The Experience of Ireland: a Holistic Approach to Safer Urban Streets

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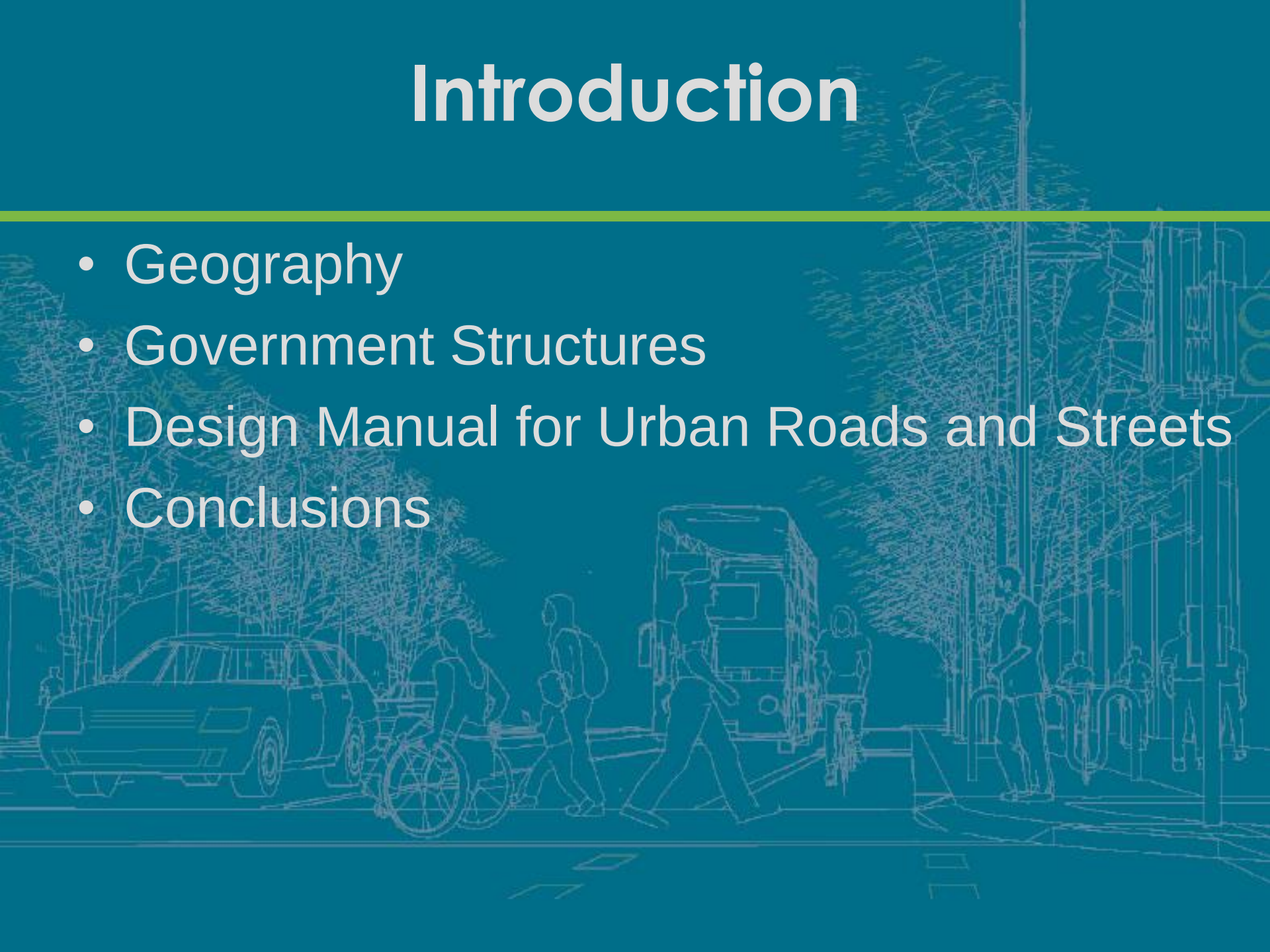
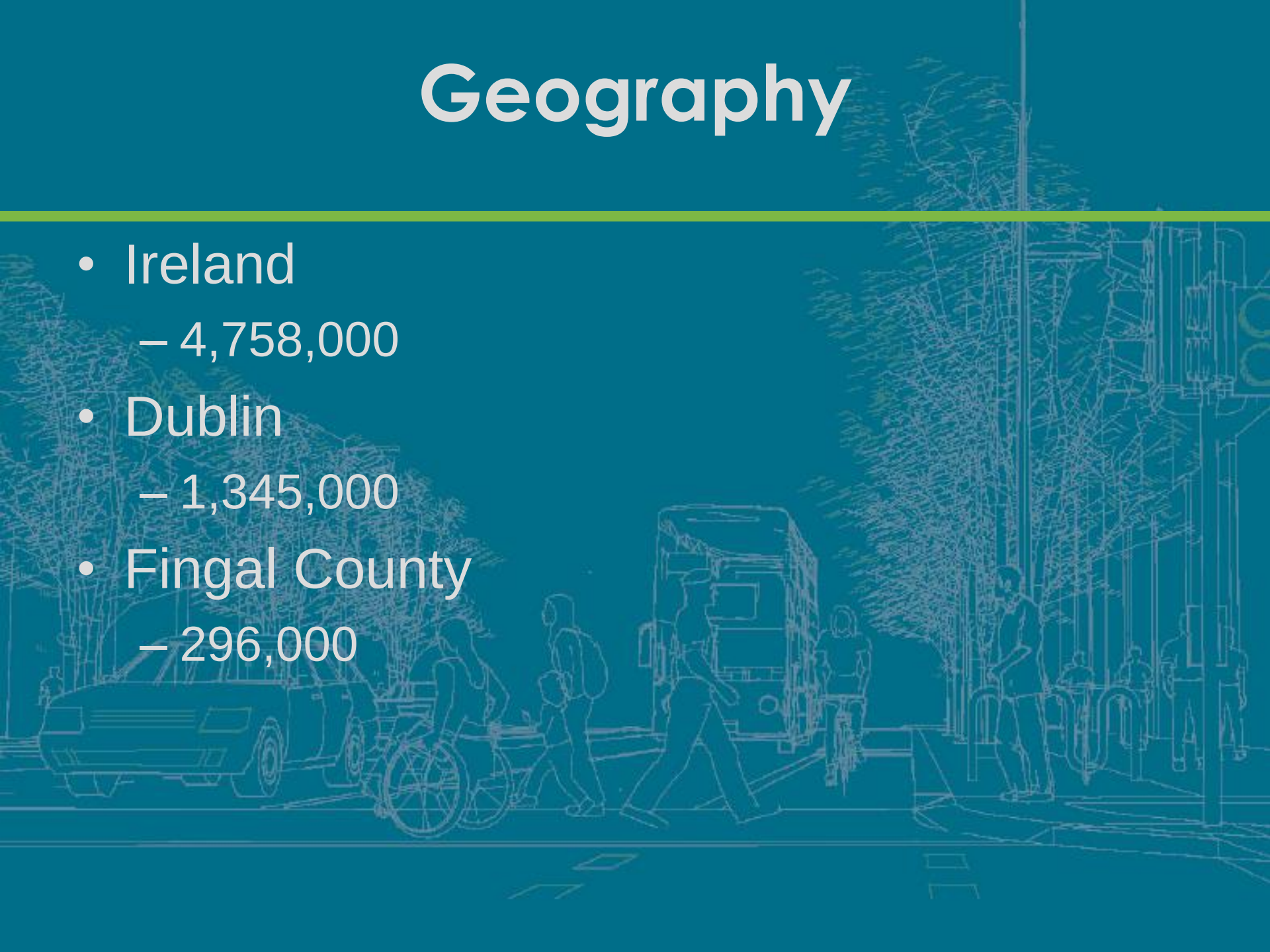
Introduction

