave and complex challenges with respect to the social and functional degradation of many human settlements. These challenges may include many of the elements incorporated in the United Nations Sustainable Development Goals, including global urbanisation and the consequent depletion of existing environments, a severe shortage of housing, urban services and social infrastructure, the effects of all of these on the public health and well-being, and the increasing exclusion of architects from built environment projects” (UIA, 2023a, p.2).

“That it is in the public interest and central to the public health –including physical and psychological well-being-- to ensure that architects are able to understand regional characteristics and to give practical expression to the needs, expectations and improvement to the quality of life of individuals, social groups, communities and human settlements, advocating, through their work, for equitable and inclusive environments, clean water, accessible and renewable energy, resilient and innovative infrastructures, sustainable cities and communities, region-specific climate action, and responsible stewardship of our natural and built environment” (UIA, 2023a, p.2).

“That the vision of the future world, cultivated in architecture schools, should include the following goals, which draw upon the ethos of the 17 United Nations Sustainable Development Goals (UIA, 2023a, p.3):

• A decent, healthy, just, safe, equitable, accessible, sustainable, and resilient quality of life for all the inhabitants of human settlements.
• A technological application for development which respects the social, cultural, and aesthetic needs of people and is cognizant of the appropriate use of materials in architecture and infrastructure, and their initial and future maintenance costs.

• An ecologically balanced and sustainable development of the built and natural environment including the rational utilisation of available, and where possible, renewable resources.

• A diverse, equitable and inclusive built environment which is valued as the common heritage, property and responsibility of everyone.

The Charter includes sixteen objectives that schools seeking validations of their programmes must react to. Eleven of these objectives follow the European directive for architectural education while additional five objectives are unique to the UNESCO-UIA. They involve explicit reference to SDGs “Knowledge of the means of achieving ecologically responsible design, environmental conservation, and rehabilitation, with a focus on relevant aspects of the 17 United Nations Sustainable Development Goals” (UIA, 2023a, p.4). Additionally, issues related to public health as well as the need for transdisciplinary knowledge production are emphasised in two of these objectives as follows:

“Understanding of professional and disciplinary responsibilities toward human, social, cultural, urban, architectural, and environmental values as well as architectural heritage --including the health, safety, and welfare of the public; and the physiological and psychological aspects of public health and well-being. These responsibilities also include a commitment to equity, diversity, and inclusivity in both the content and the context of architectural instruction” (UIA, 2023a, p.4).

“Understanding of research and pedagogical methodologies, including those of transdisciplinary knowledge action and knowledge transferability as inherent parts of architectural learning, for both students and teachers” (UIA, 2023a, p.4).

Efforts of the UIA Education commission and the Validation Council of Architectural Education appear to have advanced significantly over recent years. There is a clear pledge to SDGs manifested through a series of statements that refer to ecologically responsible design, environmental conservation and rehabilitation, public health and well-being, and transdisciplinary knowledge production.

3.2 The UIA Award for Innovation in Architectural Education

To enhance best practices in pedagogy and the development of sustainable built environments, in November 2019, the UIA Education Commission launched the UIA Innovation in Architectural Education Award. This award celebrates innovation across cultural and geographic boundaries and promotes inspiring pedagogical practices which contribute to the creation of sustainable environments.

Open to colleges, schools, departments, or programmes of architecture worldwide, the inaugural UIA Award for Innovation in Architectural Education recognised excellence in architectural and urban design education. It accomplished this through focusing on innovative pedagogies that foster the development of sustainable environments across the five UIA Regions, while reflecting their broad diversity. Aligning with the UNESCO/ UIA Charter for Architectural Education, the Award emphasises the role of architecture and urban design education by addressing the societal and environmental challenges facing the built environment, and articulating the opportunities those challenges create. Two key criteria characterise the Award: a) excellence in pedagogical practice, and b) excellence in shaping a sustainable future.

