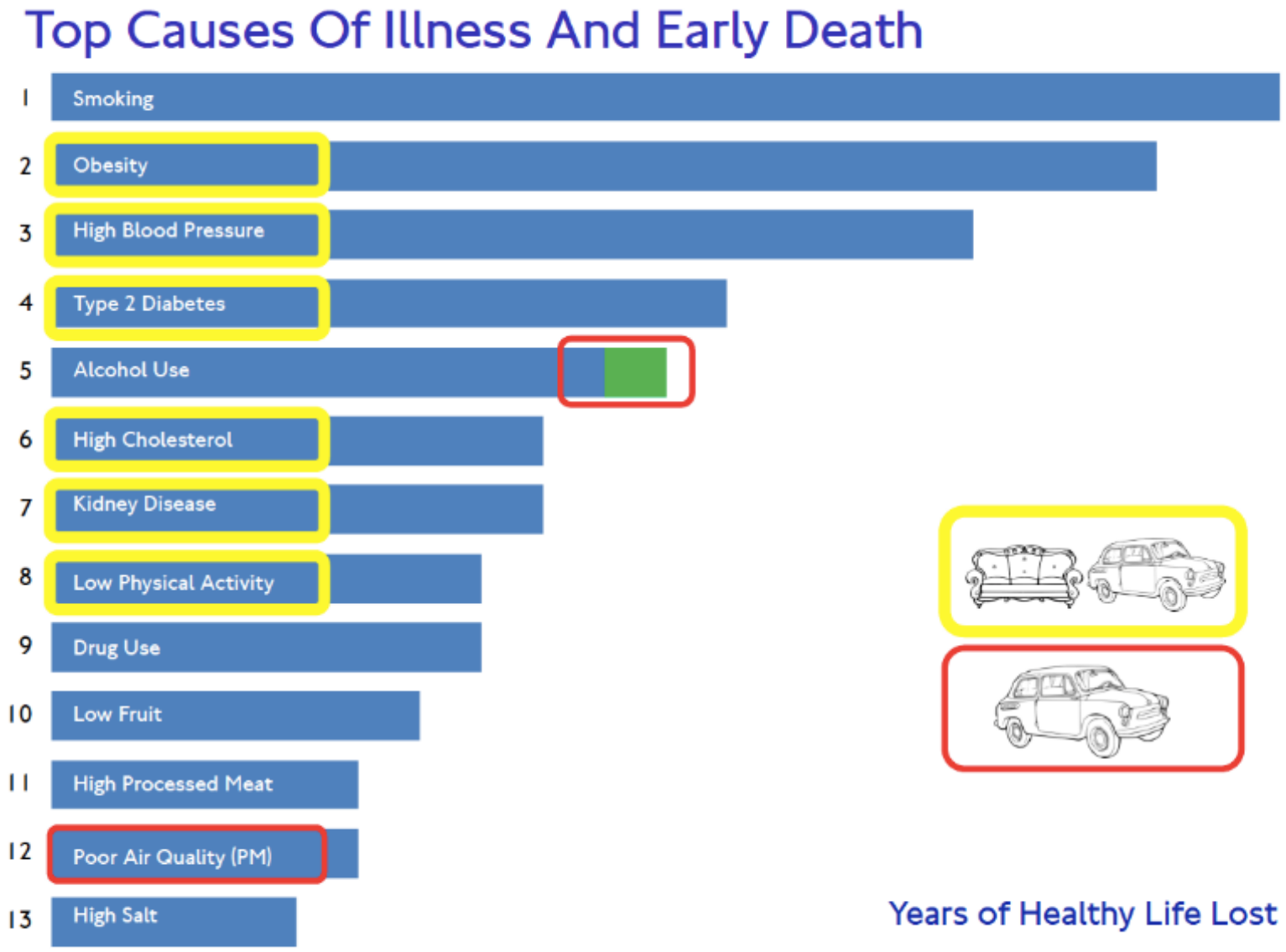
The Future of the City Centre

11th September 2018

Civic Engineers

The relationship between urban form and public health…

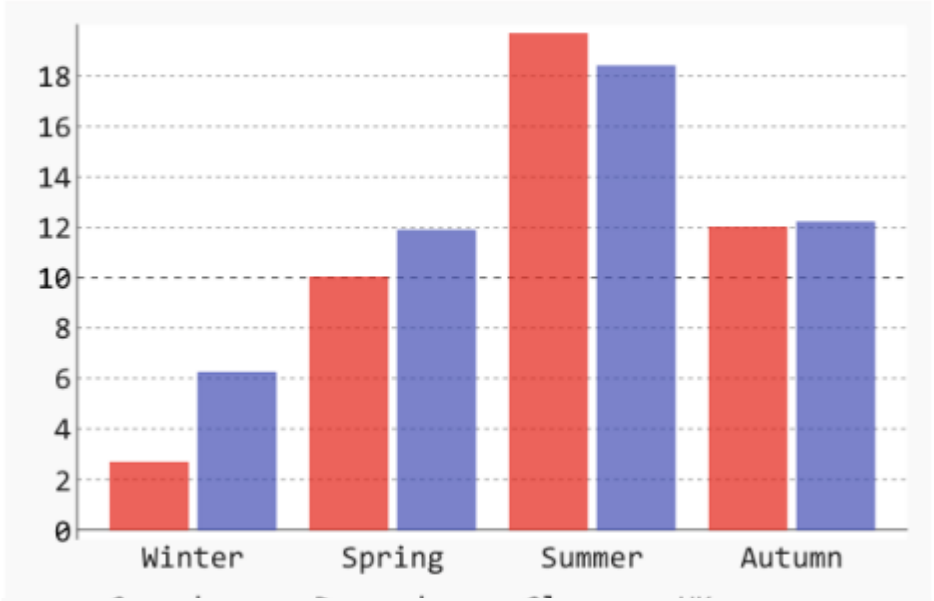


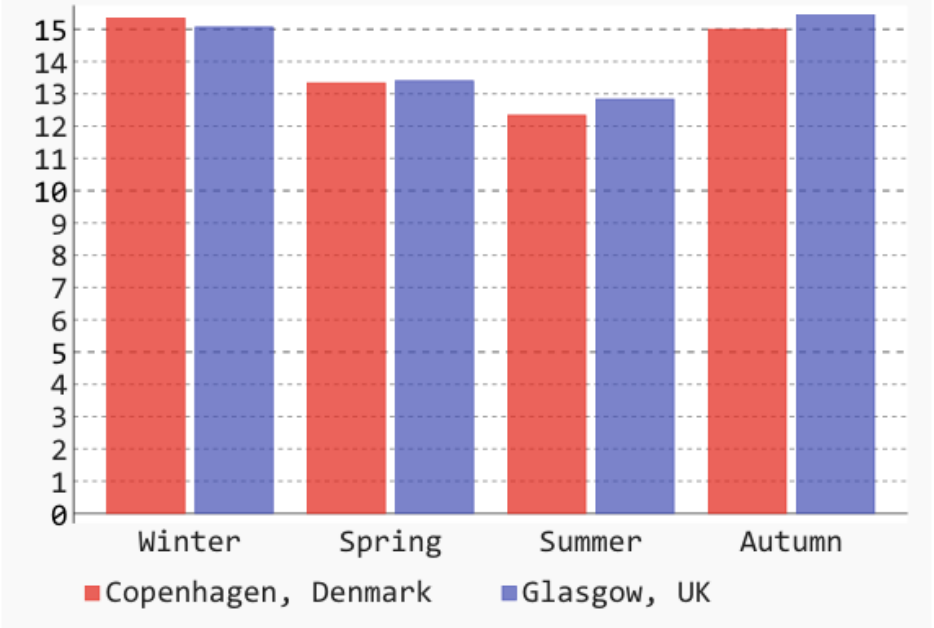
Traffic Inducing Traffic


The human is a small, slow and sensitive creature with a speed of 5km/h

City seasons are different...

