

Civil Engineering at NUI Galway

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NUI Galway
OÉ Gaillimh

College of Engineering & Informatics

Civil Engineering

Branch of engineering that encompasses the conception, design, construction, and management of

- structures,
- or public works (roads, railways, schools, etc),
- as well as control of the environment for the maintenance and improvement of the quality of life



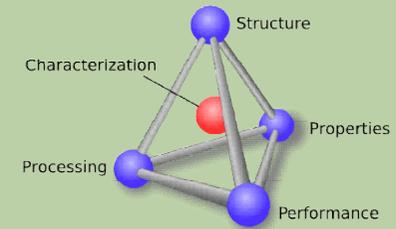
Civil Engineering

Lots of choice within Civil Engineering:

- Structural Engineering
- Geotechnical Engineering
- Transportation Engineering
- Coastal/marine Engineering
- Environmental Engineering



Engineering Materials



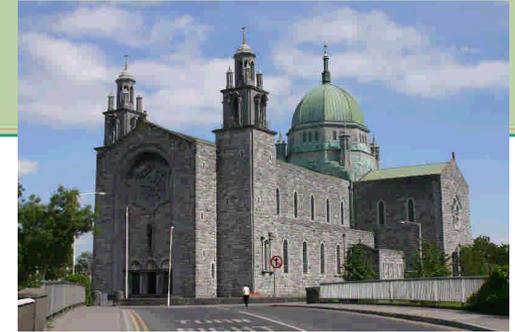
Timber



Concrete



Steel



Masonry



Aluminium



Plastics



Fabric



Glass



Modern: Structural Form and Function



Burj Dubai – the sky's the limit!!



Gdansk – “crooked house”