3.2.1 The inaugural edition of the Award (2019-2021)

In its inaugural edition, sixteen projects from nine countries on four continents were shortlisted by an international jury of academics and professionals. The Jury consisted of Oya Atalay Franck (Switzerland), Harriet Harriss (United Kingdom/USA), Derya Oktay (Turkey), Konstantin Kiyansenko (Russia), Thomas Fisher (USA), Beatriz Maturana Cossio (Chile), Mustapha Mohd Saleh (Malaysia), Lindy Osborne Burton (Australia), Carin Smuts (South Africa) and Hassan Radoine (Morocco). The lead author was one of the jury members and the co-author was the curator of the Award. The Jury awarded 4 entries that included:

a) The Royal Danish Academy, School of Architecture, Copenhagen (Denmark), David A. Garcia, entitled: ‘Architectural Education Through On-Site Collaboration – Architecture and Extreme Environments’. The jury statement highlighted that this programme exhibited a strong
commitment to global communities residing in harsh environments, actively involving them in addressing all 17 of the UN Sustainable Development Goals. Moreover, the programme showcased exceptional sensitivity towards environmental challenges and effectively incorporated research into its design process.

b) The University of Washington – Seattle (USA), College of Built Environment, Department of Architecture, Elizabeth M. Golden, which was an entry in the form of a seminar on ‘Traditional Building Methods: New Adaptations’. The jury statement highlighted the merit of pedagogy and focus of this seminar, as a cutting-edge and impactful programme which fostered interdisciplinary and international collaboration, with a primary emphasis on building construction through traditional methods and experiential learning.

c) The School of Architecture, Southeast University, Nanjing (China), Zhang Tong, the staff and students at the School of Architecture, entitled ‘Living Construction in Rural Communities’. The jury statement emphasised that this was a progressive 6-year M.Arch programme which successfully integrated architectural, cultural, social, and environmental education, with an outstanding emphasis on topics crucial to rural communities, such as building traditions, physical restoration, and community revitalisation.

d) The School of Architecture – Tsinghua University (China), Song Yehao, entitled ‘Sustainable Design Studio’ which was described by the jury as a pedagogical practice that involved architecture academics, students, and local communities and which was rooted in sound pedagogy and sustainability, offering an exciting spectrum of real-world learning experiences. Through built projects, this showcased how design can integrate distinctive vernacular materials and methodologies through a hands-on ‘learning by doing’ approach.

The four projects integrated aspects of SDGs in various ways in terms of focus, the learning setting, and the length within the curriculum. Plate 1 illustrates representative posters of each of the four awarded entries in 2021. Moreover, the Jury identified three additional entries to be commended for their inspiring proposals which successfully bridged the gaps between architects, and communities, and between various built environment disciplines.
In its second edition (2021-2023), further emphasis was made on Sustainable Development Goals, both in the title and in the award brief. The two key criteria were maintained but with further elaboration including: a) excellence in pedagogical practice based on evidence of pedagogical innovation and enhanced learning outcomes, and b) excellence in addressing SDGs based on evidence of innovation in content, identifying challenges, and development of solutions (UIA, 2023c). In demonstrating
excellence, entries were expected to consider evidencing and documenting how the pedagogical programme:

- Adopted and implemented pedagogical approaches that respond to United Nations SDGs whether holistically or emphasizing a focus area.
- Simulated students’ inquisitiveness in ways that inspire a commitment to addressing social and environmental challenges.
- Recognised and effectively enhanced the diversity of student learning needs, thus offering multiple learning opportunities.
- Integrated findings from architectural research, scholarship, and professional practice in ways that add value to the learning environment.
- Engaged with and potentially contributed to the established body of knowledge by working effectively across disciplines.
- Identified strategic and operational priories of the context or region in which the school/programme operates.

