PROGRAMME SPECIFICATION (Undergraduate)



1	Awarding Institution	Newcastle University
2	Teaching Institution	Newcastle University
3	Final Award	BA Honours
4	Programme Title	Architecture
5	UCAS/Programme Code	K100
6	Programme Accreditation	Royal Institute of British Architects (RIBA) and the Architects Registration Board (ARB)
7	QAA Subject Benchmark(s)	Architecture
8	FHEQ Level	6
9	Last updated	September 2021

10 Programme Aims

The programme aims to ensure that all students graduate with the following attributes:

- 1. Ability to generate ethical design proposals in the context of the climate emergency with understanding of the relevant building physics informing zero carbon design principles;
- Apply analytical techniques and problem-solving skills to different types of architectural questions using understanding of a body of knowledge, some at the current boundaries of professional practice and the academic discipline of architecture;
- 3. Ability to apply a range of communication methods and media to present design proposals clearly, creatively and effectively;
- 4. Understanding of the alternative materials, processes and techniques that apply to architectural design and building construction;
- 5. Ability to use the principles of collaborative and interdisciplinary work to critically evaluate evidence, arguments and assumptions in order to make and present sound judgments within a structured discourse relating to architectural culture, theory and design;
- 6. Knowledge of the context of the architect and the construction industry, and the professional qualities needed for decision making in complex and unpredictable circumstances; and
- 7. Ability to identify individual learning needs and understand the personal responsibility required for further professional education.

In addition, the programme will:

8. Comply with University policies and procedures, satisfy the requirements of the QAA Benchmark statement for Architecture and meet the requirements of the Architects Registration Board and the Royal Institute of British Architects for professional accreditation for Part 1, as well as the European Commission's

Architects Directive. It will also satisfy the FHEQ's requirements for a Level 6 award.

11 Learning Outcomes

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, qualities, skills and other attributes in the following areas. The programme outcomes have references to Architects Registration Board prescription of qualifications (2011), ARB Guidelines for Institutions on Environmental Sustainability and Fire & Life Safety Design (2021), Royal Institute of British Architects Procedures for Validation (2020), incorporating Themes and Values for Architectural Education, Article 46 of the EC Professional Qualifications Directive [2005/36/EC] and the QAA benchmark statements for Architecture (2010).

Knowledge and Understanding

On completing the programme students should gain knowledge and understanding across the following themes and values:

DESIGN PROCESSES AND COMMUNICATION

A1 Knowledge of urban design, planning and the skills involved in the planning process (ARB / RIBA General Criteria GC4).

Including a knowledge of:

- a) theories of urban design and the planning of communities;
- b) the influence of the design and development of cities, past and present on the contemporary built environment;
- c) current planning policy and development control legislation, including social, environmental and economic aspects, and the relevance of these to design development.

ETHICAL AND PROFESSIONAL PRACTICE

A2 Understanding of the relationship between people and buildings, and between buildings and their environment, and the need to relate buildings and the spaces between them to human needs and scale (GC5).

Including an understanding of:

- a) the needs and aspirations of building users;
- b) the impact of buildings on the environment, and the precepts of sustainable design;
- c) the way in which buildings fit into their local context.

A3 Understanding of the profession of architecture and the role of the architect in society, in particular in preparing briefs that take account of social factors (GC6).

Including an understanding of:

 a) the nature of professionalism and the duties and responsibilities of architects to clients, building users, constructors, co-professionals and the wider society;

- b) the role of the architect within the design team and construction industry, recognising the importance of current methods and trends in the construction of the built environment;
- c) the potential impact of building projects on existing and proposed communities.

STRUCTURE, CONSTRUCTION AND RESOURCES

A4 Knowledge of physical problems and technologies and the function of buildings so as to provide them with internal conditions of comfort and protection against the climate (GC9).

Including knowledge of:

- a) principles associated with designing optimum visual, thermal and acoustic environments;
- b) systems for environmental comfort realized within relevant precepts of sustainable design;
- c) strategies for building services, and ability to integrate these in a design project.
- climate literacy and the relationship of architectural design and construction to Fabric First principles for energy conservation, Cradle to Cradle design and materiality, and Passivhaus design and construction;
- e) demonstrate climate literacy in architectural practice, and architectural propositions delivering health and safety for all actors, agents and stakeholders in the design, construction, and use of the built environment.