Lansdowne Rd



Samuel Beckett Bridge, Dublin



The Sage, Gateshead



Geotechnical Engineering



Settlement



Foundations



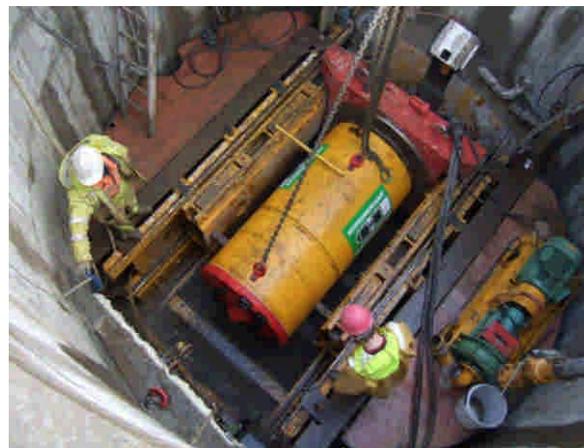
Retaining structures



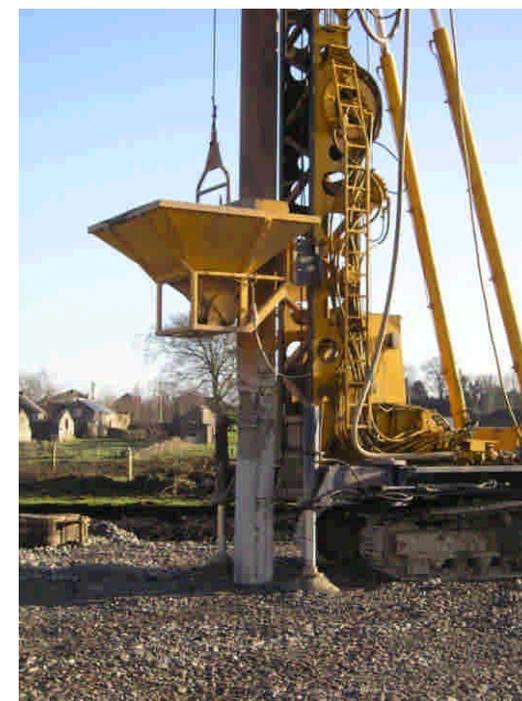
Laboratory testing



Embankments



Tunnelling



Piling



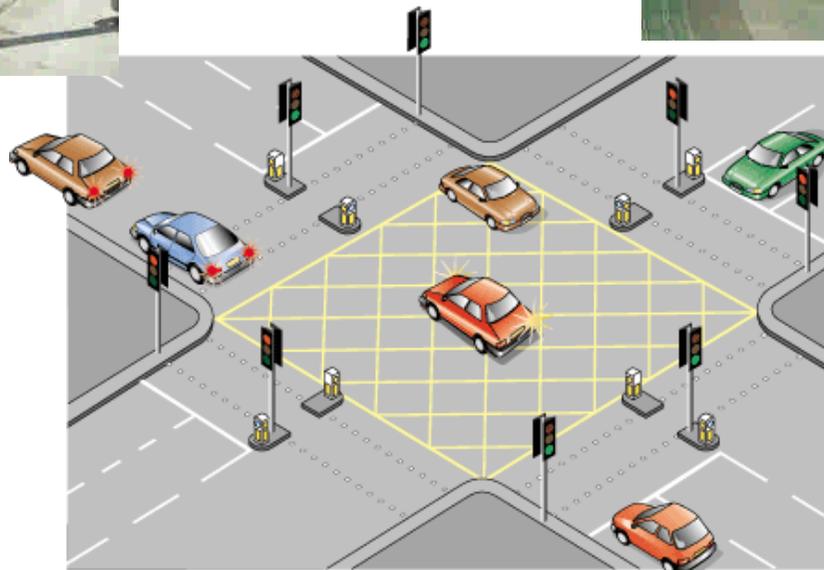
Transport Engineering



Rail



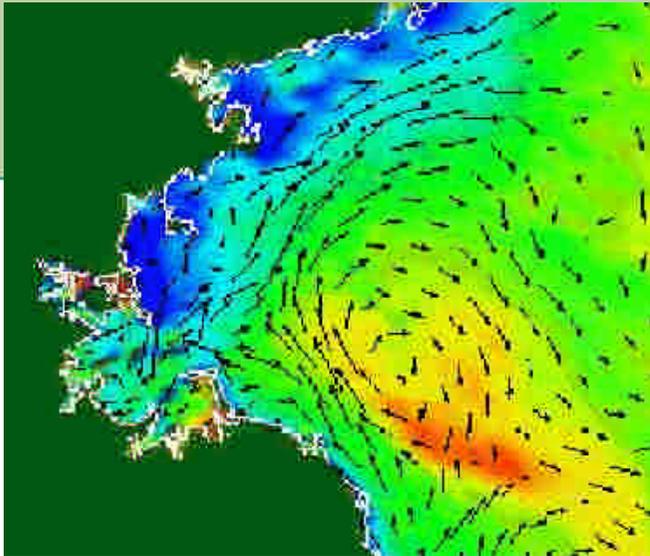
Road



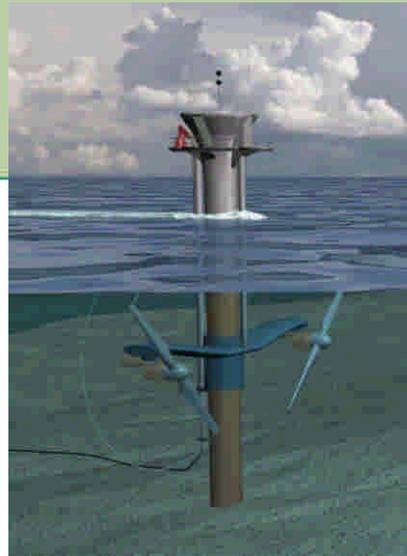
Junction design



Coastal/ Marine Engineering



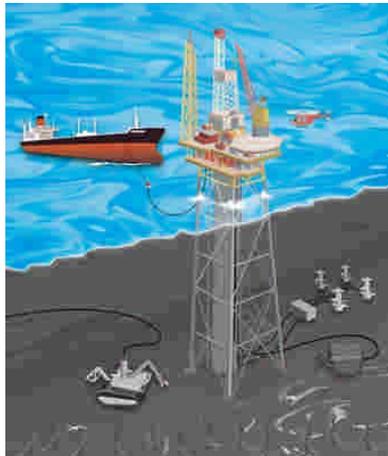
Modelling of currents



Tidal turbines



Offshore wind turbines



Offshore structures



Waves – have lots of energy!