Following a rigorous process of assessing the entries, the jury, was chaired Deniz Incedayi (Turkey) and consisting of Martha Thorne (United States/Spain); Howaida Al-Harithy (Lebanon/Saudi Arabia); Michael J. Crosbie (United States); Hermie Delport (South Africa); Efthalia -Thaleia Grigoriadou (Greece), with the co-author acting as curator of the Award, once again. Fifteen submissions from twelve countries on four continents were shortlisted, out of over 35 registrations. The jury awarded four entries that responded to various parameters of the SDGs, as follows:

a) Department of Architecture and Civil Engineering, Chalmers University of Technology, Gothenburg (Sweden) – Emilio Brandao, Shea Hagy Marco Adelfio, and Liane Thuvander, entitled: ‘Design Activism Beyond Sustainability – Architectural Education based on Collaborative and Radical Pedagogy’. This programme prioritised the advancement of knowledge and the practical application of skills in diverse contexts through experiential learning. It focused on developing hyper-local solutions for real-world challenges, promoting a holistic understanding of various aspects of sustainable development.

b) Department of Architecture, Gazi University, Ankara (Turkey) - Semra Arslan Selçuk, Esra Özkan Yazgan, Aysenur Coskun, entitled: ‘Active Collaboration in Architectural Design Studio: Enhancing Knowledge Networks for Excellence in Pedagogical Practice’. This impactful studio revolved around a community service commitment, placing a strong emphasis on retrofitting and adaptive reuse as vital elements of sustainability. It examined intriguing and well-articulated cases that tackled different scales of the existing built environment, presenting the significance of these approaches in promoting a sustainable future.

c) Beijing University of Civil Engineering and Architecture, Beijing (China) – Mu Jun, Hao Shimeng, Jiang Wei, Zhou Tiegang, Jin Yibing, and Ren Zhongqi, entitled: ‘Building with Earth: A Mutual-educational Approach towards Sustainable Rural Revitalisation Empowered by Traditional Wisdom’. With a sound pedagogical approach, this programme engaged with a variety of players coming from different backgrounds and disciplines, to work directly with the villagers where everyone learns.

d) Architectural Engineering & Technology AET Programme, Faculty of Engineering, Cairo University, Cairo (Egypt) – Heba Allah Essam E. Khalil, entitled: ‘Sustainable Community Design and Social Development: Activating Spaces within Green and Healthy Corridors’. This studio work was closely connected to action research, employing a wide spectrum of pedagogical tools and techniques, including assessment, gaming, negotiation, observations, and communication. Students actively sought available opportunities within their city to intervene, focusing on areas such as vacant land and median strips.

The four awarded projects successfully addressed gaps between architecture and other disciplines, architects and communities, thinking and making, the intellectual and the vocational, and the university campus and its wider context. Collectively, they demonstrate various approaches that a) challenge misconceptions in dealing with sustainable architecture and urbanism only in physical terms, and b) encounter traditional misconceptions about pedagogical practices in architecture. They offer compelling expressions for achieving a sustainable built environment, in the future. Plate 2 illustrates representative posters of each of the four awarded entries in 2023.
The Jury also identified one additional entry to be commended. This entry’s inspiring proposal successfully considered the relationship between the natural and the built environment with equality embedded as a key design parameter. As such, an Honourable Mention was awarded to the Department of Architecture, School of Architecture, Tianjin University, Tianjin (China) – Kong Yuhang, Yang Wei, Zhang Xinnan, Xin Shanchao, Song Yilin, Yang Hongwei, Guo Mengdi, and Zhang Yifan, for their entry entitled: ‘Designing with Nature and Equality’. Heavily anchored in scientific research, the
international component of this programme made its impact global, as did the interdisciplinary approach. The fact that this programme was over a decade old, provides evidence of the influence that it has had, in shaping a sustainable future.

4. Architectural pedagogy and sustainability – Two growing knowledge spaces within Archnet-IJAR

In a recent article published in Archnet-IJAR, the evolving knowledge spaces were articulated to demonstrate the growth of a number of thematic areas. Among these were two areas relevant to the scope of this paper: a) the knowledge space of architectural education and design pedagogy, and b) the knowledge space of architectural and urban sustainability and resilience (Salama, 2022). An outline of these two knowledge areas, and the way in which they have been articulated in Archnet-IJAR, is important for contextualisation purposes.

4.1 The knowledge space of architectural education and design pedagogy

A wide range of issues has been underlined within the space of architectural education and design pedagogy. Yet, this has expanded where several research and position articles have corroborated the need for sustaining the pedagogical discourse in architecture and urbanism.

