



City of London Climate Modelling

Ender Ozkan
Vice President, RWDI

The Vision

Rapidly growing City of London





**Changing lifestyle,
demanding a healthy
outdoor spaces**



**Creation of new
public plazas across
the Square Mile**





Tall buildings play a
vital role in meeting
the demand



Walkie Talkie wind complaints prompt City clampdown

7 July 2015 | By Tim Clark



MailOnline



Home News U.S. | Sport | TV&Showbiz | Australia | Femal | Health | Science | Money | V
Latest Headlines | News | World News | Arts | Headlines | France | Pictures | Most read | News Board | Wire

Windy City! How down-draught from London's 'walkie talkie' skyscraper is blowing workers over and knocking signs off buildings in the Square Mile

- Skyscraper 20 Fenchurch Street known as 'Walkie Talkie' because of shape
- There have been complaints that powerful down-draught is causing havoc
- The £200million 525ft building thought to be creating 'wind tunnel' at base
- Witnesses claim people have been pushed over by the strong winds

However tall buildings have a bad rep in public domain

Sunshade for Walkie-Talkie skyscraper glare problem

15 May 2014 | London

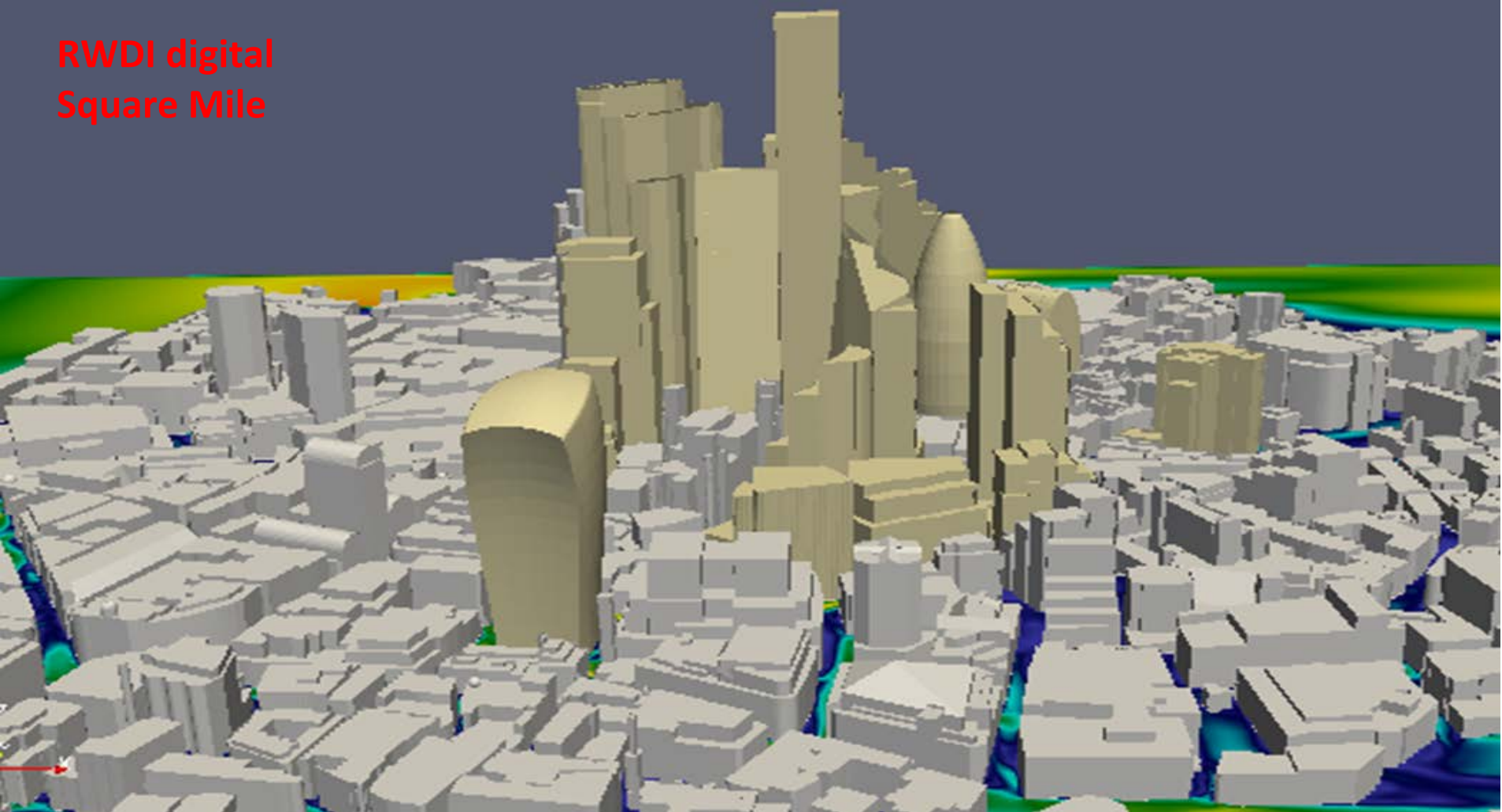
f t b e Share



A permanent sunshade structure will be attached to the 37-storey building

The Project

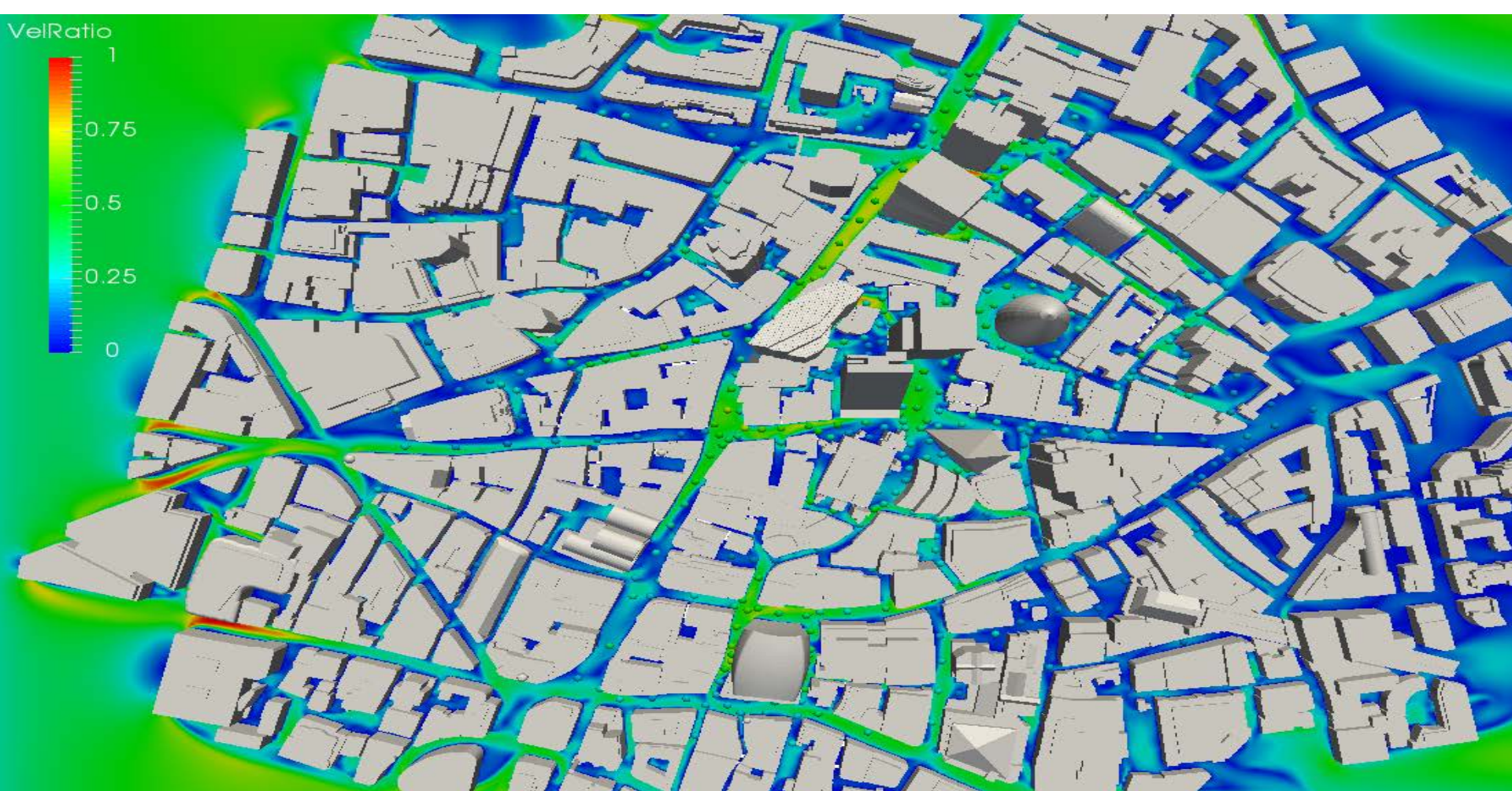
RWDI digital
Square Mile



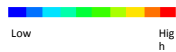
RWDI physical
Square Mile



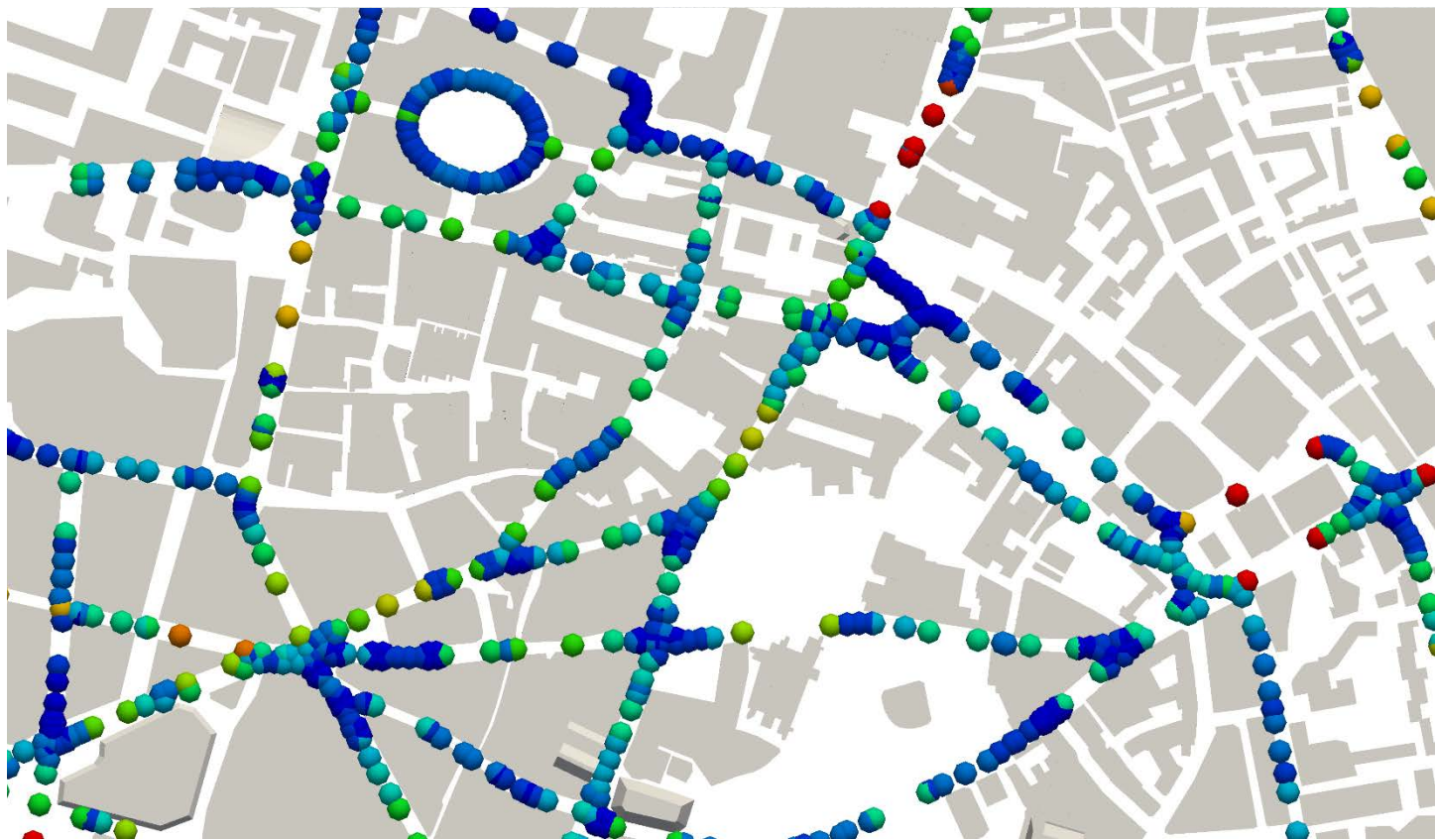




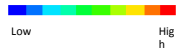
Computer Fluid Dynamics Analysis (CFD)



