

Structural Engineering with Architecture

DN140
STRUCTURAL ENGINEERING
WITH ARCHITECTURE

Year 1

Stage 1 (60 Credit)

STRUCTURAL ENGINEERING
WITH ARCHITECTURE

Years 2 & 3

Stage 2 (60 Credits)
Stage 3 (60 Credits)

STRUCTURAL ENGINEERING
WITH ARCHITECTURE

Years 4 & 5

Two-Stage ME
Stage 1 (60 Credits)
Stage 2 (60 Credits)

MASTER OF ENGINEERING (ME)
STRUCTURAL ENGINEERING
WITH ARCHITECTURE

Graduate
after 5 years with both
BSc (Engineering Science)
and ME

A 3-year bachelor's degree (BSc):

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A 2-year master's degree (Master of Engineering):

https://sisweb.ucd.ie/usis/!W HU MENU.P PUBLISH?p_tag=MAJR&MAJR=NAS2

YEAR 2

History & Theory of the Designed Environment III - Survey Course 2

Construction Materials

Geotechnics 1

Multivariable Calculus for Eng I

Mechanics of Solids

The Engineering & Architecture of Structures 2

Computer Applications in Civil Engineering

Construction Practice

Design and Communications

Statistics & Probability

YEAR 3

History & Theory of the Designed Environment IV - Architecture, Urban and Landscape

Analysis of Structures 1

Design of Structures 1

Multivariable Calculus Eng II

Group Design Project 1

Professional Engineering for Civil and Structural Engineers

Geotechnics 2

Analysis of Structures 2

Group Design Project 2

Energy Systems in Buildings I

For queries on the Programme, please email arturo.gonzalez@ucd.ie

Structural Engineering with Architecture



Presented by Niall Hanratty

Structural Engineering with Architecture



Started my degree in UCD in 2019

- 3-year Bachelors of Science
- 2-year Masters of Engineering

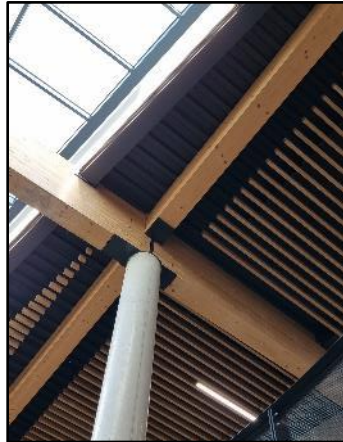
Why I chose Structural Engineering ...

- Degree involves hands-on learning
- Career Opportunities – Public Works
- Following my Interests