Source:
WMO - World Meteorological Organization





City climates are similar…

Average day time temperature in deg C

Average rainy days per season

Is it us or the environment?

How do we engineer activity back into our lives?

1937

2014

Eastern Avenue, Ilford

The relationship between urban form and inclusive growth…

Local Economic Impact

% of project or organisation spending in the local economy.

GVA Uplift

Increased economic output per job filled in an Area of Investment.

Economic Benefits

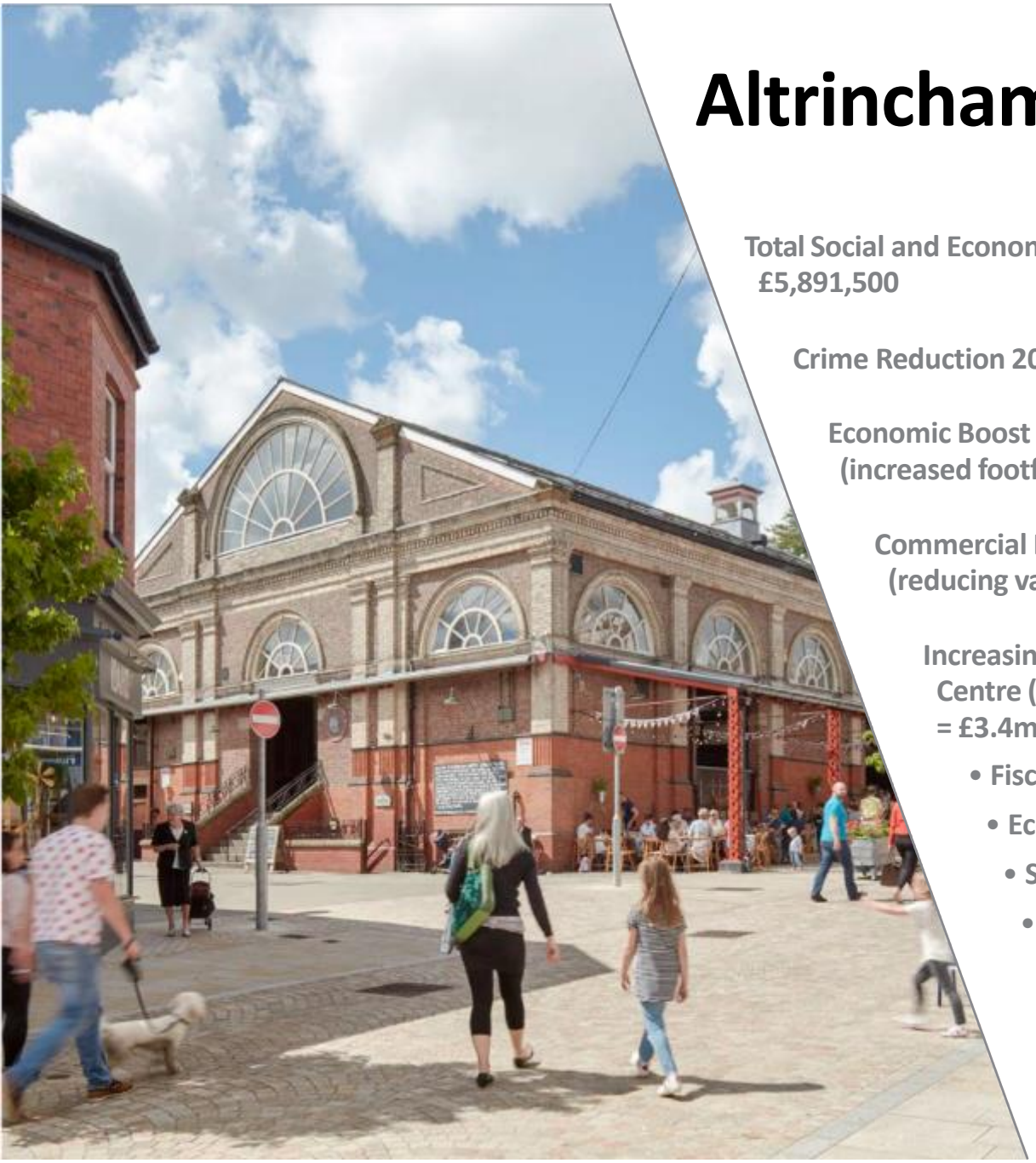
Increased Tax, National Insurance, and earnings dues to reducing worklessness and sickness days, loss to the economy through crime etc.

Social Value

Improved wellbeing, mental health, physical health, reduced social isolation, increased confidence and self-esteem, employability skills, aspirations, environmental impact etc.

Fiscal Savings

Reduced costs associated with Welfare Benefits, Crime, Education, and Social Services, Health and Mental Health Services, Waste Reduction, Resource Efficiency etc.



Altrincham Public Realm

Total Social and Economic Impact over 12 months = £5,891,500

Crime Reduction 20% = £99,500 post completion

Economic Boost do day and night economy (increased footfall by 17%) = £1.5m

Commercial Investment in Town Centre (reducing vacancy rates by 17%) = £900k

Increasing Employment in the Town Centre (through commercial Investment) = £3.4m

- Fiscal = £326k
- Economic = £466k
- Social = £1.1m
- GVA Uplift = £1.5m

Glasgow Avenues

NPV project Cost: £94,292,528 (Net Present Value)

Short term construction jobs - GVA Benefits (NPV): £62,353,617

Community Benefits (NPV): £28,513,45

Commercial Floor Space – employment GVA (NPV) over 10 Years: £257,621,691

Total Economic Impact: £348,488,762 NPV

CIHT

Creating better streets: Inclusive and accessible places

Reviewing shared space

2018

Headline Objectives	Relevant statutory duty	Potential Measurable Outcomes
Inclusive Environment	Equality Act 2010	Perception of safety, comfort & navigation (all users) Presence of Vulnerable Users (older people, children, disabled people)
Ease of Movement	Traffic management Act 2004	Levels of walking, cycling and public transport use Motor traffic congestion and/or flow Number and ease of pedestrian crossing movements Level of delay to all users Pedestrian crowding
Safety and Public Health	Road Traffic Act 1988	Motor vehicle speed Number and severity of collisions and casualties Noise levels Air quality and other public health measures Security measures Crime and fear of crime
Quality of Place		Levels of place activity (e.g. sitting, dining etc.) Space available for place activity Attractiveness (e.g. paving materials, planting, public art) Suitability of materials over lifetime of scheme Amount of useful street furniture Amount of street clutter Quality of Maintenance and Cleansing
Economic Benefit		Pedestrian footfall Number and prosperity of businesses (e.g. reduced vacancies, increased rental values etc.) Car parking occupancy Cycle parking occupancy Benefit and Cost assessment Frequency and type of special events (e.g. markets, performances)


wbf
TO LET. MAY SELL

The relationship between urban form and inward investment…

All our senses are important...

