

*Pedestrian, cyclist and road and rail safety in high winds*



*Pedestrians in high winds*



## Bridgewater Place, Leeds

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*"I'm concerned having heard all the evidence there may be an offence of corporate manslaughter by one or more of the organisations. I'm obliged to adjourn this inquest pending further inquiries by the Crown Prosecution Service"*

*"I am recommending that Leeds City Council closed the road where Dr Slaney died when wind speeds reached 20 m/s - about 45mph".*

Melanie Williamson, Wakefield Coroner 2014, 2015

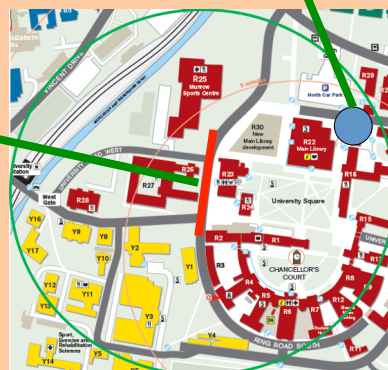
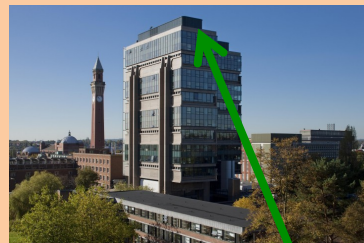


## Comfort and safety criteria

Lawson (2001)		LDCC	
Sitting	5.60m/s , 1% (5)	Pedestrian sitting	4m/s, 5%
Entrance doors	5.6m/s, 6% (6)		
Pedestrian standing	5.6m/s, 6% (6)	Pedestrian standing	6m/s, 5%
Pedestrian walk through	8.25m/s, 4% (8)	Pedestrian walking	8m/s, 5%
People around buildings	10.95m/s, 2% (9)		
Roads and car parks	10.95, 6% (10)	Business walking	10m/s, 5%
Distress	14.1m/s, 0.01%	Distress	15m/s, 0.025%