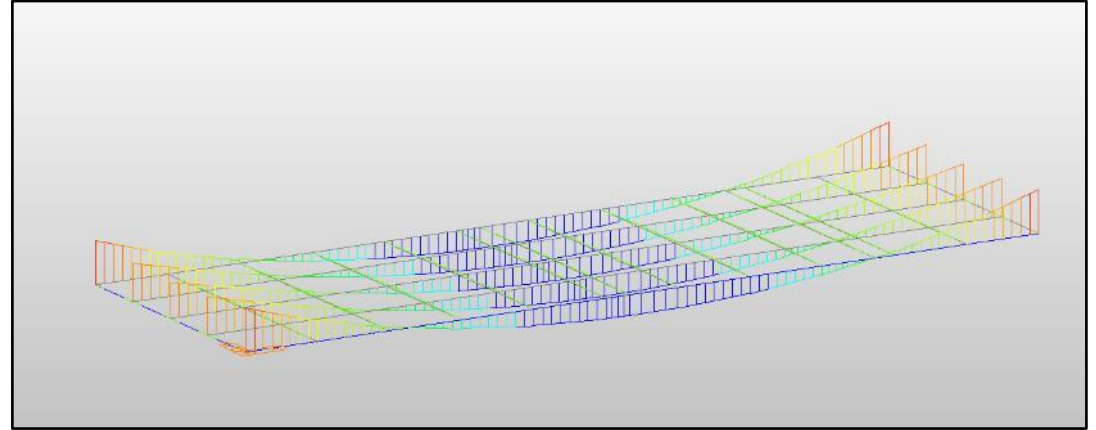


What You'll Cover

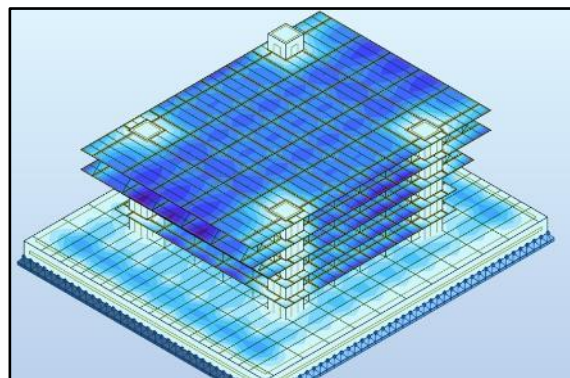
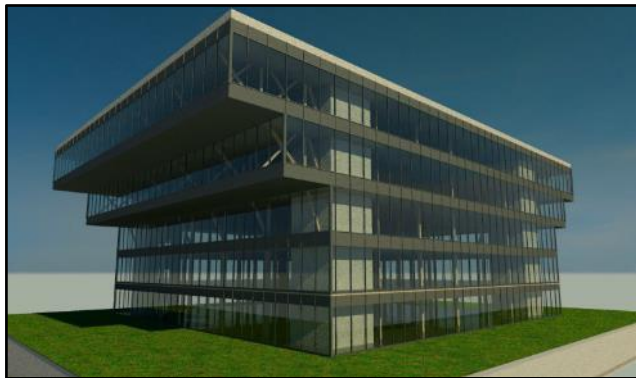
Materials



Analysis



Design



Collaboration

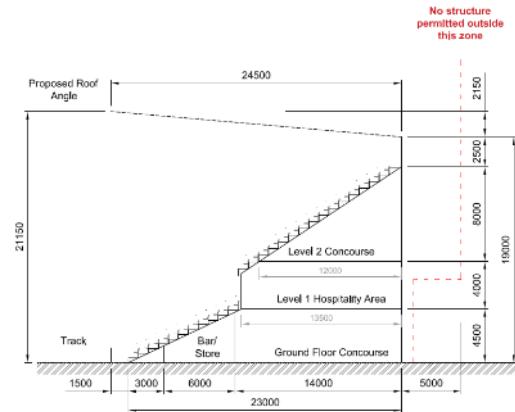


Highlights

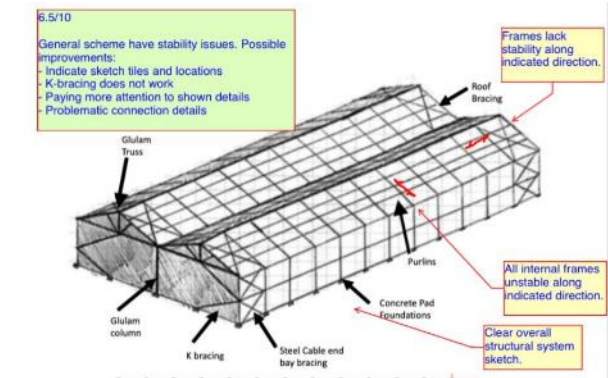
Case Studies

- Collaborate with other engineers.
- Develop structural design for different types of structures.
- Adapt to unique constraints on each project.
- Present designs in front of industry experts.