The article by Saghafi and Crowther (2021) examines the integration of design studio and technology subjects at the University of Tehran in Iran, and Queensland University of Technology in Australia. Both programmes share a similar aim in terms of content delivery but diverge in their emphasis. The Iranian programme focuses more on knowledge delivery, while the Australian programme places a stronger emphasis on applying knowledge and skills, especially in design studio projects. Additionally, Aramouny (2021) presents an experiment at the American University of Beirut (AUB), which advocates for combining digital fabrication and analogue making, to merge digital design processes with material expertise. This type of experimentation supports the innovative use of cement-based products with an environmental and bio-integrated mindset.

Observing the wisdom of design-build projects in schools of architecture in Canada and the United States Verderber (2021) offers a post-occupancy evaluation mechanism to develop learnings from the experience of design-build projects. Through assessments of three open-air pavilion structures from the viewpoint of 161 respondents, degree of satisfaction and everyday uses, Verderber’s exploration focuses on factors such as functionality, community context, materiality, and aesthetics in relation to the three pavilions. The pavilions were considered tectonically sound and visually salient, making them iconic. They were also seen as valuable additions to their respective physical and social contexts.

Testing studio pedagogy instigated through an experiment of a joint design studio held between two departments of architecture in the context of Pakistan, Qureshi (2020) captures the effectiveness, efficiency and impacts of this collaboration. Musa (2020) assesses the architectural design jury practice in the University of Sharjah-UAE while exploring its role as an assessment tool and the associated factors and power relations that undermine it. She advocates a reform in the jury system and proposes the implementation of supporting tools that prioritise student empowerment rather than exclusively focusing on evaluation. Similarly, focusing on the role of educators in an Australian context, the work of Iftikar et al. (2021) examines an array of roles that both teachers and students adopt in the design studio process; they highlight the fact that these roles change over time within the semester or throughout the academic session. Their work reveals that these changes correspond with the progress and stages of the design project and offer lessons on how to better relate to student needs. Extending to other allied fields such as planning and engineering, the work of Megahed et al. (2020) explores the competencies and skills required of future urban planning professionals to meet the real-world challenges of professional practice. They present a validated model of competencies resulting from scanning the expectations of Egyptian students and new graduates, versus the requirements to practice urban planning.

Flexibility in the boundaries of the space of architectural education is evident in terms of its scope where issues related to research are debated from an educational perspective. Abdellatif and Abdellatif (2020), articulate what constitutes a successful thesis proposal and present key lessons that aim to enhance the quality of writing in architecture, planning and related disciplines. Likewise, from an entrepreneurial perspective, Ilerisoy et al. (2021), respond to the question of whether architectural
education can have a positive impact on entrepreneurship attitudes and whether it encourages managerial skills. Their work hypothesizes and validates that core courses in architectural education have an impact on individuals’ entrepreneurial intentions.

Four additional articles were published since 2022 addressing the multifaceted aspects of the knowledge space of architectural education and design pedagogy. Al Khalidi et al. (2022) provides a comprehensive mapping of the topics of postgraduate architectural theses while underscoring the way they have evolved, have been influenced by community needs, and the coexistence of interdisciplinarity. Garcia Cervantes and Hinojosa (2023) demonstrate the need for flexible and sensitive approaches that place communities in the centre, especially in informal urban settlements. They argue that implementing service-learning approaches in informal settings using online tools can generate meaningful experiences, even in cases where courses are short, and resources are limited. Calikusu et al. (2023) develop a case for investigating the impact of the design studio on the perception of sustainability and demonstrate that learning in both design studios and theoretical lectures need be more effective in improving the awareness and understanding of sustainability. Finally, Hassanpour (2023) introduces efforts towards new teaching and learning opportunities and pedagogical developments by articulating the experience of an online first-year architecture design studio during the COVID-19 pandemic.

4.2 The knowledge space of architectural and urban sustainability and resilience

The architectural and urban sustainability and resilience knowledge is a wide-ranging knowledge space with significant contributions. These are either exclusively focused on aspects relevant to this knowledge space directly or situated within other knowledge spaces with key elements relevant to sustainability or resilience (Salama, 2022). This has expanded over recent years with in-depth research approaches that address context specificities.