*Adequacy of safety criteria?*

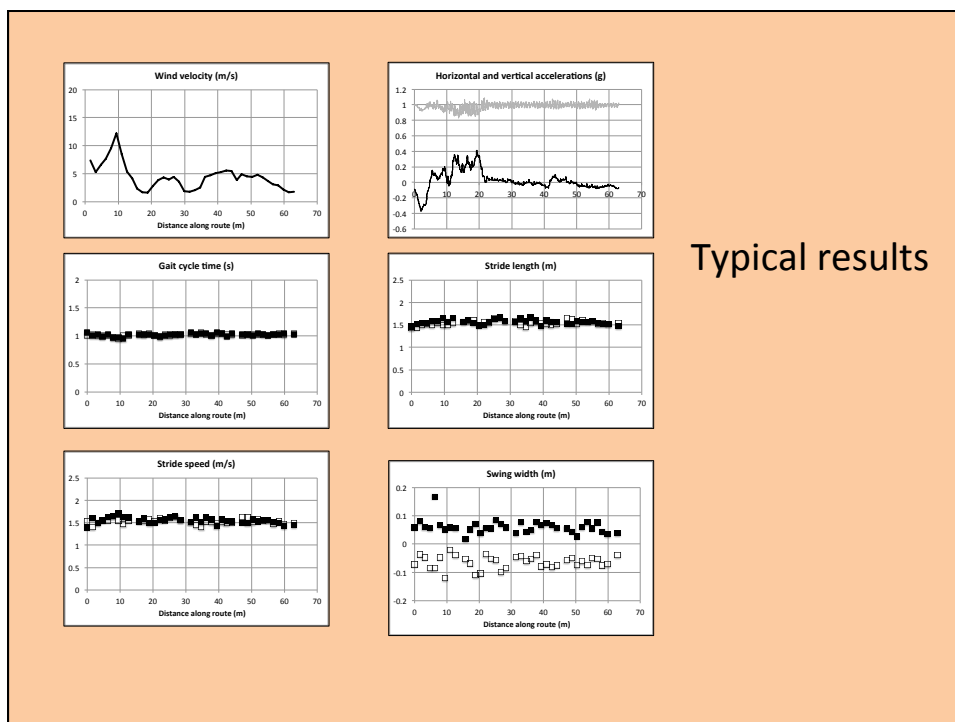
## Full scale measurements



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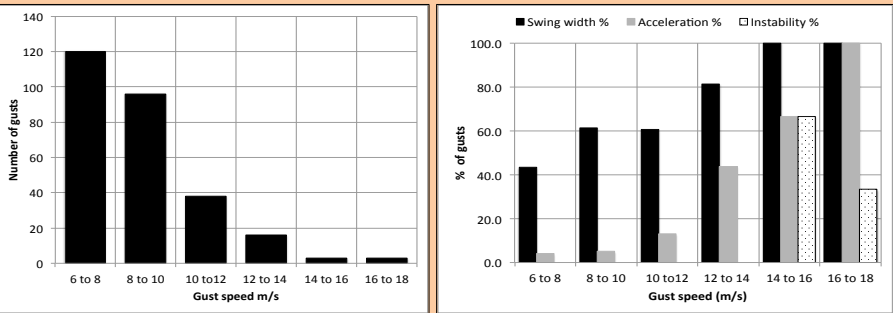
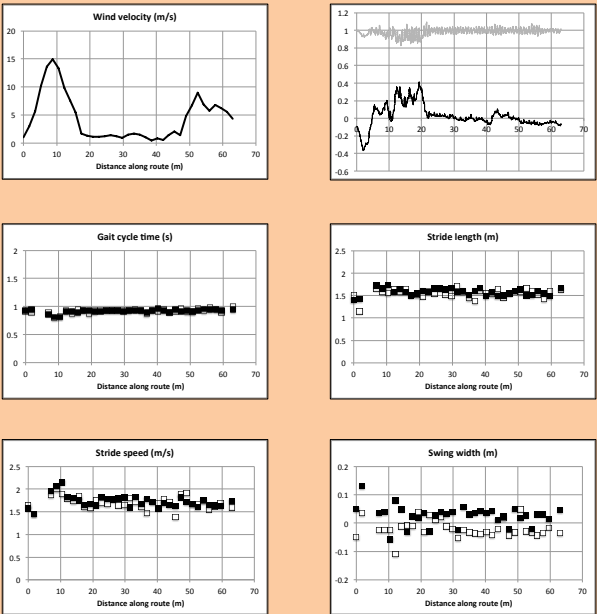
Sensor