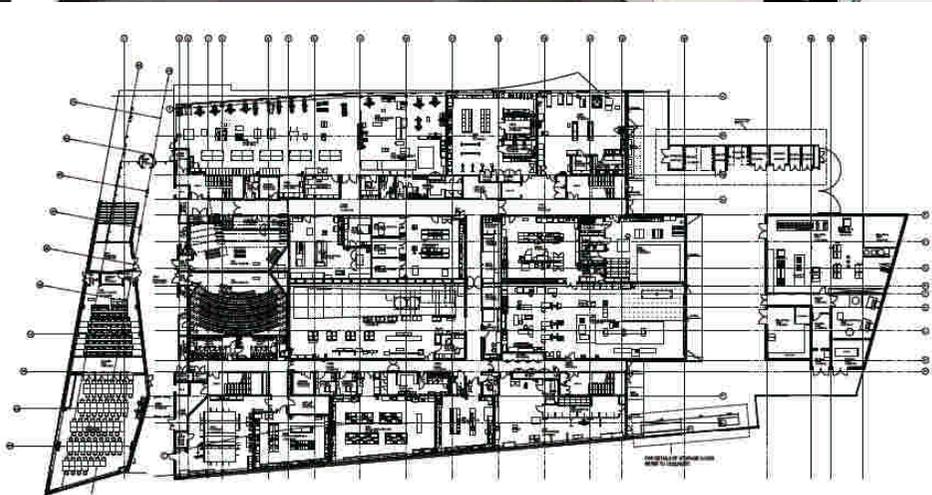


A world-class engineering building

- €40m (Opening Sept 2011)
- 14,000 Square Metres
- State of the art laboratory and teaching facilities
- Focus on the student
- Biggest engineering education building in Ireland



A space for active-learning



NUI Galway
OÉ Gaillimh

Learn by doing



- Laboratories
- Group projects
- Field trips
- Lectures from industry
- Problem based learning
- Work Placement (5 months)



'Real' projects

- Engineering project that fulfils real need of community (2nd Yr).
- Opportunity to work in Developing countries (3rd year)
- Final year projects that have a direct benefit to the community (4th year)



Water project in Zambia



Engineering & Science workshops in Africa & Nepal



Energy efficiency audit



School construction, Zambia

JOBS FOR THE FUTURE

WATER SUPPLY

The Irish Times - Wednesday, December 29, 2010

Thousands with no water in North after mains burst
GERRY MORIARTY Northern Editor

THOUSANDS OF people across Northern Ireland were without water yesterday because of burst water mains and dry and depleted reservoirs.

PHARMACEUTICAL PLANT CONSTRUCTION

The Irish Independent Mar 7, 2011

The Irish Independent also reports that almost 300 jobs will be announced next week as part of an ambitious project to build what has been described as a world-leading pharmaceutical research and development centre in Tralee, Co Kerry.

INFRASTRUCTURE

The Irish Times - Monday, March 7, 2011

Report urges use of private funds for infrastructure

Ibec and KPMG have called for a new national infrastructure authority to be set up. This would bring together the expertise of the National Roads Authority, the Railway Procurement Agency and the National Development Finance Agency.

What is being suggested for the redevelopment of the Port

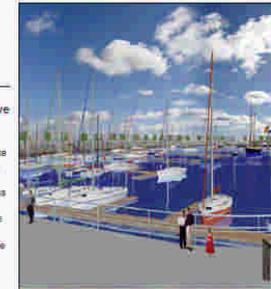
The Planning Application for the proposed redevelopment of Galway Harbour is proposed in 2 distinct Phases. **Phase 1** stage 1 & 2 and **Phase 2**.

Phase 1 would be broken down into two stages. **Phase 1, Stage 1** involves the following:

- Construction of 400m of Western Cruise Liner Berth with -12m C.D. water depth
- Construction of 200m of Eastern Goods Berth with -12m C.D. water depth
- Completion of dredging to -8m l.u. New channel out to the existing -8m seabed contour.
- Provision of 16.8HA (41.52 Acs) of back-up land
- Provision of a 200 berth Marina.
- Form and landscape Freight Rail Embankment.

What Galway Harbour Company would Achieve Upon Completion of **Phase 1, Stage 1**

1. Deepened access channel and quay berths to facilitate access of larger vessels to Galway Harbour removing current dock-gate, width and draft restrictions.
2. Vessel berthing at new Quays to free up existing docks for Marina / Amenity / City related activities.
3. Provision of back up lands to provide adequate space for new and relocation of harbour related activities.
4. Provision of Cruise Liner Berth to significantly enhance Galway Tourist Trade.
5. Provision of Marina and Promenade to enhance Galway's image as an attractive Maritime/Port City.



GALWAY HARBOUR DEVELOPMENT

OCEAN ENERGY

Ireland must invest more in ocean energy, forum told

The Irish Times - Friday, February 4, 2011

LORNA SIGGINS, Marine Correspondent

IRELAND SHOULD “not be over-reliant on gas” and should be making a much greater commitment to ocean energy resources, Bord Gáis chief executive John Mullins has said A Sustainable Energy Authority of Ireland study, which forecasts 52,000 jobs in ocean energy with a net present value of over €9 billion by 2030, was outlined by NUI Galway economist Dr Karyn Morrissey.



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Further information

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