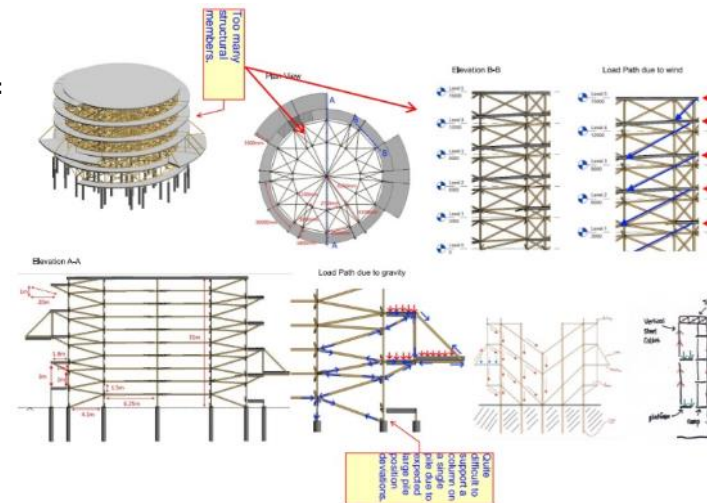
Grandstands



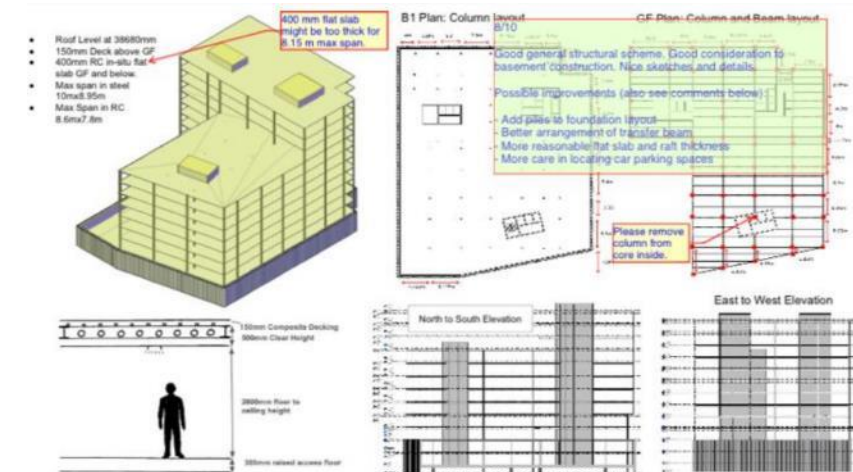
Steel Frames



Timber Structures



Multi-Storey Buildings



Civil vs Structural



Civil Engineering



Transportation



Water

Structural Engineering



Structures

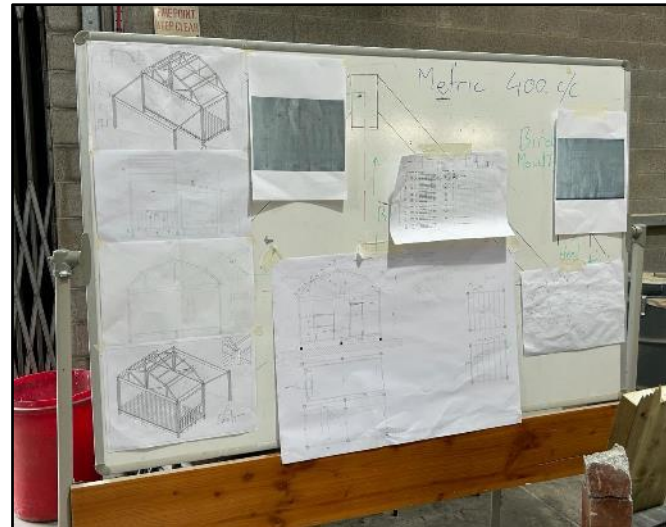


Working with
Architects

Collaborating with Architects

Agency: Design/Build

- Work for a client
- Collaborate on concept with architects
- Work within budget
- Realise the design



Internship

Working for a Contractor

- Hands-on construction experience
- Fast-paced environment
- Oversee and manage construction
- Work directly with Mechanical Engineers and Architects



Low-Carbon 3D Printing

- Work with Emerging Technologies
- Focus on Sustainability
- Hands-on lab work
- Opportunity to Publish



IRISH
CONCRETE
SOCIETY



Open Access Article

The Role of Different Clay Types in Achieving Low-Carbon 3D Printed Concretes

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(This article belongs to the Section Building Materials, and Repair & Renovation)