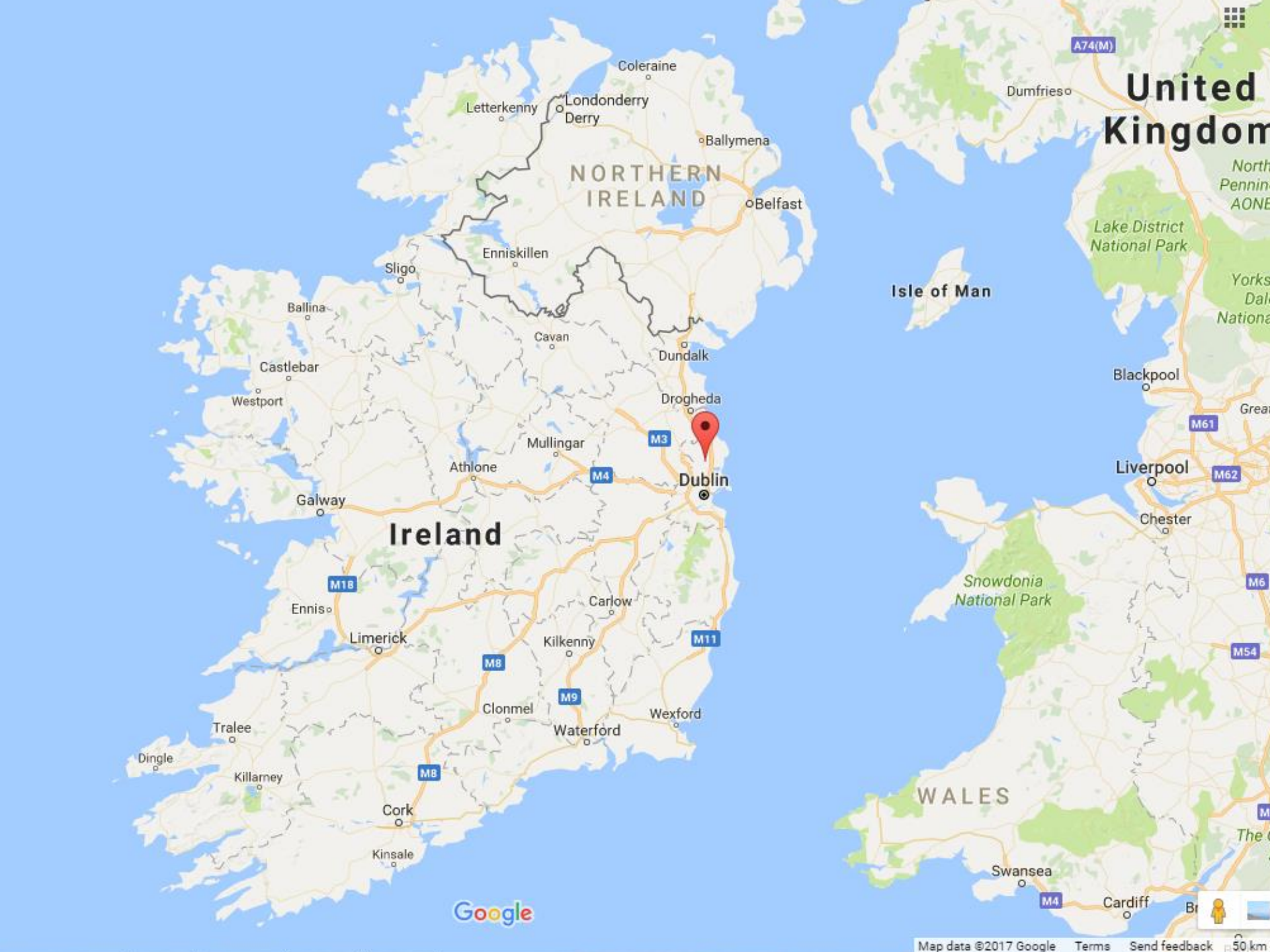
- Geography
- Government Structures
- Design Manual for Urban Roads and Streets
- Conclusions