A5. Knowledge of the industries, organisations, regulations and procedures involved in translating design concepts into buildings and integrating plans into overall planning (GC11).

Including knowledge of:

- a) the fundamental legal, professional and statutory responsibilities of the architect, and the organisations, regulations and procedures involved in the negotiation and approval of architectural designs, including land law, development control, building regulations and health and safety legislation;
- b) the professional inter-relationships of individuals and organisations involved in procuring and delivering architectural projects, and how these are defined through contractual and organisational structures;
- c) the basic management theories and business principles related to running both an architect's practice and architectural projects, recognising current and emerging trends in the construction industry.

HEALTH AND LIFE SAFETY

A6. Demonstrate knowledge of the requirements, processes and practices of designing, constructing and maintaining buildings with respect to Health and Safety, Fire Safety, and the roles and responsibilities of the architect in developing and maintaining competency in this field.

Including knowledge of:

- a) the principles of Fire Safety Design: ignition, development and spread of fire; fire performance of construction materials; design for fire safety;
- b) principles and methods for the selection of materials and on/off site construction methodologies providing for safe construction, inhabitation and maintenance.

Teaching and Learning Methods

Acquisition of knowledge and understanding is achieved through a combination of lectures, seminars, study visits, case studies, debates, reviews and studio-based tutorials. Students are expected to augment the formal teaching sessions and readings with independent observation, research, analysis and reading.

Assessment Strategy

Assessment methods and their relation to learning outcomes are specified in each individual module outline. Knowledge and understanding is assessed through a combination of unseen examinations and by various forms of coursework – essays, case studies, dissertations, student presentations and design project work.

Intellectual Skills

On completing the programme students should be able to demonstrate intellectual skills and developing professional competencies as follows:

HISTORY, THEORIES AND METHODOLOGIES

B1 Knowledge of the histories and theories of architecture and the related arts, technologies and human sciences (GC2).

Including a knowledge of, and ability to evaluate and / or apply:

- a) the cultural, social and intellectual histories, theories and technologies that influence the design of buildings;
- b) the influence of history and theory on the spatial, social, and technological aspects of architecture;
- c) appropriate theoretical concepts to studio design projects, demonstrating a reflective and critical approach;
- d) research literacy in the context of developing an understanding of an architectural question, and informing the processes and practice of design, history, theory and criticism.

B2 Knowledge of the fine arts as an influence on the quality of architectural design (GC3).

Including a knowledge of, and ability to evaluate:

- a) how the theories, practices and technologies of the arts influence architectural design;
- b) the creative application of the fine arts and their relevance and architecture;
- c) the creative application of such work to studio design projects, in terms of their conceptualisation and representation.

B3 Understanding of the methods of investigation and preparation of the brief for a design project (GC7).

Including the knowledge and skills to:

- a) critically review precedents relevant to the function, organisation and technological strategy of design proposals;
- b) appraise and prepare building briefs of diverse scales and types, to define client and user requirements and their appropriateness to site and context;
- c) recognise the contributions of architects and co-professionals to the formulation of the brief, and the methods of investigation used in its preparation.

Teaching and Learning Methods

The development of Intellectual skills is achieved through a combination of lectures, seminars, study visits, case studies, debates, reviews and studio-based tutorials. Studio design projects and personal research projects such as the dissertation and the design thesis provide opportunities for students to develop their intellectual skills through the awareness, evaluation and application of architectural knowledge. Students are expected to augment the formal teaching sessions and readings with independent observation, analysis and reading and through informal discussion and debate with their peers.

Assessment Strategy

Assessment methods and their relation to learning outcomes are specified in each individual module outline. Intellectual skills are generally assessed in an integrative way through various forms of design project work and through written work and course work including essays and dissertations.

Practical Skills

On completing the programme students should be able to demonstrate practical skills in the following:

DESIGN PROCESSES AND COMMUNICATION

C1 Ability to create architectural designs that satisfy both aesthetic and technical requirements (GC1).