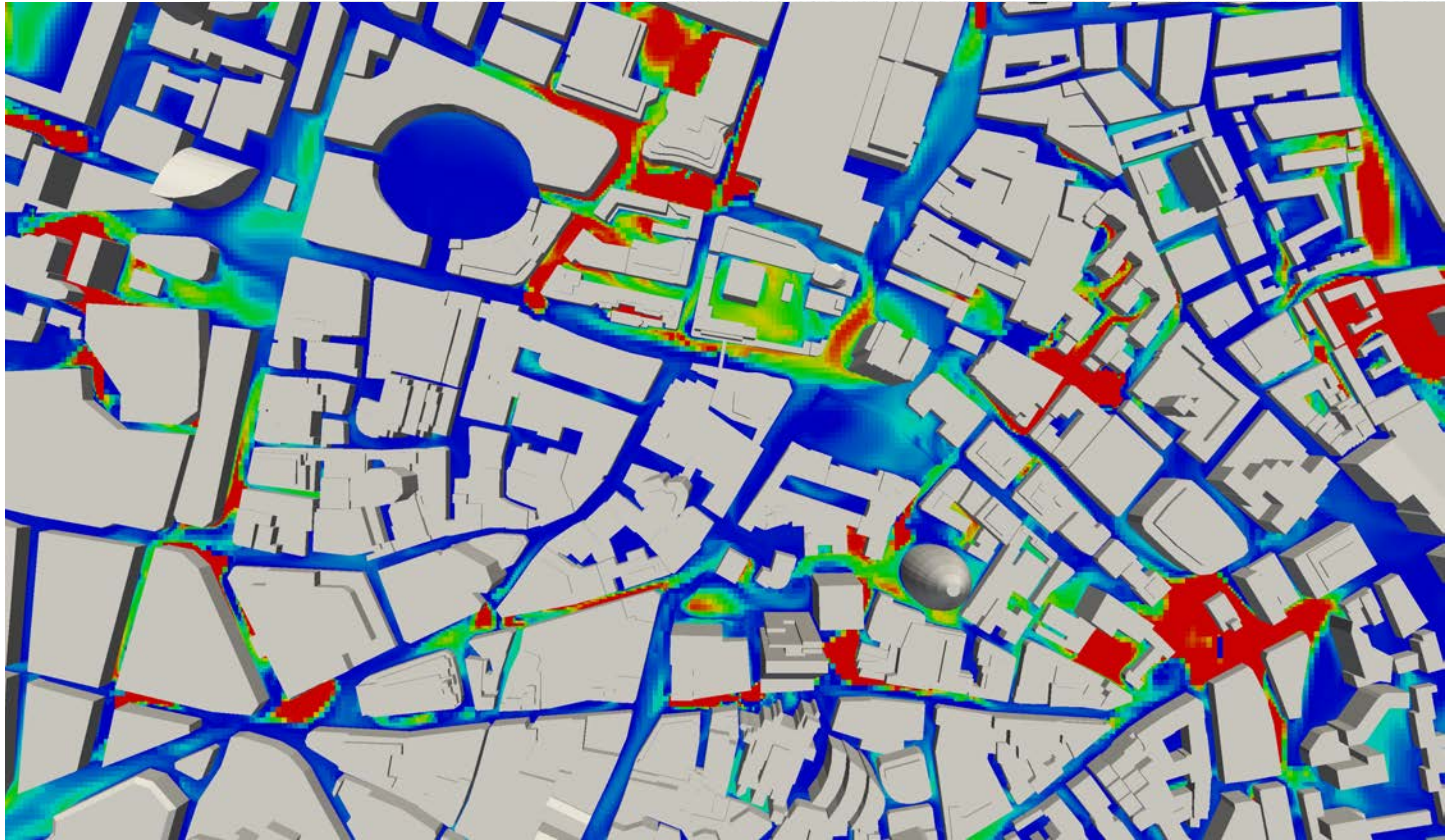
Emissions Map

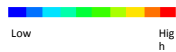


Releasing traffic-generated pollutants in CFD