Anemometer





Typical results

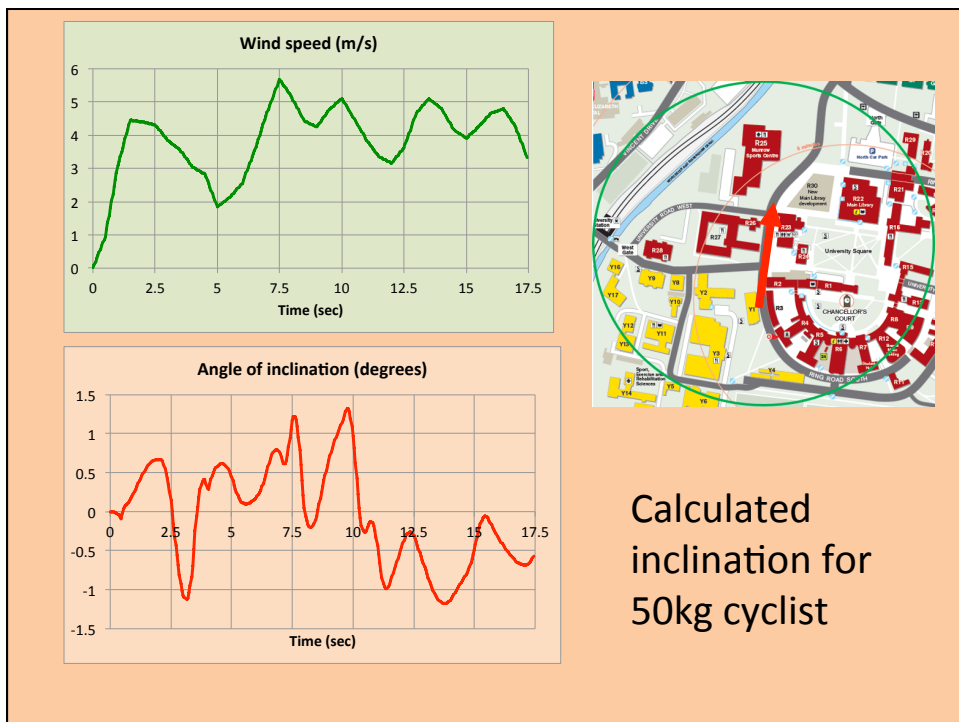
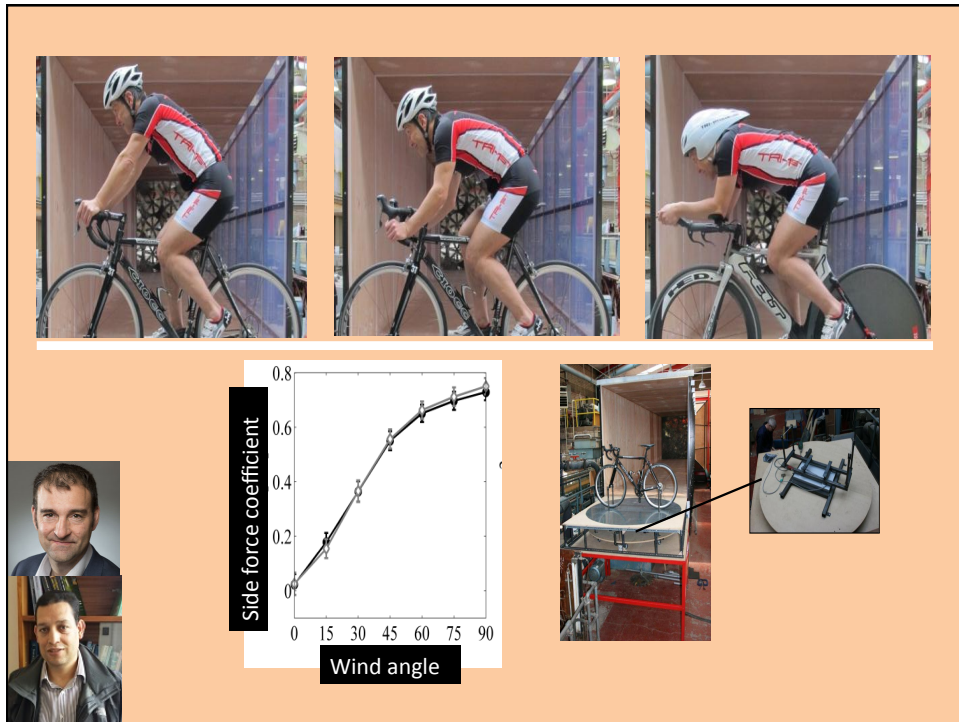


Typical results

## Practical operation

Lawson (2001)		LDCC	
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*Cyclists in high winds*



## *Road vehicles in high winds*



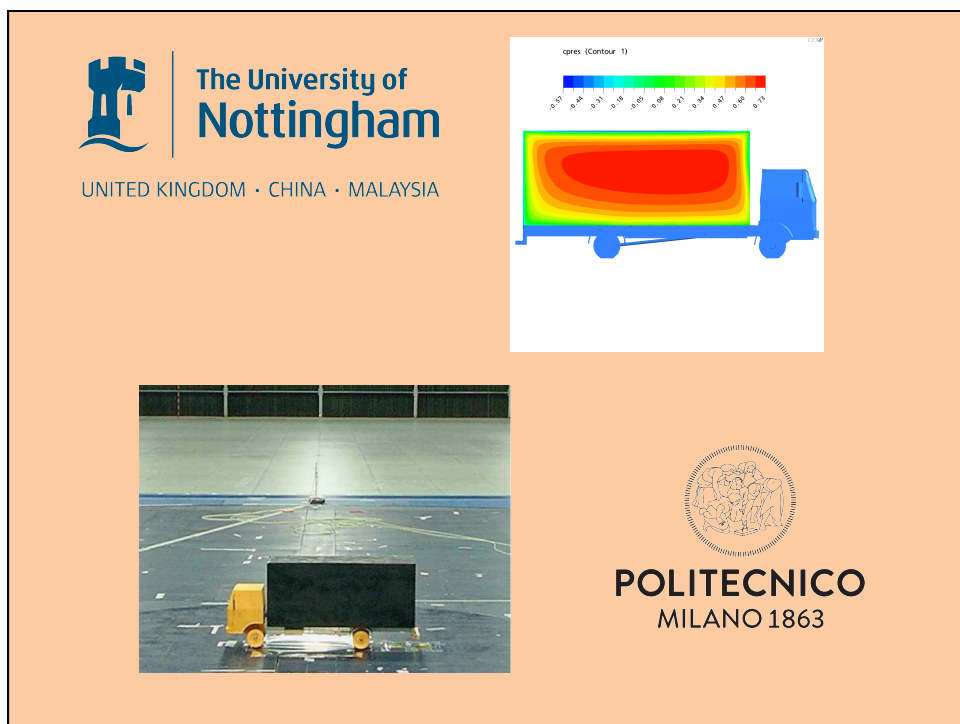
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### **Skye Bridge wind restrictions**