75% of all impressions are through eyesight

The pleasure metric

We need lots of stimuli…

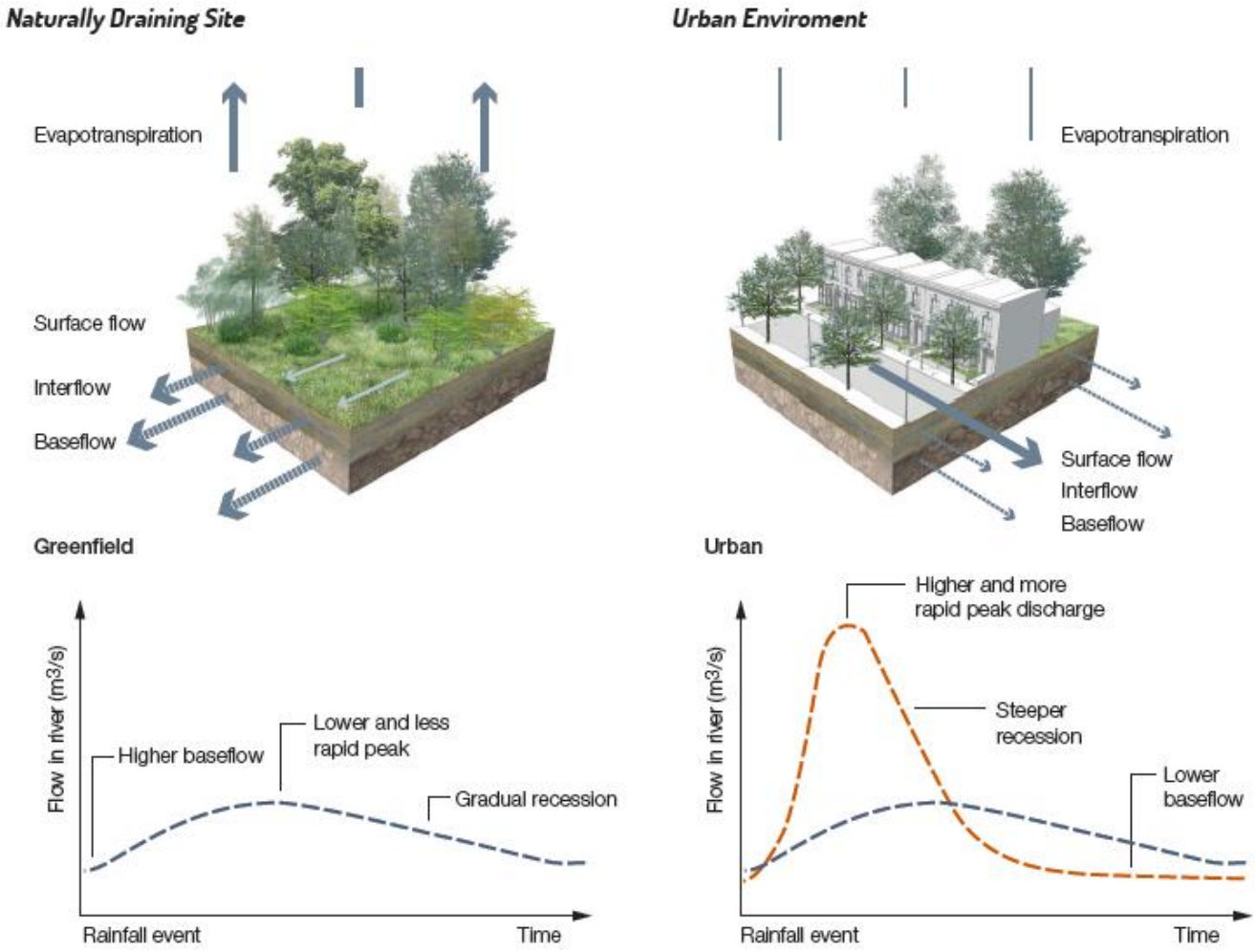
1,000 stimulus/hr or 1 every 4 seconds

Applied Ergonomics: "Putting mind and body back together" – W.S Marras & P.A. Hancock 2013

Human senses are a necessary planning consideration

The relationship between urban infrastructure and climate change…

Sustainable urban Drainage Systems (SuDS)



Surface Water Flow Rates - Comparison Between Naturally Draining Sites and the Urban Environment. Diagram taken from Draft TfL SuDS and Street Scape Guidance