From a technical-experimental perspective, the work of (Dabaieh et al., 2020) assesses the carbon impact for a minus carbon experimental refugee house in Sweden, utilising life cycle assessment as a tool for this experiment. The results demonstrate that using local plant-based materials such as straw, reeds and timber, together with clay dug from the vicinity of the construction site, can significantly reduce the carbon footprint of temporary shelters, while further attaining a negative carbon impact of 226.2 kg CO₂ eq/m². Assem et al. (2020) develop and implement a mechanism for the smart management of post-conflict city reconstruction efforts. Their work integrates building information modelling and geographic/geospatial information systems in a platform that allows for real-time analysis, reporting, strategic planning, and decision-making. This supports the management of reconstruction operations with effective coordination and collaboration, across all parties involved.

The work of Sijakovic and Peric (2021), offers a comprehensive analysis of a spectrum of sources including academic articles, guidance and policy documents and global reports on climate change. Their analysis categorises the results into strategies, objectives and principles and advances the discussion by providing tangible design components that help reduce CO₂ emissions, while decreasing the vulnerability index of urban systems.

In the context of Australia, Dupre and Bischeri (2020) call for exploring certain elements related to resilience, especially with respect to the role of architecture in contributing to community resilience against climate change. Their effort accentuates architectural strategies for facilitating resilience in rural Australian towns. Reporting on one of the latest projects in Chicago that symbolises the city’s long history and serious commitment to urban sustainability, Al-Kodmany (2021) synthesises various aspects of the newly developed Chicago Riverwalk, Illinois. He elucidates the design process that transformed a dilapidated infrastructure and derelict riverbanks into an attractive gathering civic space, a linear urban park, and a functional transportation corridor.

While numerous sustainable built environment issues are addressed in different ways in most of these recent articles, there are also papers that articulate a more focussed message, and advocate for how sustainable design and the planning of buildings, spaces, and cities must be advanced. In the context of the United States, McGee et al. (2022) develop and test a Biophilic Interior Design Matrix (BID-M) which was created to assist designers with identifying biophilic interior design features for optimising nature integration, for evidence-based design. Kozlowski et al. (2022) identify a new “Borneo approach” to urban development. The results of its examination represent a set of key priorities for the central, state, and local governments of Malaysia, Brunei and Indonesia. This offers planners and decision-
makers possibilities for establishing a new tropical urban planning initiative, based on guiding principles witnessed in other urban environments in fragile and sensitive tropical regions. Finally, the recent special issue of Archnet-IJAR explores sustainable solutions for tropical Asian cities, and examines the nexus between architecture, technology, and heritage. The theme was developed in response to material and conceptual challenges arising from the increasingly complex social, cultural, and environmental conditions, that have made urban spaces in tropical Asia the focal point for much recent architectural debate with respect to globalisation, urban sustainability, and socio-economic development (Tan, 2023).

5. Where reliable architectural pedagogy and SDGs Meet.

Nine articles were selected out of a wide array of submissions, exceeding thirty-five. They each align with the United Nations SDGs and place emphasis on Goal 4 (Quality Education), as was stated in the initial call for papers.

The work of Akgun et al. (2023) captures an important analysis of two editions of the Architecture Guide to the UN 17 SDGs, developed by the efforts of professional organisations or consortiums and published by the UIA between 2018 and 2020. They explore the cases of buildings and projects presented as best practices in these guidebooks, while highlighting various ways of capturing the SDGs in the architectural studio when designing the course content, process, and teaching materials. Their analysis instigates a model for SDG-focused studio teaching, while emphasising the need for research grounded on SDG-focused pedagogies.