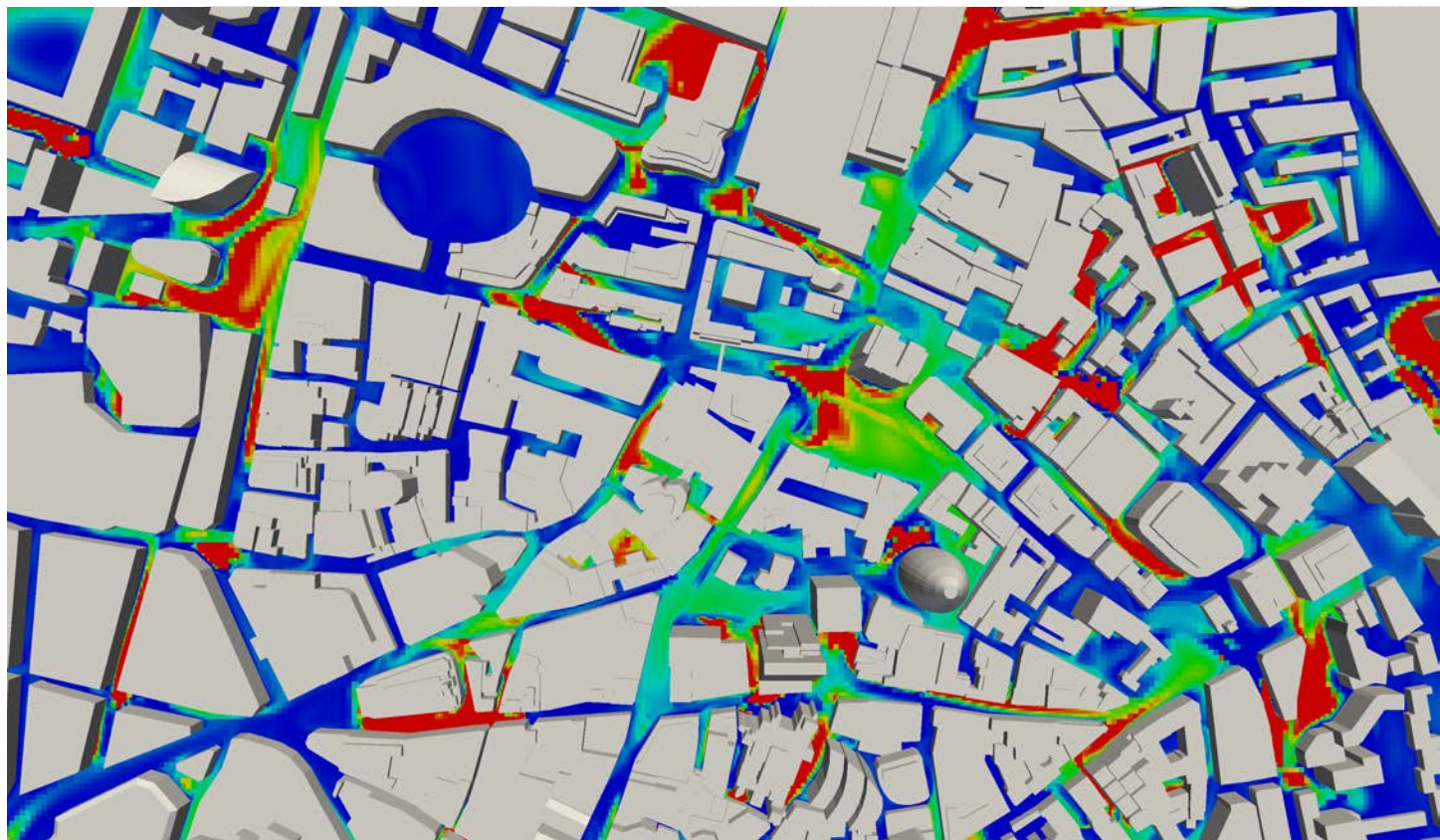


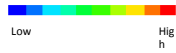
Concentration (winds from 180°)