Including the ability to:

- a) prepare and present building design projects of diverse scale, complexity, and type in a variety of contexts, using a range of media, and in response to a brief;
- b) understand the constructional and structural systems, the environmental strategies and the regulatory requirements that apply to the design and construction of a comprehensive design project;
- c) develop a conceptual and critical approach to architectural design that integrates and satisfies the aesthetic aspects of a building and the technical requirements of its construction and the needs of the user.
- d) practice a developing competency in architectural design with material, technical, environmental and structural responsibility, awareness and understanding.

C2 Understanding of the structural design, constructional and engineering problems associated with building design (GC8).

Including the ability to:

- a) investigate, critically appraise and select alternative structural, constructional and material systems relevant to architectural design;
- b) appraise strategies for building construction, and the ability to integrate knowledge of structural principles and construction techniques;
- c) appraise the physical properties and characteristics of building materials, components and systems, and the environmental impact of specification choices.

HEALTH AND LIFE SAFETY

C3 The necessary design skills to meet building users' requirements within the constraints imposed by cost factors and building regulations (GC10).

Including the skills to:

- a) critically examine the financial factors implied in varying building types, constructional systems, and specification choices, and the impact of these on architectural design;
- b) understand the cost control mechanisms which operate during the development of a project;
- c) prepare designs that will meet building users' requirements and comply with UK legislation, appropriate performance standards and health and safety requirements;
- d) apply the first principles of Fire Safety Design to design proposals.

Teaching and Learning Methods

The development of Practical skills is achieved mainly through the integrative environment of the design studio projects and through student reviews and presentations. Lectures in professional practice help students to contextualise practical skills within the context of architectural practice. Students are expected to augment the formal teaching sessions and readings with independent observation, analysis and reading.

Assessment Strategy

Assessment methods and their relation to learning outcomes are specified in each individual module outline. Practical skills are mainly assessed in an integrative way through various forms of design project work and through course work written essays / submissions.

Transferable/Key Skills

On completing the programme students should be able to:

D1) Creatively and logically integrate the thematic areas of the syllabus in the resolution of moderately complex spatial and organisational problems;

D2) Select and use appropriate visual, verbal and written communication methods and media (including sketching, modelling, digital and electronic techniques) to convey information, arguments, design ideas and proposals to both specialist and non-specialist audiences;

D3) Manage and appraise their own working practices, whether working independently or collaboratively, to initiate a culture of lifelong learning;

D4) Articulate an argument, orally, graphically and/or in written form, based on personal analysis and research;

D5) Employ relevant mathematical techniques and computer software to develop and communicate ideas and concepts;

D6) Listen, and critically respond to, the views of others.

Teaching and Learning Methods

D1 is embedded in all activities carried out in the course, especially within the design projects. Similarly, D3 and D6 are also part of design, supported by formal lectures and seminars on learning skills which lay the basis for continual professional development. Communication and presentation skills such as D2 and D4 are achieved through workshops, oral presentations, critiques, seminars, case study reports, essays and studio project presentations. Additionally informal and formal discussion with staff and practitioners forms an integral part of the development process for studio design projects. The strategy also involves the development of the students' IT skills from the beginning of

the course progressively from image manipulation to CAD and 3D modelling and simulation applications. This is done by introductory lectures and tutorials and by incorporation of computer support sessions in studios. Students are also encouraged to heavily use on-line course information and to interact in discussion groups and virtual studios. Numeracy skills D5 are developed by formal lectures on basic techniques of application and reinforced by provision of tutorials incorporating worked examples and computer simulation

Assessment Strategy

D1, D3 and D6 are not independently assessed, but proficiency in them is demonstrable within the many design assignments students are asked to produce. Communication, presentation and IT skills (D2 and D4) are assessed through the presentation of studio projects, their review and critique, together with the submission of an academic portfolio. Assessment of oral presentations and seminar case studies is undertaken, whilst IT skills are also assessed by means of course work activities. On-line assessments of students' usage of course contents and information are also monitored using Blackboard facilities. Numeracy skills (D5) are assessed in various coursework exercises and examinations involving numerical calculations and computer-based exercises.

12 Programme Curriculum, Structure and Features Basic structure of the programme

The programme extends over three years full-time and is structured on a modular basis. Each year consists of modules which count for 120 credits, where each 10 credits require 100 hours of student work, including taught and contact time, assessment work and 'student-centred learning'. Modules vary in size. Lecture-based modules are 10 or 20 credits, whereas the design project-based modules weight for 60 credits at each stage.