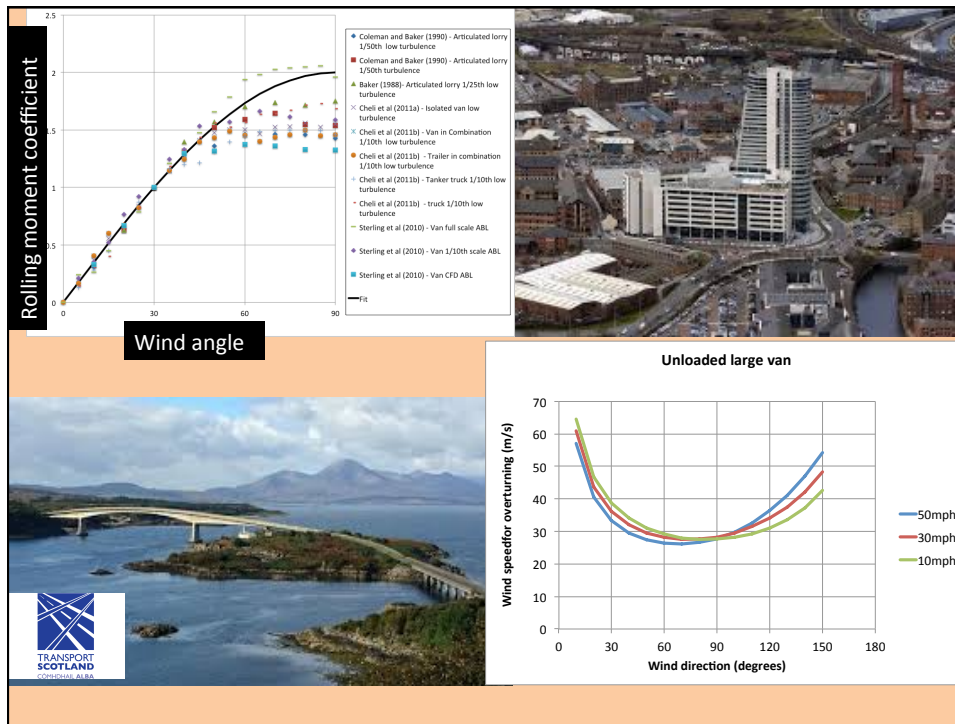
Wind Speed is 35mph – 50mph: Sign advises “Caution High Winds”

Wind Speed is 50mph – 75mph: Sign advises “Skye Bridge Closed to High Sided Vehicles”

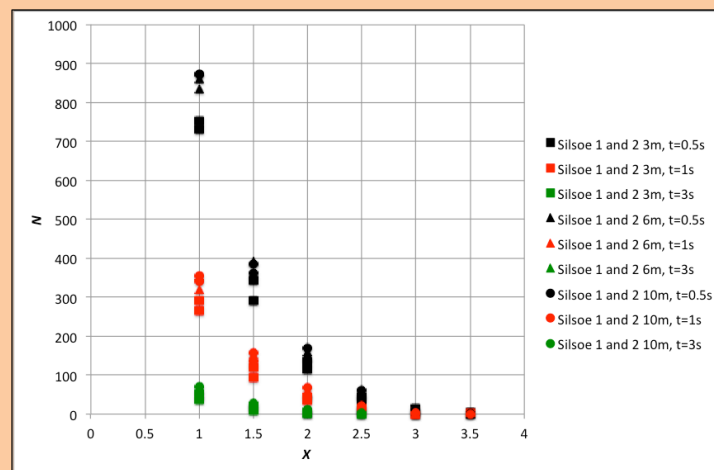
Wind Speed exceeds 75mph: Sign advises “Skye Bridge Closed”