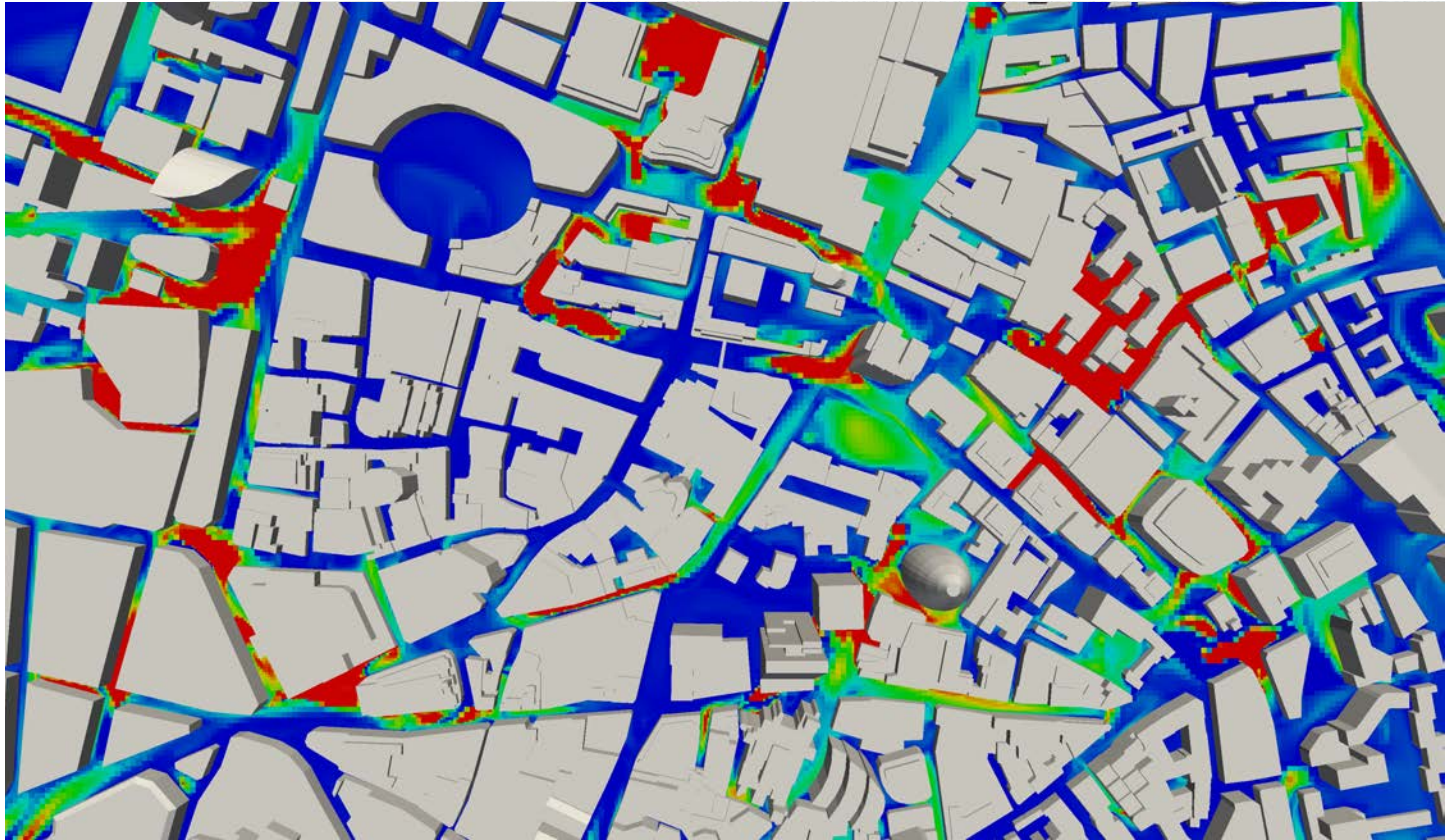


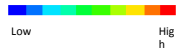
Concentration (winds from 220°)