Key features of the programme (including what makes the programme distinctive)

The School of Architecture, Planning and Landscape has established an International reputation for its research into Architectural History and Theory, Architectural Humanities, Critical Practice and Experimental Architecture. The BA structure and curriculum aims to build on these strengths, employing research-informed teaching alongside practitioner-informed tutoring. Thus, the programme seeks to encourage both the fostering of an independent, research-led attitude towards design, whilst also providing opportunities for students to work collaboratively on occasions in much the same way that they might in architectural practice. Overall, the programme aims to develop graduates who are able to make a positive contribution to architectural practice underpinned by a theoretically informed and reflective approach to design.

Whilst design projects form the central core of the curriculum, parallel lecture courses and independent study projects (e.g., Dissertation) aim to broaden the knowledge base that inform students' design decisions, as well as their awareness of wider issues related to architecture. Lecture courses are co-ordinated, both in terms of content and timing, so as to support the design programme without compromising their own subject integrity. 'Strategic' lectures/seminars set out the principles upon which each subject is based, and these are then supplemented as required by 'tactical' lectures/seminars/visits/exercises, which frequently link directly with the studio projects. This is a highly integrated approach to teaching and learning that relies on effective teamwork. All design and non-design modules are deemed to be core.

Design Modules (broadly ARB / RIBA Graduate Attribute GA1):

These provide a method of teaching and learning in which students 'learn by doing' in a situation and environment which, to some extent, simulates practice.

The proportion of student time and effort devoted to design projects is equally distributed across the degree, with the Architectural Design modules accounting for 60 credits at each Stage.

Teaching is predominantly structured around a continuous sequence of studio-based projects, designed to develop architectural knowledge and skill as well as design judgement. The learning experience is cumulative, and the level of complexity and independence of design enquiry builds over the three-year period, as students progressively acquire greater fluency in techniques and depth of understanding.

The year commences with a one-week Charette project that asks students from all years (and other design programmes) to work together in groups to respond to thematic briefs and to make architectural interventions on the University campus.

Stage 1 begins with projects and interventions that, whilst they are essentially simple in terms of form, reveal the nature of architectural design as multivalent and complex. A series of projects build in scale and complexity and along the way students are asked to focus on a number of diverse factors including: the form and character of interior spaces and how these relate to particular uses; proportions of the body and material properties as design drivers; intervening within a specific context; and the implications of detailed decisions about lighting, materials and construction in relation to functional requirements. The final project demands an appropriate, integrated design response to a site and to a set of specific activities within a setting of strong visual, climatic, cultural and social character. The relevance of the fine arts is also introduced.

Stage 2 situates architecture in a wider context of urban, political, cultural and social issues, explores the relation between private and public realms, and develops an integrated approach to technical, environmental and material aspects from strategy to detail. There is a thematic focus to each semester's projects and studio tutors inflect briefs according to their own practice interests, giving students a taster in specialisation. Semester 1 concentrates on the relation between home and city, beginning with an urban study and masterplanning exercise, before taking on part of it to design a community housing scheme from neighbourhood to unit-scale. In Semester 2, the focus moves to spatial experience, and architecture's relation to digital and material culture, culminating in a project for an arts/community programme in a sensitive urban context. Several inter-related themes are developed throughout the stage and include: learning from architectural precedents; responding to location (city- and town-scape and their associated contexts); understanding architecture as produced by interacting social, cultural and economic forces; defining the thresholds between private & public space and the integration of environmental strategies. Throughout the year, students are asked to keep a 'process and reflect' learning journal to record their skills and ways of working, supported by series of 'tools for Designing' workshops and lectures.

Stage 3 offers the choice of a series of year-long design studios that, whilst very different in terms of thematic focus, site and programme, all follow the same structure of phases, deadlines and expectations, developing towards an integrated project for a public building of equivalent scale and complexity. Each studio begins with a 6-week exploratory primer project to develop specialist knowledge, ways of working and skills related to the studio theme, and organises an optional week-long European study visit to a location relevant to the studio. Technical consultancies and reviews, and lectures in Architectural Technology timed to coincide with project phases, support the embedding of structural, environmental and constructional thinking throughout the design process, and this integration is demonstrated in a two-part technical report. Lectures, symposia, seminars and assessments in Professional Practice and Theory into Practice are similarly coordinated with the design studios to establish the critical and theoretical context of the project, and practical and procedural considerations associated with its realisation.