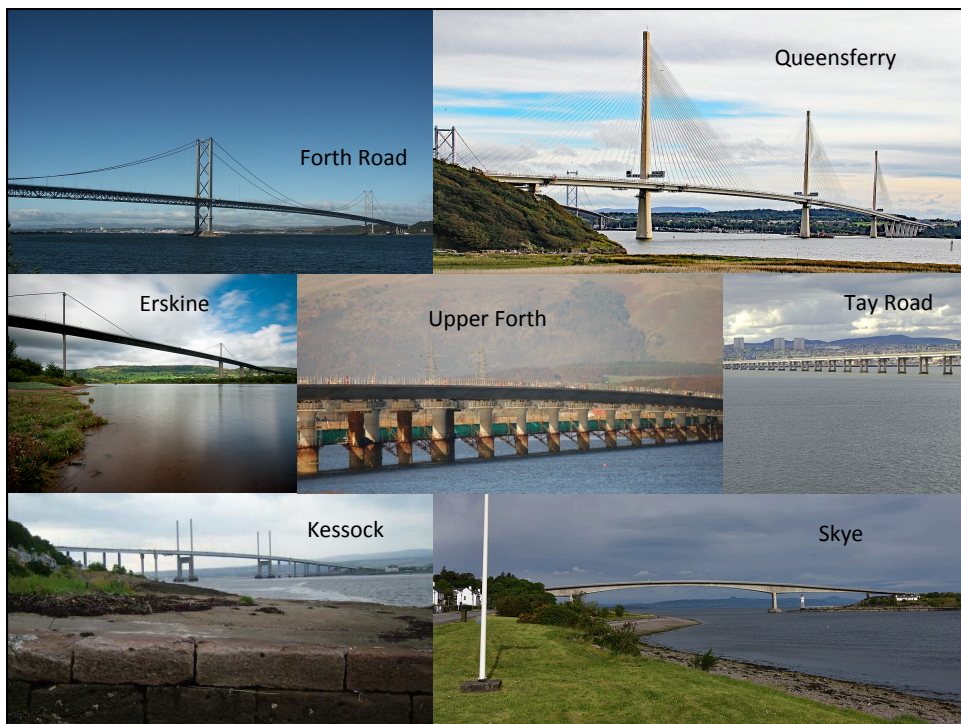






## Gust exceedances





## Practical operation

	Warning	Speed limit (30mph or 40mph)	Windward land closure	Restriction - double deck buses	Restriction - high sided	Restriction - Motorcycles	Restrictions - cycles	Restrictions - pedestrians	Closure
Cleddau				55	55	55	55	70	70
Severn				45*	45*	45*	45*	70*	70*
Prince of Wales									
Queen Elizabeth II		50(C) 60(H)	55(C) 65(H)	60(C) 70(H)	60(C) 70(H)	60(C) 70(H)	60(C) 70(H)	60(C) 70(H)	60(C) 70(H)
Orwell				50(C) 60(H)	50(C) 60(H)	50(C) 60(H)	50(C) 60(H)	50(C) 60(H)	50(C) 60(H)
Humber Erskine	35			45(C) 60(H)	45(C) 60(H)	70	70	70	70
Forth Road		35		45	45	50	50	50	65
Clackmannanshire		35		50	50	75	75	75	75
Skye		35		50	50	75	75	75	75
Kessock									
Tay Road				45	60	60	60	60	80
Queensferry		50		60	70	70	90	90	100

## Practical operation

Posted by **HCTV Admin** on April 10, 2019

**HUMBER BRIDGE DESIGNATED HIGH-SIDED VEHICLE**

3 WHEELERS

MOTORCYCLES

FURNITURE/LUTON VANS

MOPEDS

TRANSIT VANS WITH MODIFICATIONS

ARTICULATED HGV (EMPTY OR FULL)

VEHICLES DRAWING TRAILER OR CARAVAN

MOTORHOMES

HIGH-SIDED RIGID HGV (EMPTY OR FULL)

ARTICULATED/RIGID TIPPER (EMPTY OR FULL)

CAR TRANSPORTERS

DOUBLE DECKER BUSES

ABNORMAL LOADS SPECIAL TYPES (ADVANCE NOTICE HUMBER BRIDGE)

@humberbridgeofficial @humberbridge [www.humberbridge.co.uk](http://www.humberbridge.co.uk)

High-Sided Vehicles Defined As Part Of **Humber Bridge** Campaign



## *Rail vehicles in high winds*



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