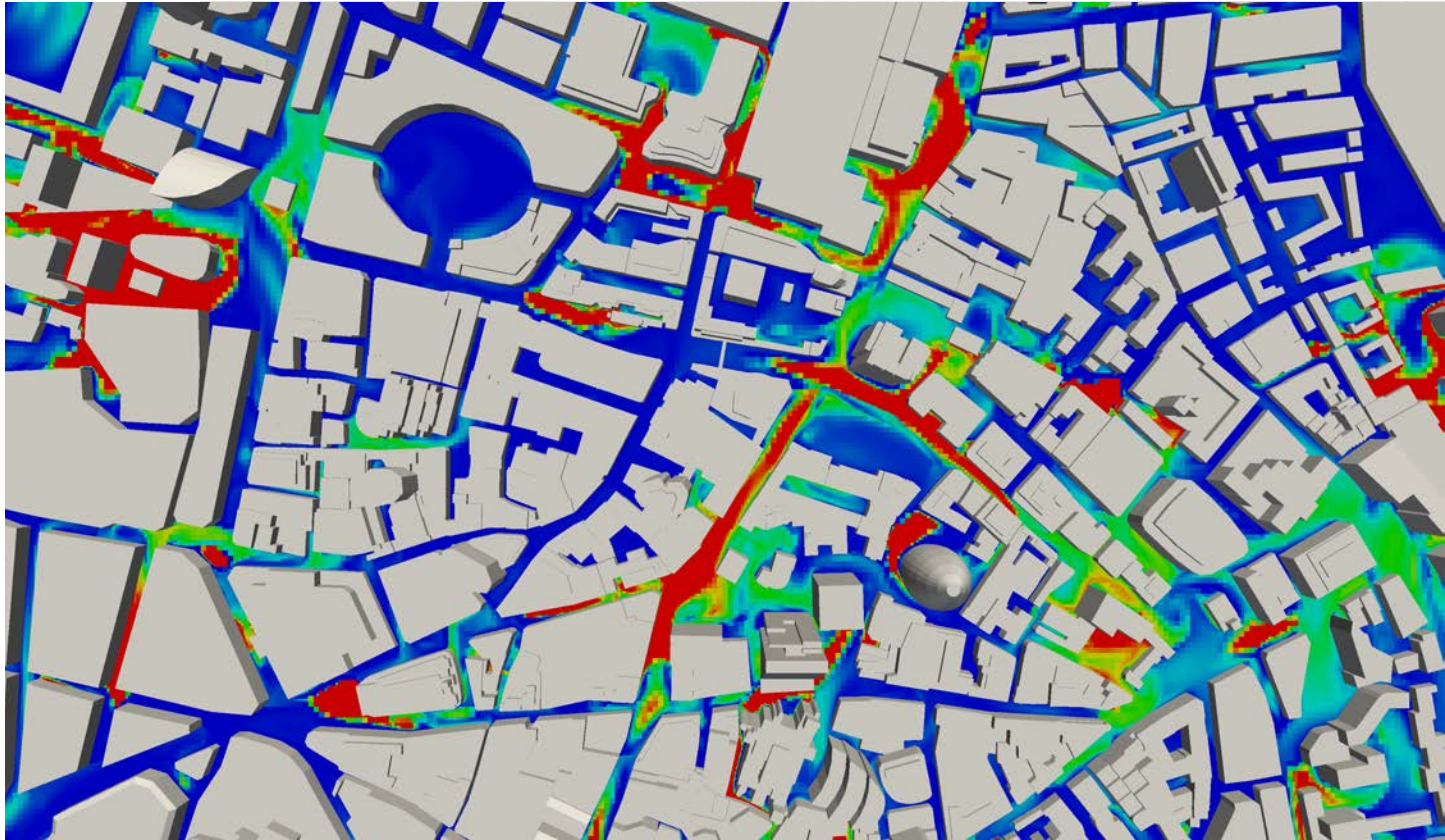


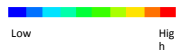
Concentration (winds from 240°)