Non-Design Modules:

Cultural and Theoretical Context of Design (broadly ARB / RIBA Graduate Attribute GA4)

A broad overview is followed by closer scrutiny of particular aspects. Fields of specialist knowledge are developed through the dissertation, and alongside Stage 3 design studios.

At **Stage 1**, the course provides an Introduction to Architecture, with an overview of histories, key principles and theories, from a predominantly European standpoint, spanning from classical times to the present day. The module uses both canonical international works and regional examples students can visit to introduce key topics such as: vernacular and formal architectures; experiential factors of architecture; architectural space; tectonics and materiality. It introduces the epochs in which these buildings emerge and related developments in the history of politics, ideas, art and science.

Following this overview, **Stage 2** explores specific aspects and issues About Architecture in greater depth. Organized in three thematic blocks – cities, cultures and space – the course examines major currents in architectural and urban thinking, and the social, political, economic, environmental, technological and ideological factors that have shaped, and continue to shape, the production and design of buildings and cities since the emergence of modernity. This introduces students to key concepts and theories for thinking about architecture, space and the built environment and to the importance of disciplinary perspectives from beyond architecture such as planning, urban design, social sciences, anthropology, philosophy, cultural studies, history and the humanities.

In semester 2, the course draws on staff specialisms to enable students to select one of these areas to pursue in more detail through elective seminars towards their own dissertation or dissertation project. Concurrently, students are introduced to Dissertation Studies and Research Methods to support their individual research. Working with a supervisor with relevant expertise, students produce an abstract on a topic of their choosing at the end of Stage 2 that will lead to an 8,000-word dissertation or 5,200-word dissertation project which is completed during semester 1 of **Stage 3**.

Stage 3 focusses on linking Theory into Practice. Symposia exploring diverse critical approaches to design and representation encourage students to draw on their own research skills and knowledge of architecture's histories and theoretical contexts to inform their year-long studio design projects. The module guides students to articulate the critical position and architectural, cultural and theoretical references underpinning their work, and to reflect on how the particular approach taken relates to wider issues in architectural research and practice.

Technology and Environment (broadly ARB / RIBA Graduate Attribute GA3)

Technological issues are addressed in a sequence that is designed to support and inform studio-based activity.

Two **Stage 1** lecture series in Architectural Technology introduce various aspects of the physical performance, constructional character (tectonics) and qualitative experience (atmosphere) of buildings, together with the principles and techniques involved in achieving them. In Semester 1, the emphasis is on understanding how construction is an integrated part of architectural thinking, and how different design intentions lead to a diversity of possible solutions. A series of case studies introduce the wide range of technical themes, concerns, and approaches relevant to architecture. Semester 2 provides a grounding in key technical principles and strategies, with inter-related strands in environmental design, structural design, building construction and materials. With an emphasis on domestic-scale construction in timber, the module supports the development of technical thinking in design studio.

At **Stage 2**, lectures in Architectural Technology and Environmental Design and Services ensure that construction, structures, atmosphere, environment, services and regulatory frameworks are considered integrally, again with strong links to studio projects. As the stage progresses the emphasis shifts from tectonic intentions, construction systems, detail, environmental performance and energy conservation in small-scale projects, to strategic approaches to fire, access, servicing, ventilation, lighting and acoustics at medium-scale complexity. The knowledge and understanding lays the foundations for the yet greater complexities addressed in Stage 3.

Architectural Technology in **Stage 3** extends existing knowledge to include structural, constructional, environmental, accessibility and fire strategies for medium-large scale buildings. Lectures focus on the role of the designer in understanding and evaluating different possible technical solutions, according to a range of performance, resource efficiency, tectonic and other considerations, selecting those most appropriate for a project and integrating them into a coherent design proposal. The module integrates closely with the year-long design project, which includes a pattern of technical consultancies, reviews and interim submissions to support technical resolution of projects. Students produce a comprehensive report, which documents the development and refinement of technical aspects in their projects from strategy to detail and, complementing the design portfolio submission, records the exploration of specialist technical knowledge particular to their studio.