Geography

- Ireland
  - 4,758,000
- Dublin
  - 1,345,000
- Fingal County
  - 296,000

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Londonderry
Derry
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Castlebar
Westport
Drogheda
Mullingar
M3
Athlone
M4
Dublin
Galway
Ireland
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Ennis
Carlow
Limerick
Kilkenny
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Clonmel
Wexford
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Waterford
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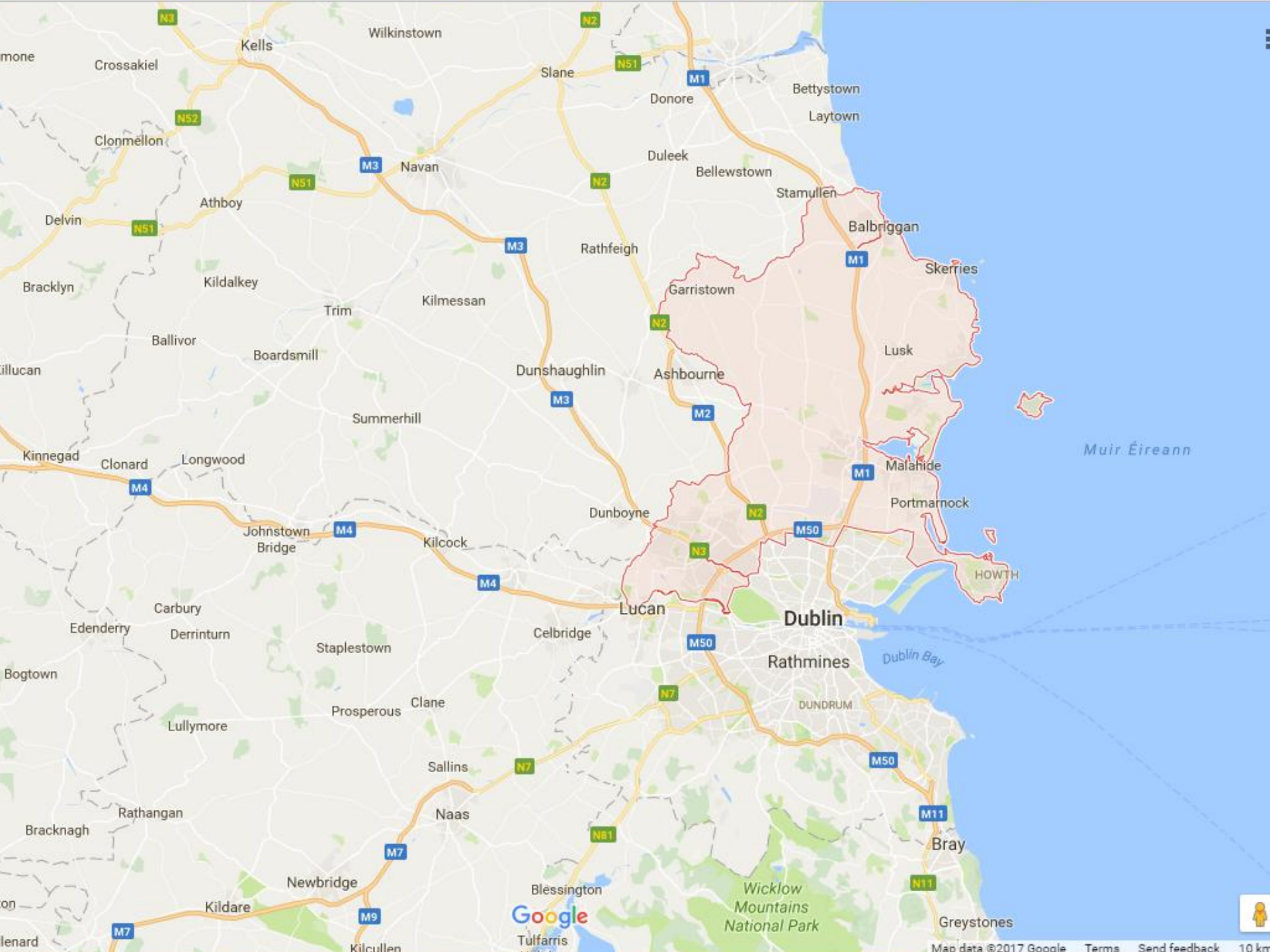
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Athboy
Delvin
Balbriggan
Rathfeigh
Skerries
Bracklyn
Kildalkey
Garristown
Trim
Kilmessan
Ballivor
Boardsmill
Lusk
Dunshaughlin
Ashbourne
Summerhill
Kinnegad
Clonard
Longwood
Malahide
Muir Éireann
Portmarnock
Dunboyne
Johnstown Bridge
Kilcock
HOWTH
Carbury
Edenderry
Derrinturn
Lucan
Dublin
Celbridge
Staplestown
Rathmines
Bogtown
Dublin Bay
Prosperous
Clane
DUNDRUM
Lullymore
Sallins
Rathangan
Naas
Bracknagh
Bray
Newbridge
Blessington
Wicklow Mountains National Park
Kildare
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Government Structures

- Central Government
  - Department of Transport, Tourism and Sport
  - Department of the Housing, Planning, Community and Local Government
- Government Agencies
  - Road Safety Authority
  - Transport Infrastructure Ireland
- Local Authorities
  - 33 City and County Councils
- Police

Design Manual for Urban Roads and Streets

- Commissioned by two Departments
- Manuals already exist for high-speed, rural roads
- Different approach for urban street design
- Mandatory for Government Agencies, Local Authorities and developers

DMURS

- Balance between
  - "movement" of people and goods
  - "place" to live, work and enjoy
- Multi-disciplinary design teams
  - Planners, Engineers, Architects, Urban Designers, Landscape Designers

DMURS

- Change from “design for high speed”
  - Wide carriageway
  - Straight
  - High walls, fences - no direct frontage
- To “low speed by design”
  - Narrower carriageways
  - Speed reducing curves
  - Street-side activity