SuDS in London - a guide

November 2016

MAYOR OF LONDON

TRANSPORT FOR LONDON
EVERY JOURNEY MATTERS





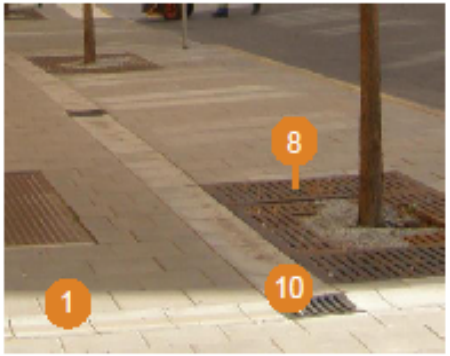




Stockholms stad

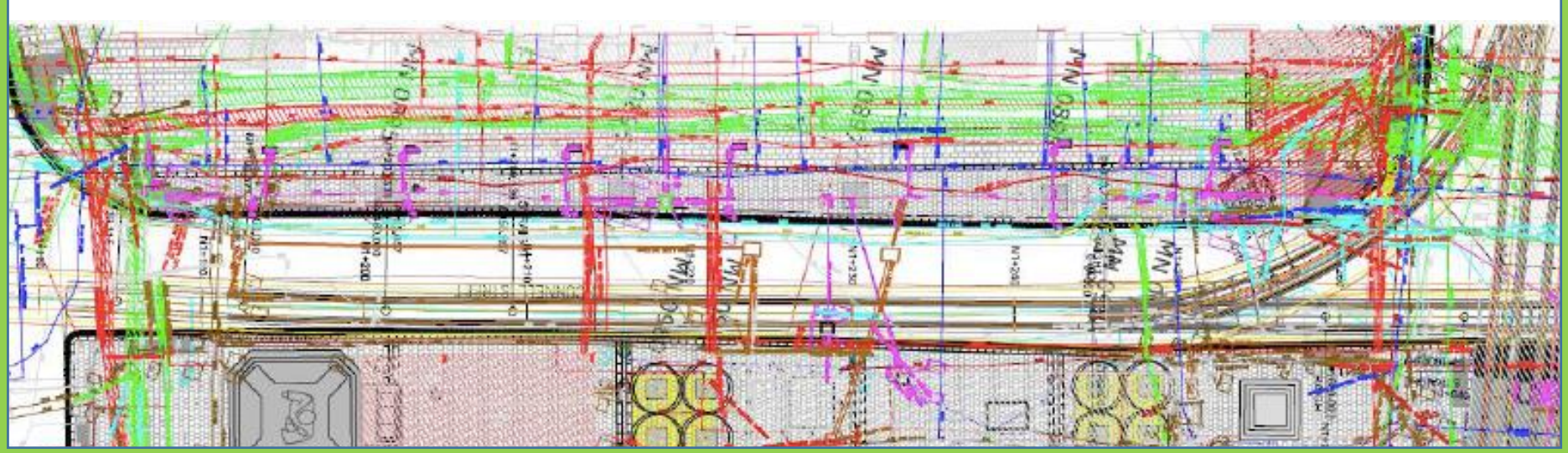
Structural soil

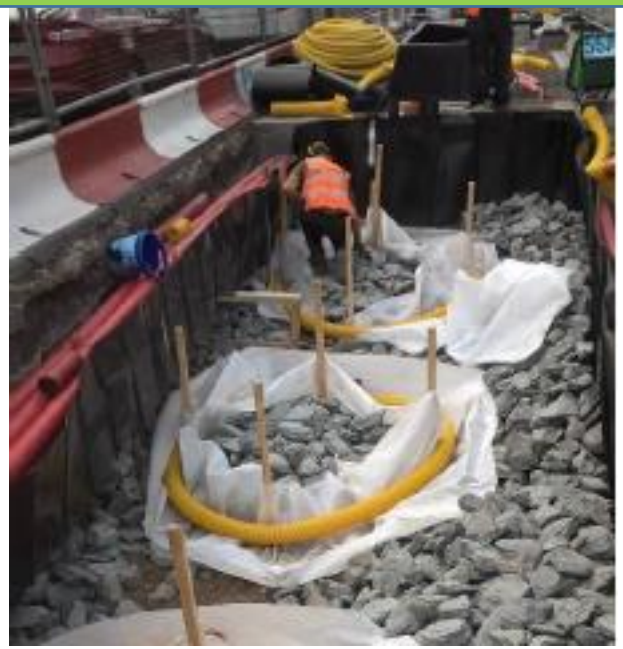
A method for building with stability and to create good growing conditions for trees in paved areas with the use of stormwater and the added value of decreasing the risk of roots damaging paving or underground pipes



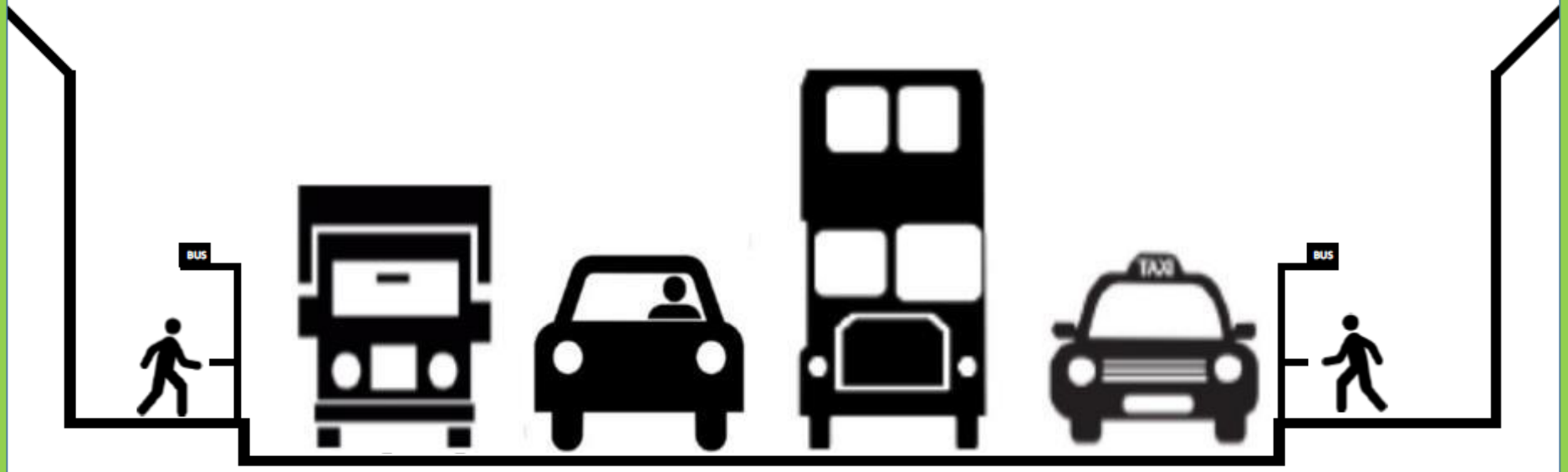
1. Paved surface with dished stormwater gutters
2. Geotextile
3. Leveling layer (crushed rock 8-16 mm) – also used for concrete bunker and water/air inlet.
4. Aerated bearing layer (crushed rock 32-63 mm)
5. Structural soil (crushed rock 100-150 mm) with planting soil hosed into the structural volume
6. Terrace
7. Concrete bunker
8. Surface grid
9. Planting soil
10. Inlet for air and water supply

Light Rail
Current Construction
Landscape Strategy
Trees and integrating Utilities (and vice versa)





Existing Situation



Vehicle Speeds & Street Geometry

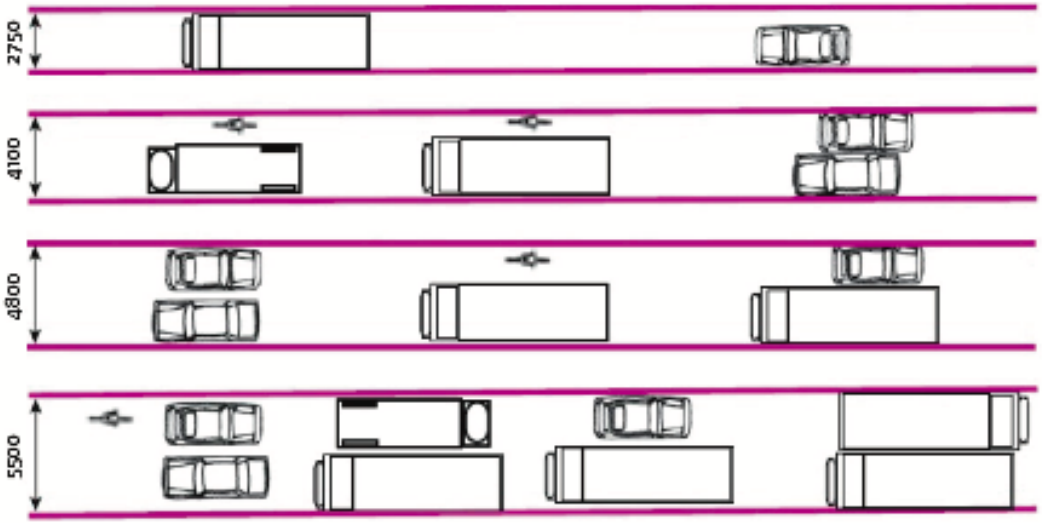
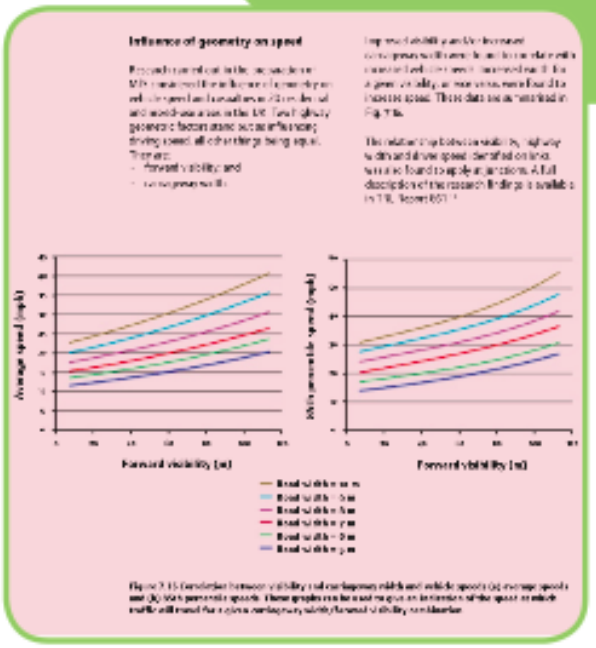


Figure 7.1 Illustrates what various carriageway widths can accommodate. They are not necessarily recommendations.