Professional Life



- Graduated from UCD in 2024
- Joined **Roughan & O'Donovan**



About ROD

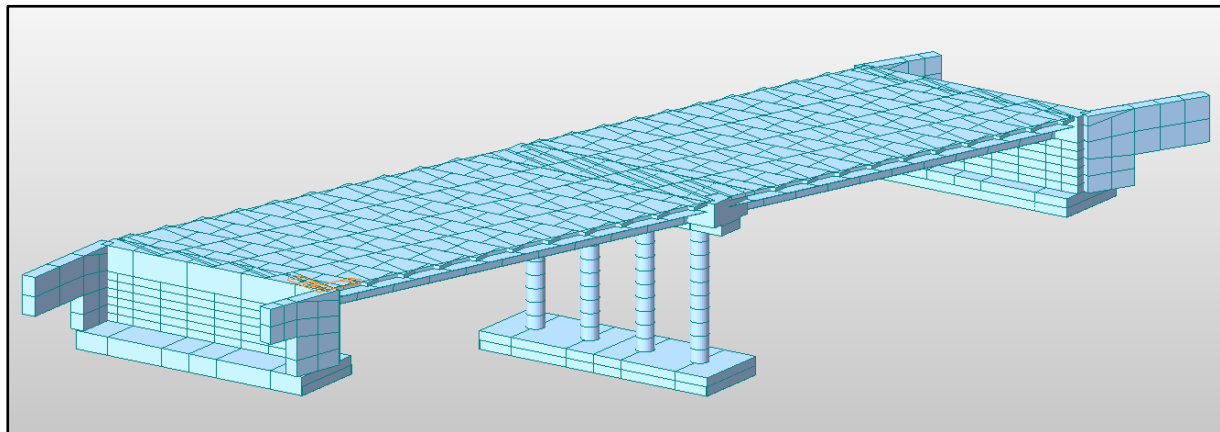
- Leading civil, environmental and structural engineering consultancy
- Founded in 1974, 50+ years in operation
- Independently owned
- Multidisciplinary team of over 250 people
- Offices in Dublin, Cork and Yorkshire
- Reputation for delivering innovative, value-led solutions for clients



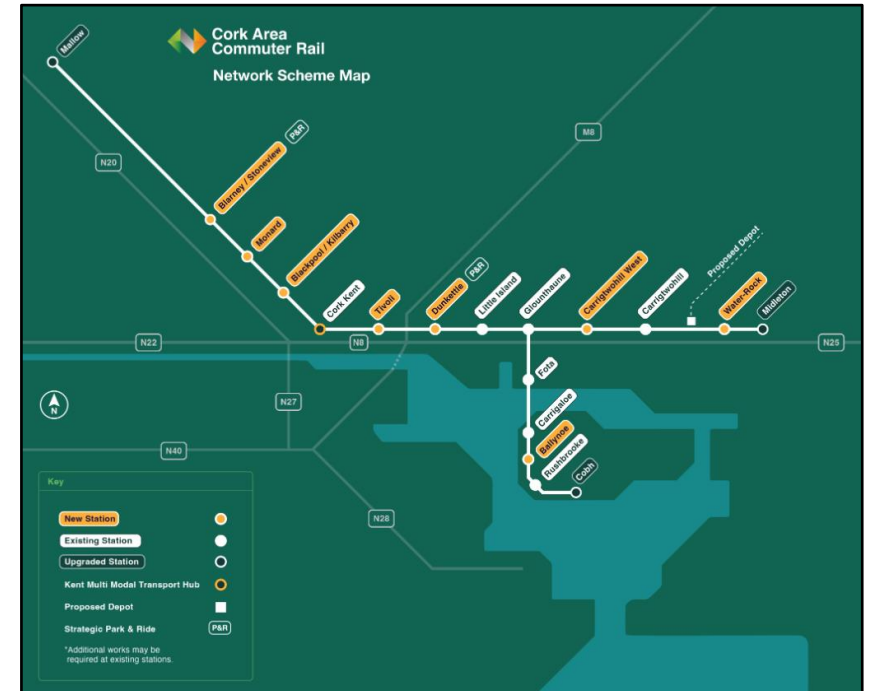
Professional Life

Working with ROD

- Collaborating on the design of Buildings and Bridges
- Working with multi-disciplinary teams
- Continuing work in sustainable construction
- Pursuing Engineers Ireland Chartership
- Join an inclusive and welcoming culture



Professional Life





Cork Area Commuter Rail Programme

ROD and TYP SA are joint designers of this exciting rail programme, which is set to transform transport in and around Cork city by increasing train capacity and frequency and connecting communities from Cobh to Midleton to Mallow along a sustainable rail spine.



Northern Spire Bridge, Sunderland, UK

ROD and Buro Happold provided consultancy services - from tender through to completion of construction - for the permanent works structures on this large-scale infrastructure design and build scheme. Working closely with the contractor to design for an innovative construction sequence significantly reduced the programme and cost for the project.

Transport Project of the Year Award at the British Construction Industry Awards 2019



Ballyshannon Community Hospital, Co Donegal

ROD provided full structural services and associated civil and traffic engineering services for this 80-bed community nursing unit on the site of Shiel Hospital in Co Donegal.

Closing Remarks



Thank you for Listening!

Questions