DMURS

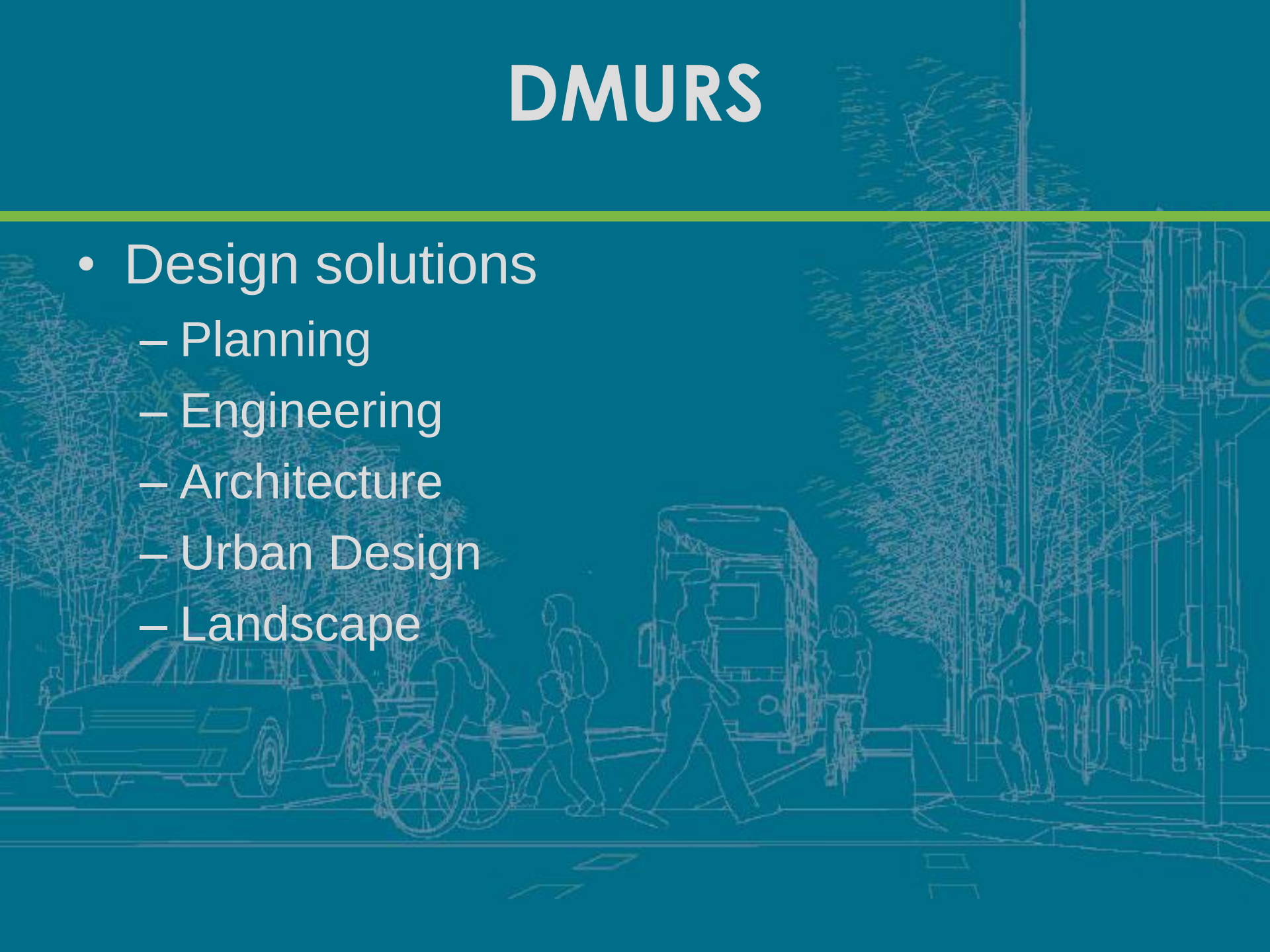
- Change from high-speed to low speed

HIGH SPEED

LOW SPEED

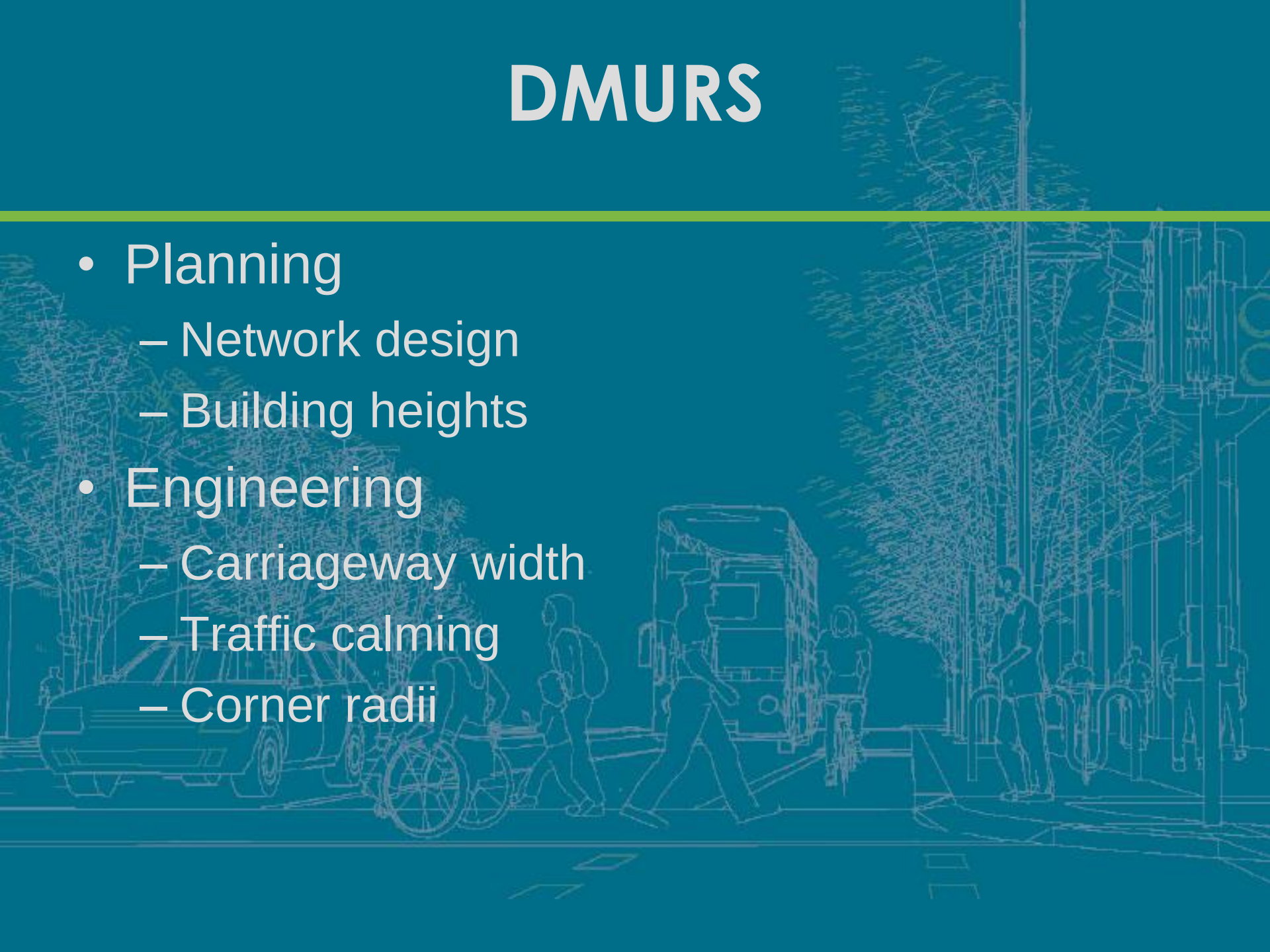
DMURS

- Design solutions
  - Planning
  - Engineering
  - Architecture
  - Urban Design
  - Landscape



DMURS

- Planning
  - Network design
  - Building heights
- Engineering
  - Carriageway width
  - Traffic calming
  - Corner radii



DMURS

- Architecture
  - Building height to roadway width
  - Proximity of buildings to road
  - Active ground floors
- Urban design
  - Minimise signage
  - Shared surfaces
- Landscape design
  - Street trees

3.3 Permeability and Legibility

3.3.1 Street Layouts

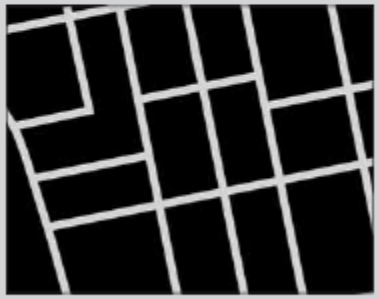
The movement towards more integrated and sustainable forms of development will result in a shift away from dendritic street layouts to highly connected networks which maximise permeability, particularly for pedestrians and cyclists. When designing new street networks designers should implement solutions that support the development of sustainable communities. In general, such networks should:

- be based on layouts where all streets lead to other streets, limiting the use of cul-de-sacs that provide no through access.
- maximise the number of walkable/ cycleable routes between destinations.

Maximising the connections within a site will allow the street network to also evolve over time to meet local accessibility needs. This will limit the use of cul-de-sacs that do not allow through accessibility for all users. These streets should be limited to areas where mid-block penetration is desirable (see Section 3.3.2 Block Sizes). Figure 3.8 illustrates three network typologies that can be adapted to the needs of place.