Scottish Guidance

Both Designing Streets and the SCOTS Road Development Guidelines refer directly to Manual for Streets. The following is an extract from the SCOTS Guidelines is below:

This section that covers the principles of design speed is a vital area where engineering input at an early stage can help to create a balanced solution that takes account of the safety of all road users and the crucial factor of driver behaviour. Transport Research Laboratories Report TRL661 (Manual for Streets) notes that, in their study, the largest effect on speeds was found to be associated with reduced lines of sight.

New developments are recommended not to use vertical traffic calming features such as speed cushions and humps as these may have detrimental effects on disabled and infirm road users. However, vertical traffic calming features such as raised tables at junctions may be suitable in new low use residential developments. Wherever possible, slower speeds should be promoted through other road alignment. Methods of reducing vehicle speeds include (findings from TRL661 Report):

- Reduced forward visibility (reduced forward visibility from 120m to 20m - 20mph on links and 11 mph at junctions);
- Narrower lane widths (5m wide road - 4mph on links, approaching junctions - 10mph slower);
- Shorter block lengths (see forward visibility);
- Block paved or setted road surfaces (-5mph reduction)
- Presence of on-street parking features within the carriageway (-2mph to 5mph
- CAUTION aim for off-street or reduce interaction with pedestrians - near miss concern);
- Informality in street and junction layout.

Civic Engineers

Walking

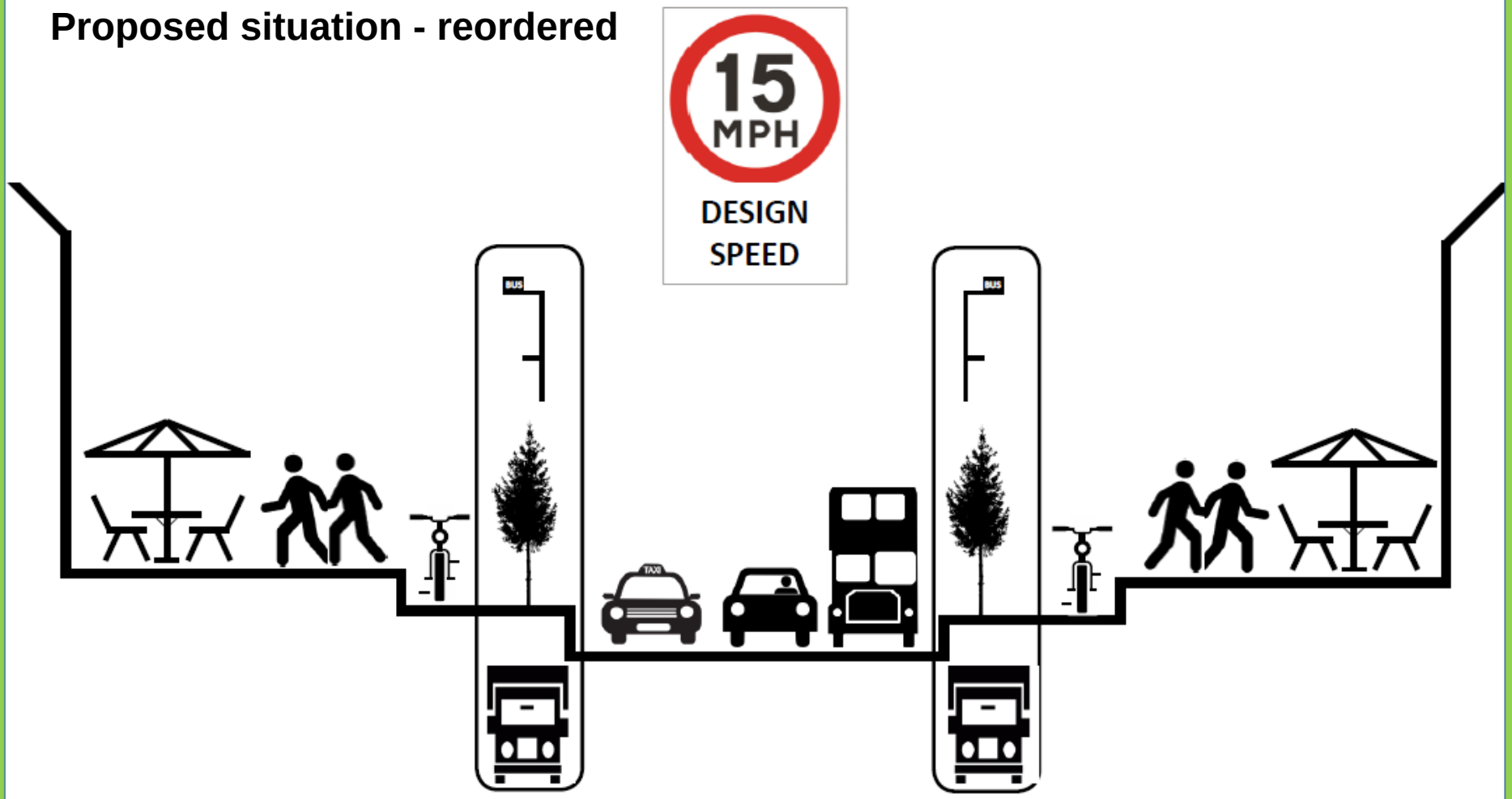
Cycling

Buses

Street Life

Climate Resilience

Proposed situation - reordered



DESIGN SPEED

Case Study – Poynton (26,000 AADF)