In the context of Egypt, El-Kholei and Yassein (2023) argue, and rightly so, that sustainable development requires a mental shift that provokes behavioural change. And furthermore, that education is central to sustainable development as it alters an individual’s worldview. Their work explores an important gap by juxtaposing the way in which the SDGs have been adopted and adapted in the architecture curriculum in many departments and schools. Simultaneously, the UN assessment reports that Egypt faces challenges in meeting these goals. Their approach establishes links between teaching methods in the studio and instructors’ understanding of sustainability. Revealing the lack of clarity on the role of sustainable developments in architectural and planning education in Egypt, which influences both professional practice and scientific research, the outcome of their work highlights the role of universities in embedding sustainable development and in transforming students’ mindsets. Briant et al. (2023) present Work Integrated Learning (WIL) as a panacea for knowledge fragmentation, and the separation between what is vocational and what is intellectual, and the associated conflicting perspectives on the desired graduate attributes. Employing a Delphi survey of the architecture profession engaged in WIL programmes, their research develops important insights on the key benefits and attributes of WIL, and its experiential value as part of a quality higher education system that fully considers graduate employability.

At an experimental level, three articles further advance the discourse and search for responses to critical questions. On the one hand, in the context of a postgraduate architectural theory module, McEwan (2023) poses the complex question of how architectural pedagogy can articulate critical modes of production, that contribute to quality education in the time of the Anthropocene. Arguing for updating of the notion of typology and for transdisciplinary thinking and acting towards effective knowledge production, McEwan’s work develops inventive techniques and conceptual frameworks, for supporting approaches where disciplines adopt differing stances about emerging social and political challenges.

On the other hand, Datey (2023) hypothesises that by including exemplars, voices, and practices from both global north and global south contexts, the understanding of sustainability is deepened. She interrogates this postulation in an inclusive, experimental, and decolonised space, for co-construction of knowledge about designing sustainable environments. Her work contextualises a studio experiment that integrates design with seminars and lectures, while engaging students in experiential learning through doing/making to develop critical thinking skills and encouraging them to synthesise and transfer learning to and from other settings and contexts. In a similar line of thought, the third article is developed as an outcome of a summer school which is part of an on-going Erasmus + CBHE (Capacity Building in Higher Education) project, entitled ‘Transforming Architectural and Civil Engineering Education towards a Sustainable Model’ (TACEESM). The pedagogical approach adopted in this short-
term studio follows an education for sustainable development (ESD) model, by linking formal and 
informal learning, and targeting the development of the key capabilities required for promoting 
sustainable progress: participation and collaboration, along with inter- and trans-disciplinarity. 
Combining active participant observation methods with descriptive survey research, the experiment of 
Zejnilovic et al. (2023) appraises the perspective of 27 participating students, who worked with 15 
professors interchangeably, during a two-week design studio course.

Articulating new cases at the forefront of the recent discourse on the role of technology in providing 
quality higher education in architecture, three papers respond to the utilisation of technology in 
pedagogy, while demonstrating the importance of instigating new modes of learning. In this respect, 
Sopher and Lescop (2023) react to the need for updating the atelier pedagogical model to support 
sustainable quality education in remote inter-university studios. They develop and test the immersive 
atelier model (IAM) as a pedagogical approach for remote inter-university studios, that promote quality 
education while demonstrating its benefits through observations and post-experiment attitude survey. In 
a similar manner, the study of Zairul et al. (2023) promotes blended learning which has the capacity to 
enable students to access materials from anywhere at any time, while enjoying the benefits of face-to- 
face (F2F) support, instruction, and mentoring. Their work provides a thematic review (TR) of articles 
included in SCOPUS and Web of Science (WOS) databases, with a focus on those that provide 
directions for the future of studio teaching practices and the prospects they offer. Similarly, Zhu et al. 
(2023), argue for the application of massive open online courses (MOOCs) and the way in which these 
can help to integrate SDGs into architectural curricula. Based on establishing a four-dimensional 
evaluation model built on the characteristics of MOOCs, their study articulates the essence of MOOC 
development and its role in promoting the sharing and continuing of global education resources.

Each of the nine articles share the common objective of developing and enhancing inclusive and 
equitable quality education and lifelong learning opportunities for everyone. They approach this while 
cogitating the distinct challenges and opportunities in their respective contexts. Notably, certain articles 
delve deeper and explore connections to other SDGs, such as impacts of globalisation, sustainable 
architecture and urbanism, social sustainability, the dynamics between the global north and global 
south, decolonisation, and the challenges posed by climate change.