Street networks that are orthogonal (see Figure 3.8a) in nature are the most effective in terms of permeability (and legibility). Within the Irish context orthogonal or grid layouts are often found within the *Centres* and *Neighbourhoods* developed between the Georgian and Edwardian periods (e.g. Limerick City Centre). More recent successful examples include Dublin Docklands and Belmayne, Co. Dublin.

Street networks that are curvilinear (see Figure 3.8b) may also be highly effective. Within the Irish context, these types of grids are often found within *Suburbs* developed from the 1920s onwards (e.g. Marino and Cabra, Dublin). More recently designers have successfully used similar geometric patterns in higher density developments to draw people toward spaces, highlighting *Focal Points* (see Section 3.3.4 Wayfinding) and creating attractive curvilinear streetscapes. More recent successful examples include Clongriffin, Co. Dublin.



a) ORTHOGONAL LAYOUT
BELMAYNE

b) CURVILINEAR LAYOUT
CLONGRIFFIN

c) ORGANIC LAYOUT
POUNDBURY

Figure 3.8: Permeable street layouts may be formed via a number of different configurations including examples of the more rigid orthogonal, curvilinear and/or organic.

Design for Low Speed


Close Proximity of Buildings


Pedestrian Activity

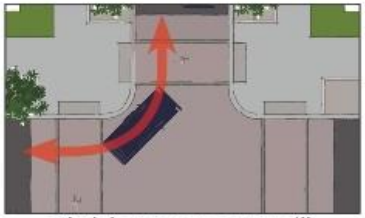

Horizontal and Vertical Deflections


On-Street Parking

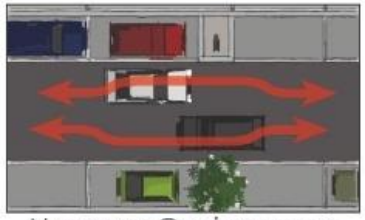

Continuous Street Wall


Frequent Crossing Points and Junctions


Minimising signage and road markings


Tighter Corner Radii


Active Ground Floor Uses


Narrower Carriageways


Reduced Visibility Splays

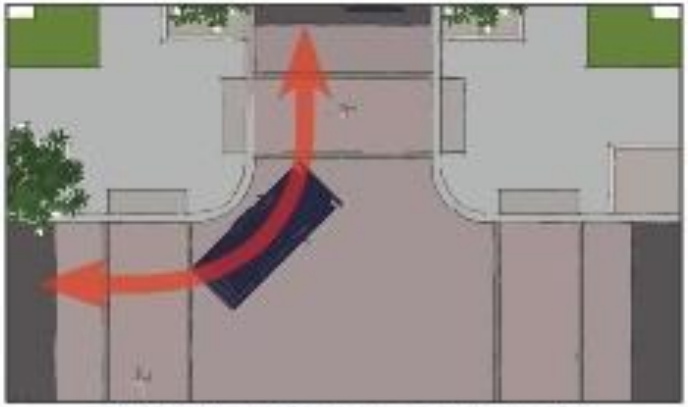

Shared Surfaces

Design for Low Speed

Horizontal and Vertical Deflections

On-Street Parking

Minimising signage and road markings



Tighter Corner Radii

Design for Low Speed

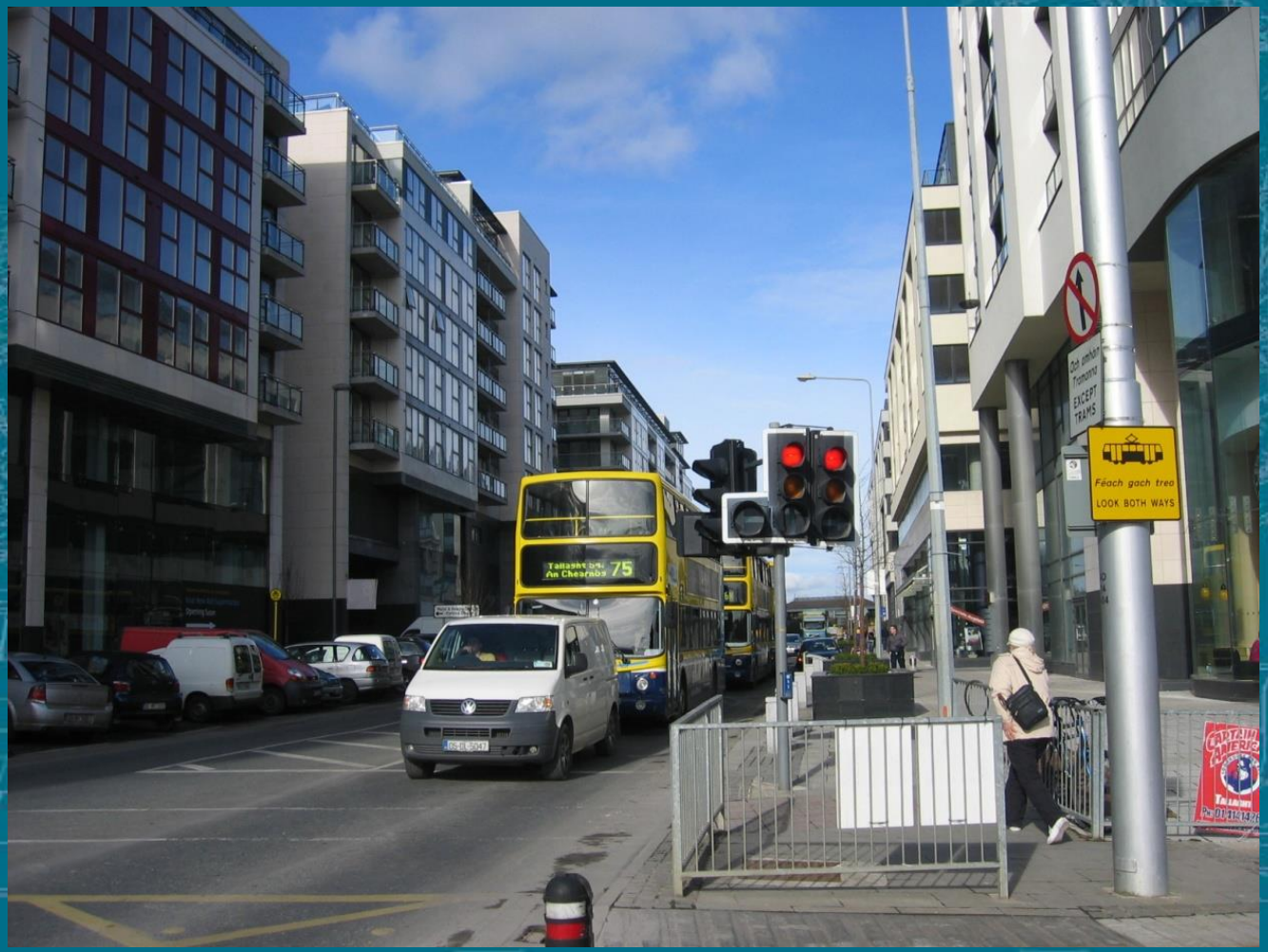
Close Proximity of Buildings

Pedestrian Activity

Continuous Street Wall