RBS

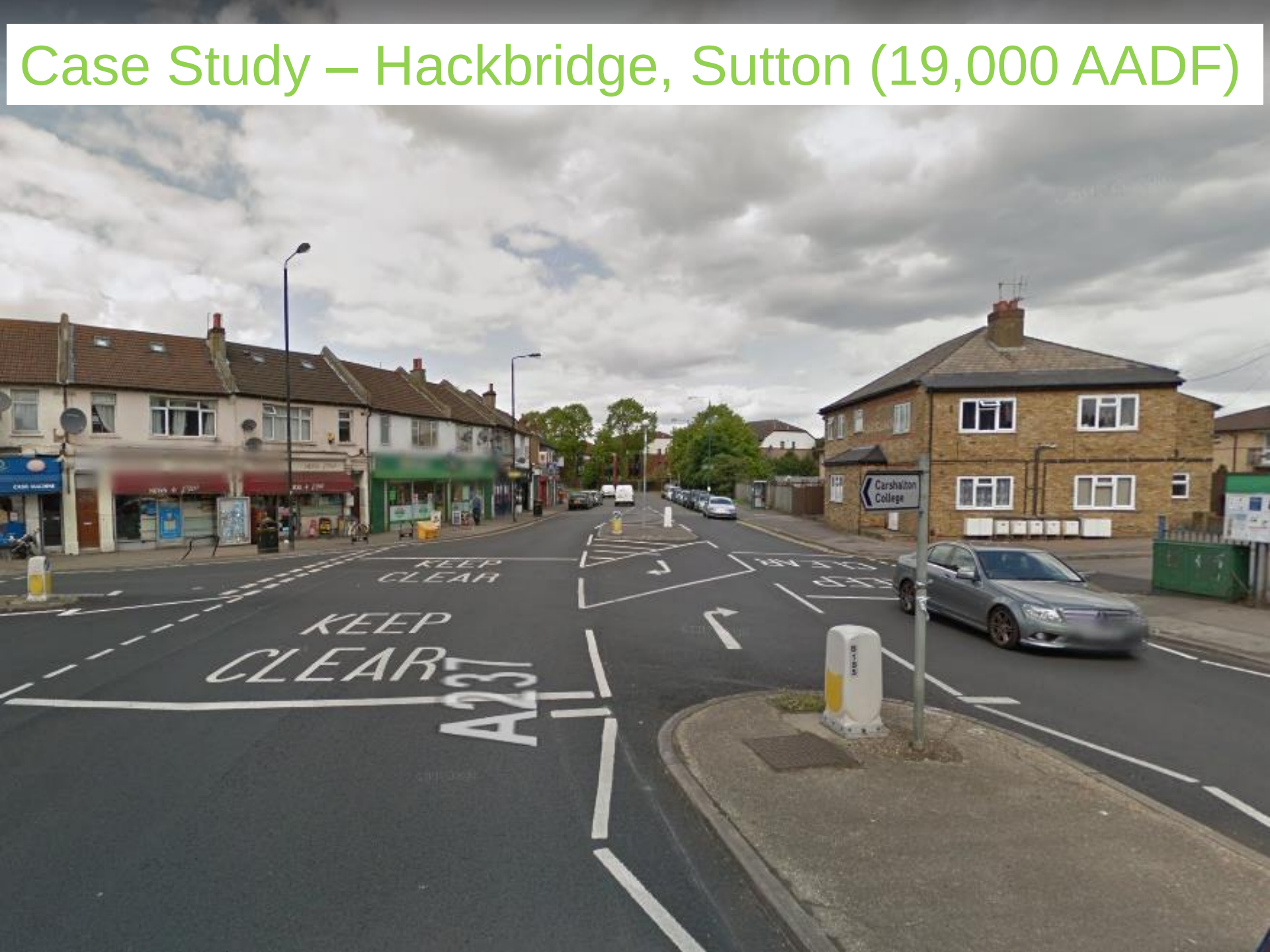

arcese
118
STRALIS
IVECO
arcese
118
EY57 EBN


London Road
Richard Lowth & Co
Manners Pimblett
Solicitors
Poynton
MT06 GMG

Case Study – Argyle St, Glasgow (16,000 AADF)

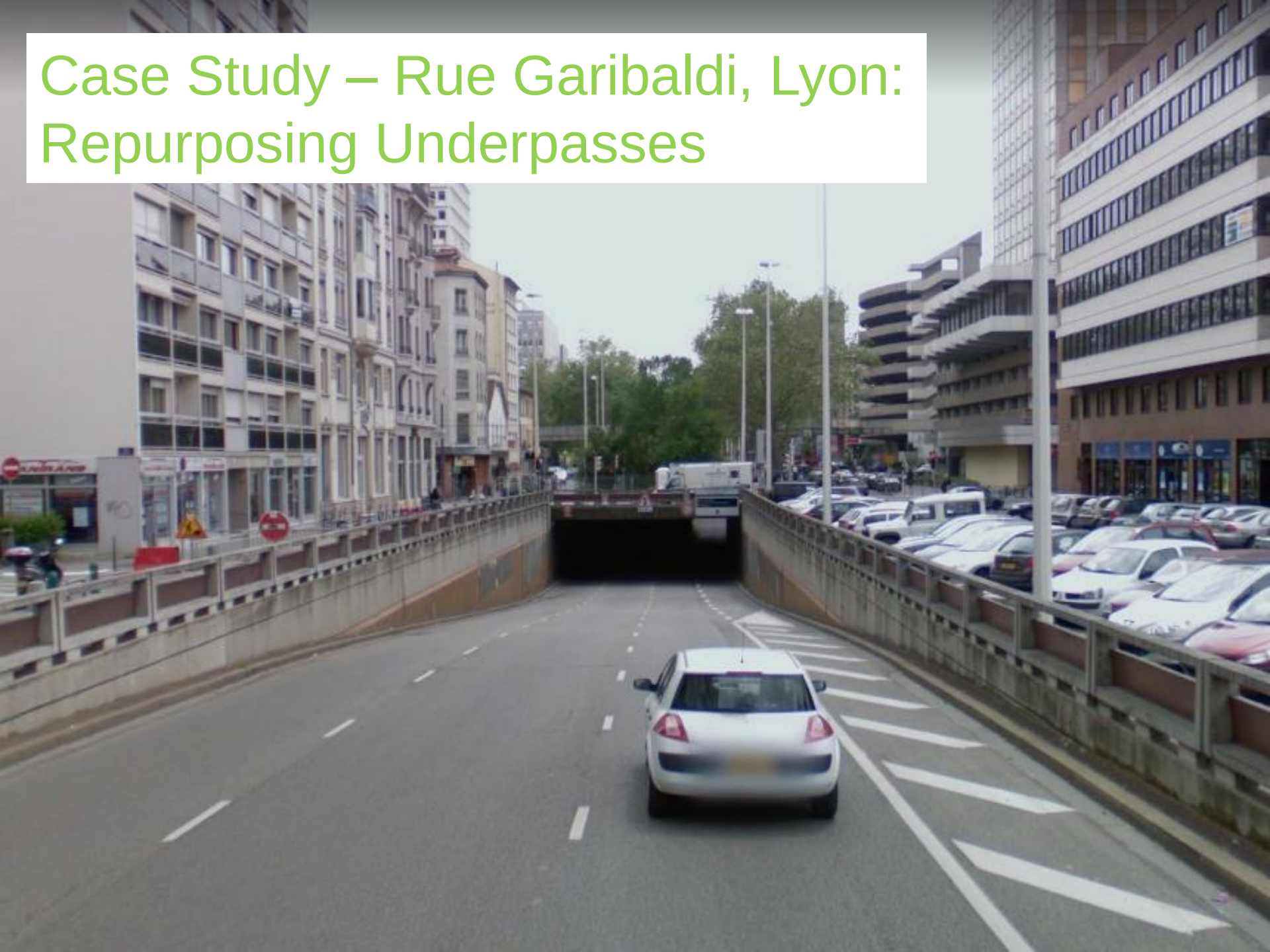

£2
Glasgow
via Dumbarton, Cla
one
STARBUCKS
COFFEE

Case Study – Hackbridge, Sutton (19,000 AADF)