6. Conclusion: Cultivating SDGs-centred architectural and design pedagogies

There is great value in sharing knowledge on best practices and local approaches relevant to the 
incorporation of SDGs into architectural pedagogy. Underlining the importance of integrating SDGs 
into architectural education and design pedagogy, this overview highlights the scarcity of academic 
research and professional knowledge related to its key message on pedagogy and sustainability. 
Emphasising the need to understand and appreciate diverse efforts and approaches to achieve a 
sustainable future, this overview situates the content of this special issue within the wider efforts of 
professional organisations and offers reflections on the nine published articles.

Emphasis is placed on the recent efforts made by professional organisations to integrate SDGs into 
architectural education and practice. This overview explores the intersections of sustainable design 
knowledge in architectural education, validation and accreditation efforts undertaken at national and 
global scales. It presents narratives on global efforts promoting excellence in architectural pedagogy 
with SDGs as a key priority. It discusses the strengthened knowledge spaces of pedagogy and 
sustainability supported by Archnet-IJAR and offers analytical reflections on the nine articles published 
in the special issue.

The discussion asserts the commitment to shaping the future of architectural education from the 
perspectives of SDGs by national organisations, such as the AACA, ARB, RIBA, and NAAB, and global 
organisations such UIA, its Education Commission, and the UNESCO-UIA Validation Council of 
Architectural Education. It also demonstrates how a global award on innovation in architectural 
education, with SDGs embedded in its requirements, can generate responsive architectural and urban 
solutions. These can act as best practices, and bridge the gaps between architecture and other 
disciplines, architects and communities, as well as between thinking and making, the intellectual and 
the vocational, and the university campus and its broader context, while also offering insightful 
articulations that pave the road towards a future sustainable built environment.
The nine articles selected for this special issue show a clear alignment with SDGs, with a particular focus on Goal 4 (Quality Education). The key contributions they offer can be summed up as follows:

- Analysing the Architecture Guide to the UN 17 SDGs and developing a model examining for integrating sustainable design architectural education (Akgun et al., 2023).
- Highlighting the need for a mindset shift in sustainable development within Egypt’s architectural curriculum (El-Kholei and Yassein, 2023).
- Proposing Work Integrated Learning (WIL) as a solution for knowledge fragmentation and for enhancing graduate employability (Briant et al., 2023).
- Advocating for alternative modes of critical thinking and transdisciplinary action in architectural pedagogy (McEwan, 2023).
- Emphasising the importance of global perspectives in understanding sustainability (Datey, 2023).
- Demonstrating the benefits of transdisciplinarity in a short-term studio that speaks to sustainable progress (Zejnilovic et al., 2023).
- Developing and testing a validated Immersive Atelier Model while demonstrating its benefits (Sopher and Lescop, 2023).
- Capturing the body of knowledge that provides future directions for architectural pedagogy while promoting blended learning as new mode of delivery (Zairul et al., 2023).
- Exploring the application of MOOCs to integrate SDGs into architectural curricula (Zhu et al., 2023).

While the arguments and cases presented in the articles clarify essential aspects related to the integration of SDGs into architectural pedagogy, it is evident that this knowledge space is still in its infancy. Further research that integrates knowledge generated by the sustainability and pedagogy knowledge spaces as they relate to architecture and urbanism is needed, and especially where these two spaces can combine, to cultivate transformative SDGs-centred architectural and design pedagogies in the future.

References


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Plate 1: Representative posters of each of the four entries awarded for their excellence in addressing Sustainable Development Goals in 2021.


On-Site Collaboration – Architecture and Extreme Environments, The Royal Danish Academy, Denmark.

Living Construction in Rural Communities, Southeast University – Nanjing, China.

Sustainable Design Studio, Tsinghua University, China.

203x305mm (144 x 144 DPI)
Plate 2: Representative posters of each of the four entries awarded for their excellence in addressing Sustainable Development Goals in 2023.

191x303mm (144 x 144 DPI)