Frequent Crossing Points and

Building Height to Road Width



- In general, signalised crossings should be provided on busy *Arterial* and *Link* streets and/or where cyclists are likely to cross.

provision of drop kerbs will generally suffice. However zebra crossings or courtesy crossing should be considered where pedestrian demands are higher such as around *Focal Points*.

21 Refer to Section 12.3-12.4 of the *Traffic Management Guidelines* (2003).

22 Refer to Section 12.3 of the *Traffic Management Guidelines* (2003).

Figure 4.37: Example of a Zebra crossing within the town centre of Dundalk, Co. Louth. Zebra crossings promote greater levels of pedestrian priority as drivers must give way to pedestrians once they have commenced the crossing.

Figure 4.38: Example of an informal 'courtesy' crossing in Westport, Co. Mayo. Drivers stop and wait for pedestrians to cross as a courtesy.

Urban Landscaping

Implementation

- Local Authorities control urban streets
  - Own new works
  - Own retro-fitting works
  - Developers
    - “pre-planning” discussions
    - Conditions on planning permissions

Funding

- DMURS additional costs
  - Higher quality materials and landscaping
- DMURS reduces costs
  - Narrower carriageways
  - Tighter kerb radii
  - Surface car parking
- DMURS benefit
  - Higher development densities
- No additional funding required

Conclusions

- Urban street design is very different from rural road design and requires a very different approach and design manual
- Design Manual for Urban Roads and Streets
- Urban area – reduce speed through holistic urban design not just engineering

Conclusions

- Multi-Agency
  - Government Departments and Agencies
  - Local Authorities
  - Developers
- Multi-disciplinary
  - Engineers, Architects, Planners, Urban Designers, Landscape Designers

Conclusions

- The best way to improve safety is to reduce speed
- The best way to reduce speed is through holistic, multi-disciplinary urban design