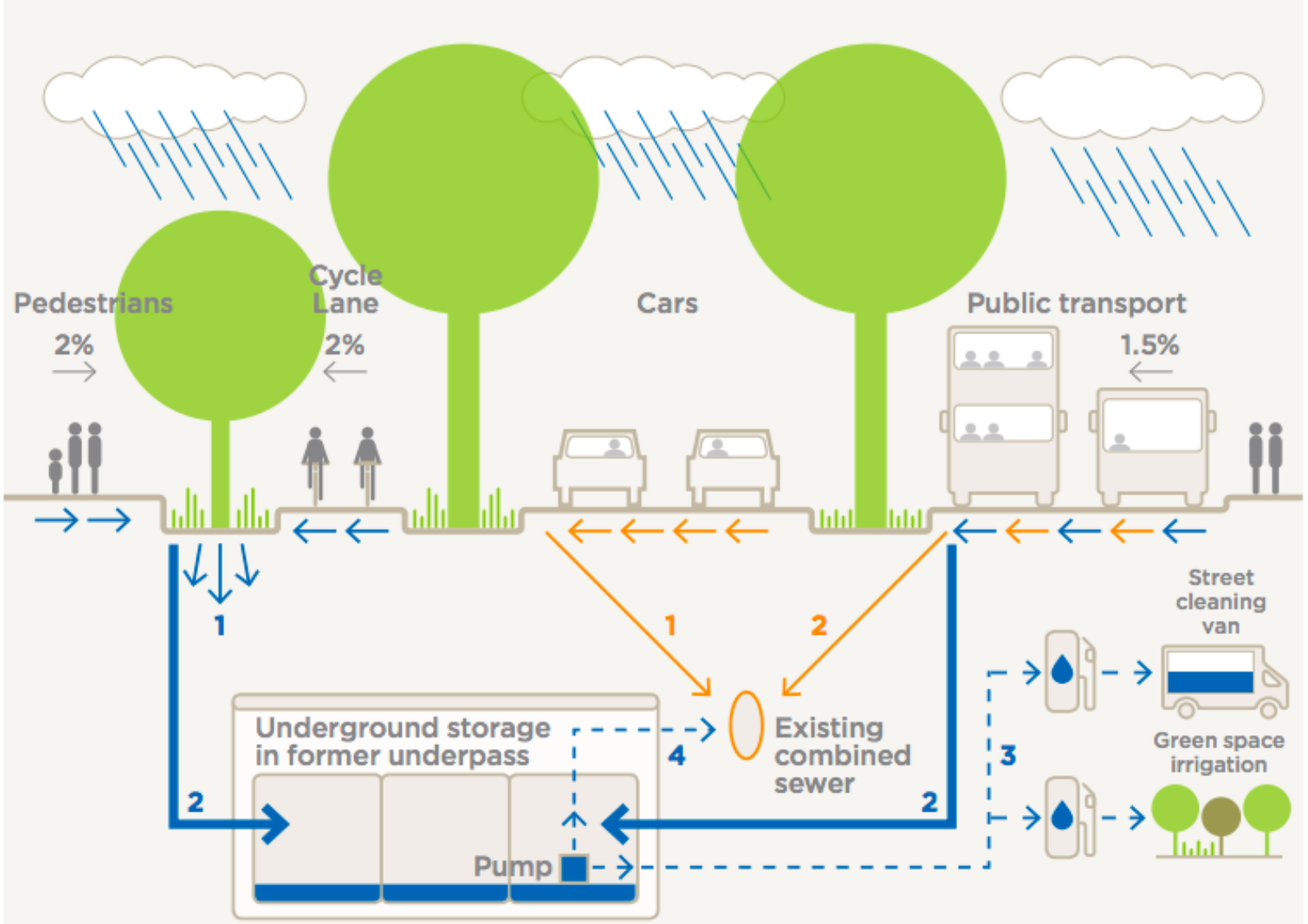



CERAMIC TILE
All Tile Ceramics

Case Study – Rue Garibaldi, Lyon: Repurposing Underpasses



Water management strategy for Garibaldi Street refurbishment



1. Surface water runoff infiltration
2. Overflow and/or storage of surface water runoff
3. Surface water runoff re-use
4. Controlled rate outflow into combined sewer (during heavy storms)

1. Remains directed to existing combined sewer
2. Only directed to combined sewer when winter treatment is applied to the bus lanes


Rue Garibaldi
BUS

The Vitality of Inverness

Making the streets more attractive for:

Moving



Cycling



Climate



Street Life

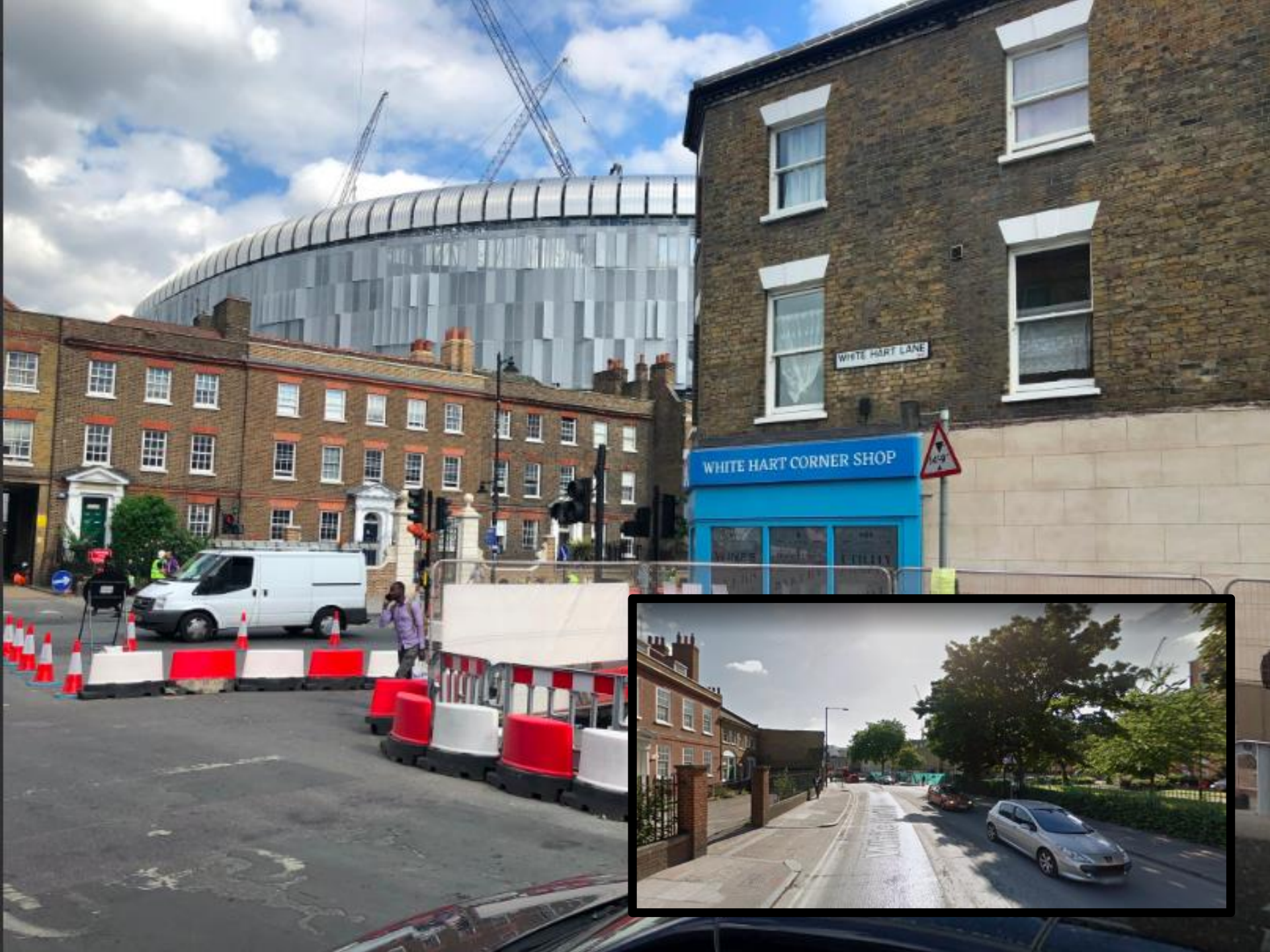


Academy Street Existing

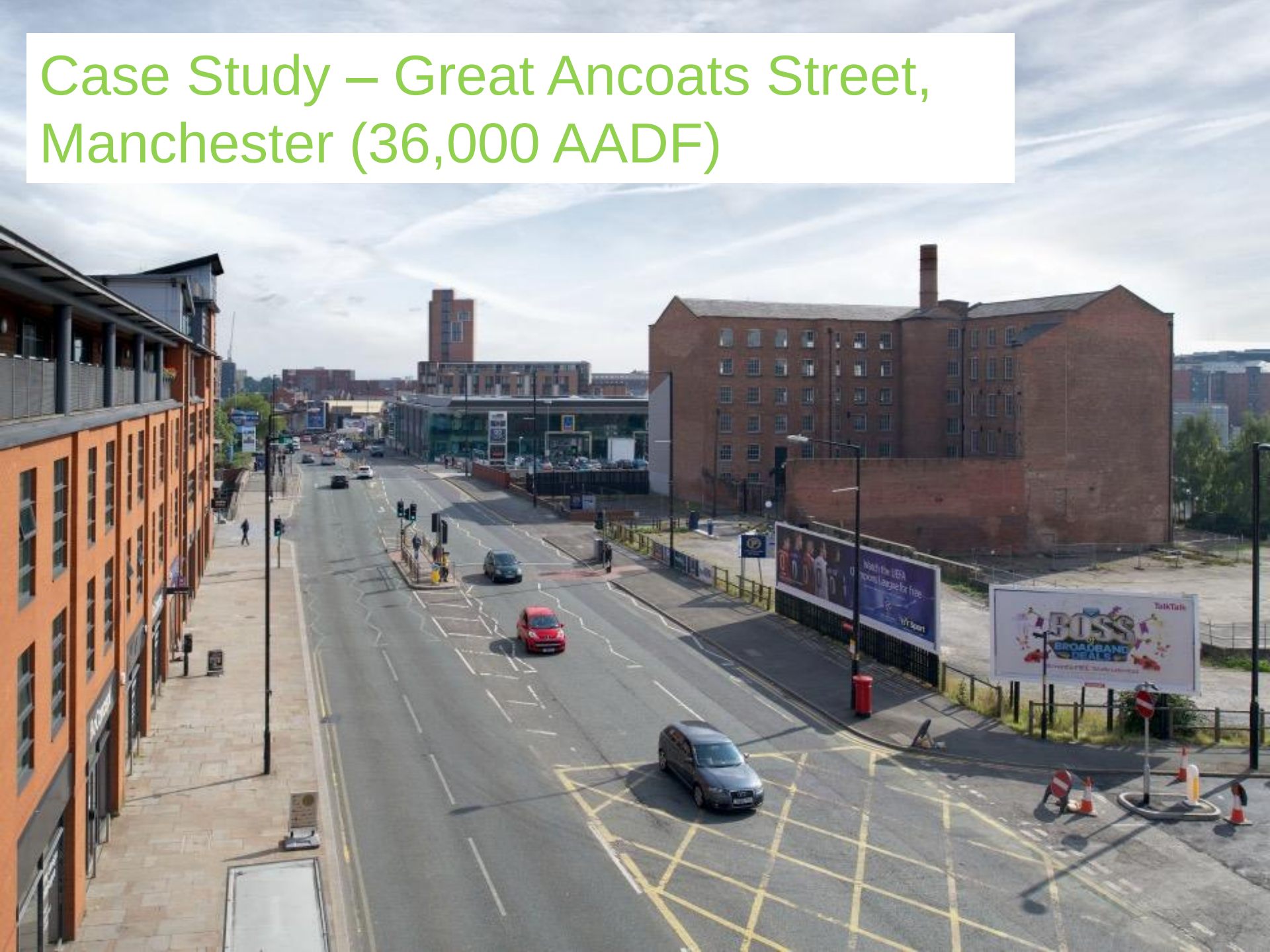
Academy Street Proposed

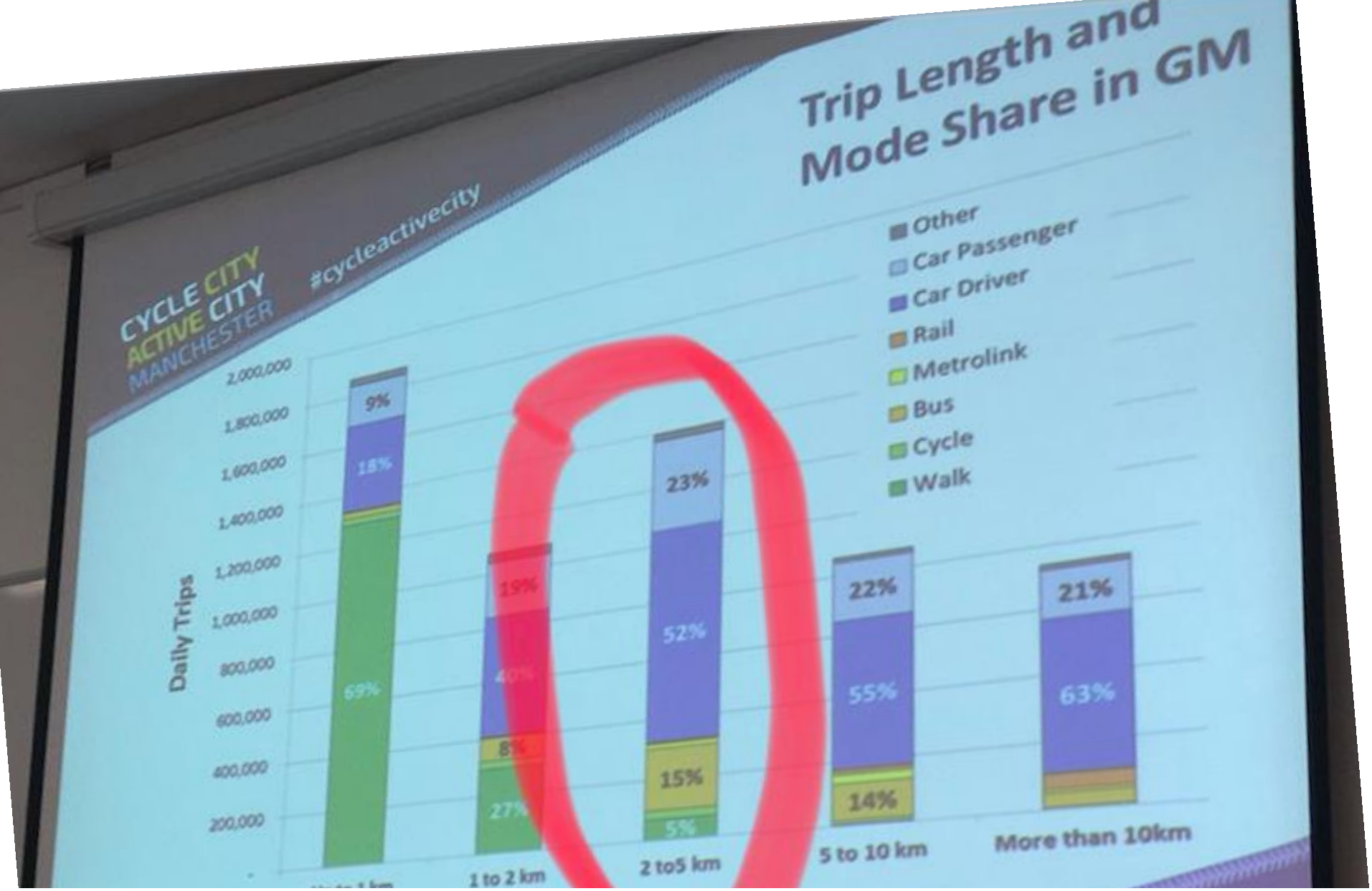
And critically continue to provide access and servicing for transport and business


Academy St


WHITE HART LANE
WHITE HART CORNER SHOP

Case Study – Great Ancoats Street, Manchester (36,000 AADF)





Transport for Greater Manchester Trip Length survey – 52% of journeys between 2-5kms are undertaken by private vehicles