Communication (broadly ARB / RIBA Graduate Attribute GA2)

Most skills are introduced, in an explicit and complementary way, during Stage 1 and are then augmented and developed within the body of the three-year curriculum. In Stage 1, the teaching is partly developed in a specific module in Architectural Representation, and partly integrated with the Design work. In Stages 2 and 3, the teaching is integrated with the Design studio, cumulatively building skills and awareness so that students can choose appropriate techniques for their projects. Additionally, in Stage 3, Theory into Practice engenders a critically informed approach to design methods and representation, and supports students to articulate this.

At **Stage 1**, visual and representational skills are introduced through a series of workshops which feed directly into the design projects. The aim is to gradually expand the ways in which students can use two and three-dimensional techniques (manual and digital) to test, refine and explain their ideas. Architectural Representation is devoted to the teaching of both traditional drawing skills and IT skills (including photography, observational and measured drawing, computer modelling and rendering). All of these are employed in studio-based applications.

At **Stage 2**, visual, representational and oral skills are developed through a series of dedicated 'Tools for Designing' workshops and in the design projects themselves, building on the core skills established in Stage 1 and introducing collage, diagramming, material prototyping, film and mixed media work. Skills in critical thinking and writing, developed at Stage 1 are extended through the teaching and assignments that accompany About Architecture and Dissertation Studies.

All skills are further refined through **Stage 3**, and studios introduce particular techniques appropriate to their thematic interests. Analytical graphic skills and oral/visual presentation skills are most closely monitored at this Stage. During the teaching sessions that mark key stages in a project, each student takes responsibility for summarising and reporting the discussion of another's work. Theory into Practice encourages students to see representational techniques as integral to the development and communication of design ideas and challenges them to situate their own representational approach in relation to architectural history, theory and practice.

At the end of each year, all work is edited and curated into an Academic Portfolio that records the breadth of learning across modules and frames the body of work in terms of

the student's emerging design interests. The process increases in sophistication and refinement at each stage, culminating in a distinctive document that establishes the student's particular skills and individual approach.

Management, Practice and Law (broadly ARB / RIBA Graduate Attribute GA5)

Professional studies commands an increasing proportion of the syllabus over the three years. The Architectural Representation course at **Stage 1** introduces core skills, conventions and competences that enable effective working, individually and in groups.

At **Stage 2**, skills and awareness are developed through the design projects themselves, including issues of working at community and urban scale, and experience collaborating with co-professionals through group projects undertaken with fine art and engineering students. Learning is supported by lectures and contributions from guest practitioners.

At **Stage 3**, a course in Professional Practice and Management introduces the professional aspects of the architect's role and serves as a primer for the first year of practical training. This module introduces office management; working relationships within the industry; the Planning System and Development Control; cost control and issues of health and safety. Individually directed learning is also a feature of the course, which exercises student's analytical, critical and presentational skills to consider the management, practical and legal processes involved in bringing the building to completion on site.

Continuing Professional Development [broadly ARB / RIBA Graduate Attribute GA6]

To some extent this echoes the pattern of study outlined above for Management Practice and Law. In addition, students are asked to undertake a self-reflective exercise in connection with the production of their academic portfolio at the end of each stage in which they are asked to both reflect on their learning experience to-date and also to identify areas for future personal development. Regular interviews take place with project and Personal Tutors to assist students in identifying areas for future personal development.

Programme regulations (link to on-line version)

K100 Programme Regulations 21-22

13 Support for Student Learning

Generic information regarding University provision is available at the following link.

https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

14 Methods for evaluating and improving the quality and standards of teaching and learning

Generic information regarding University provision is available at the following link.

https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

Accreditation reports N/A

Additional mechanisms N/A

15 Regulation of assessment

Generic information regarding University provision is available at the following link.

https://www.ncl.ac.uk/ltds/assets/documents/qsh_progspec_generic_info.pdf

In addition, information relating to the programme is provided in:

The University Prospectus: http://www.ncl.ac.uk/undergraduate/degrees/#subject

Degree Programme and University Regulations: <u>http://www.ncl.ac.uk/regulations/docs/</u>

Please note. This specification provides a concise summary of the main features of the programme and of the learning outcomes that a typical student might reasonably be expected to achieve if she/he takes full advantage of the learning opportunities provided.