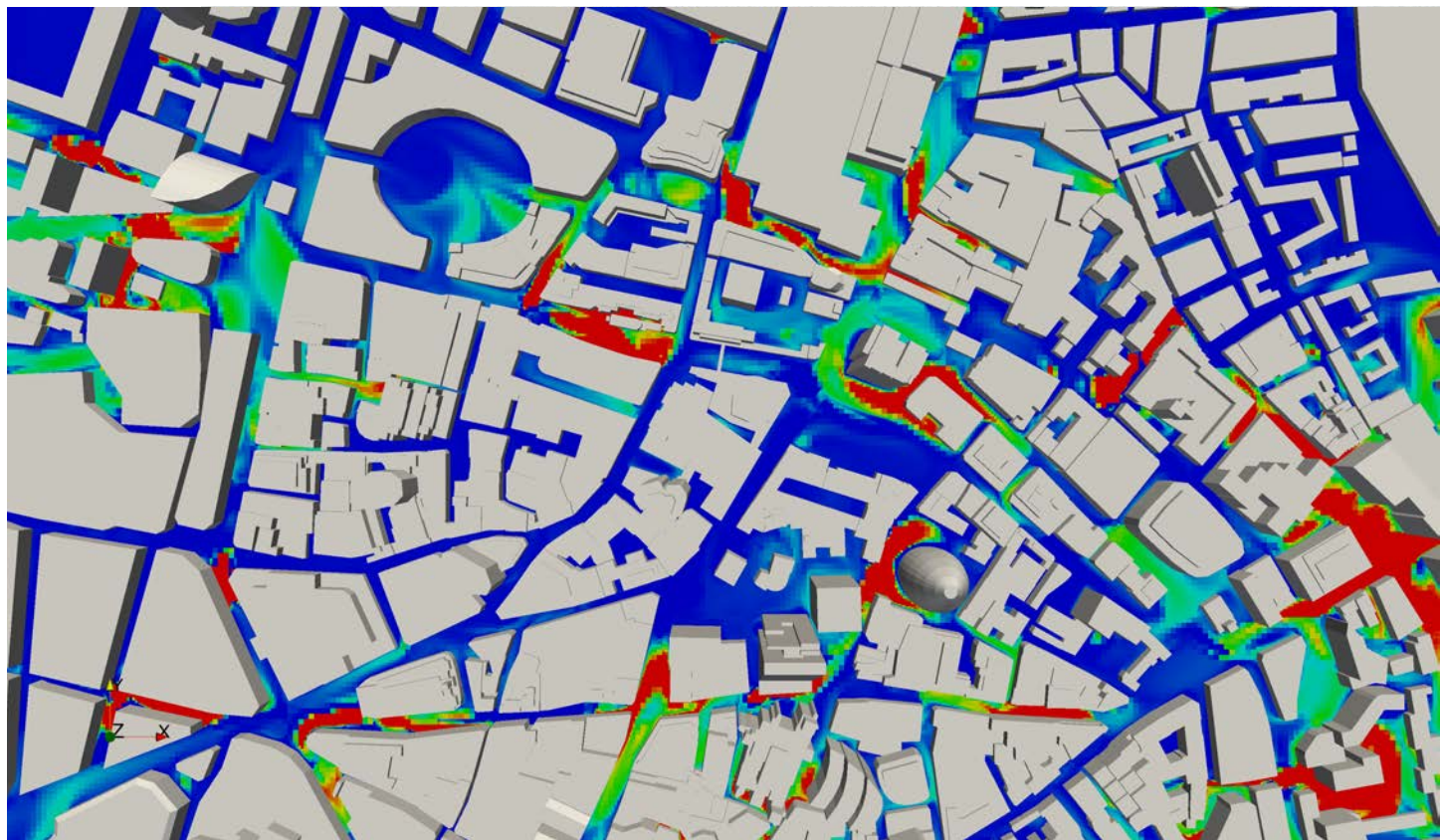


Concentration (winds from 260°)

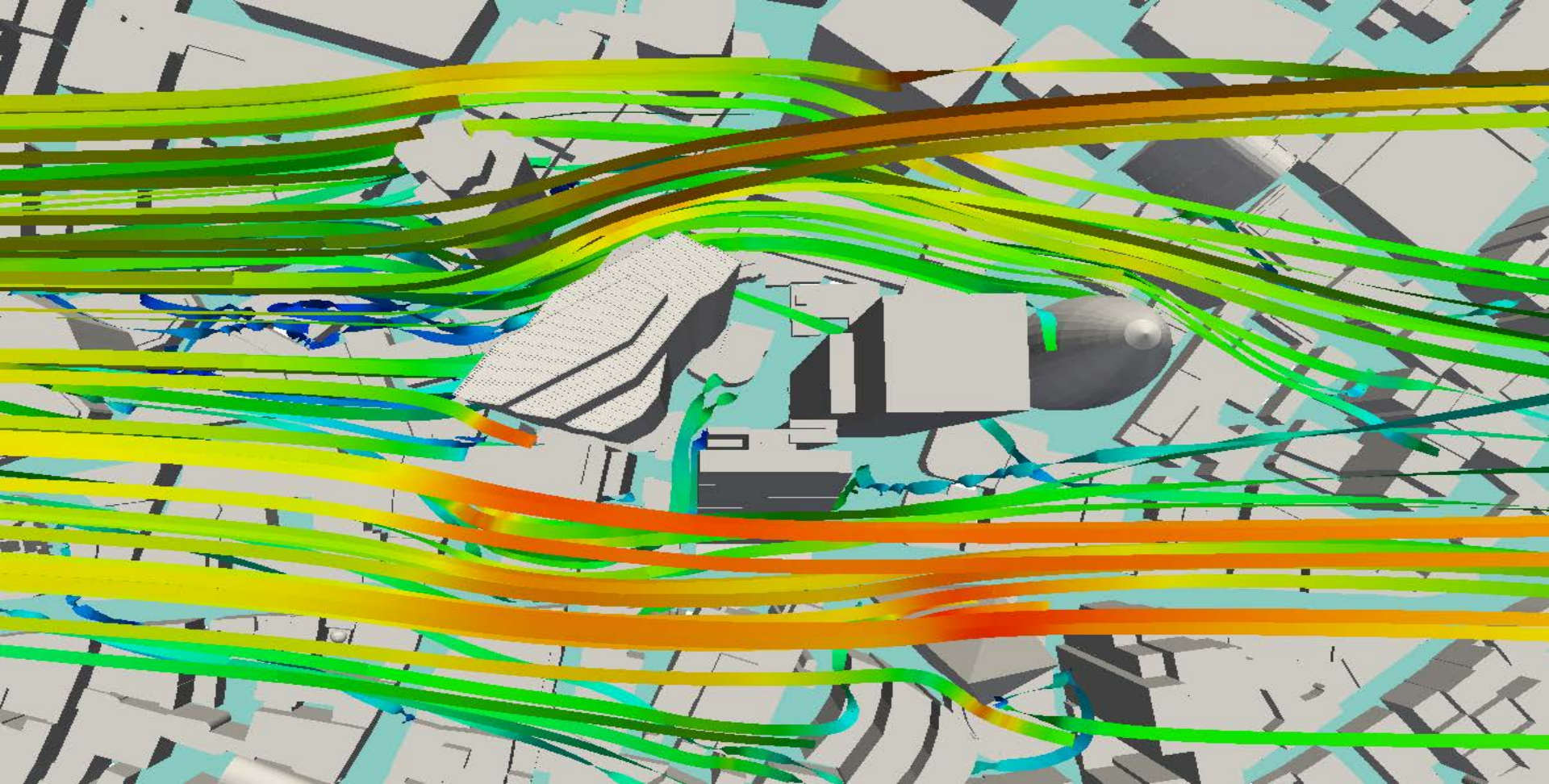




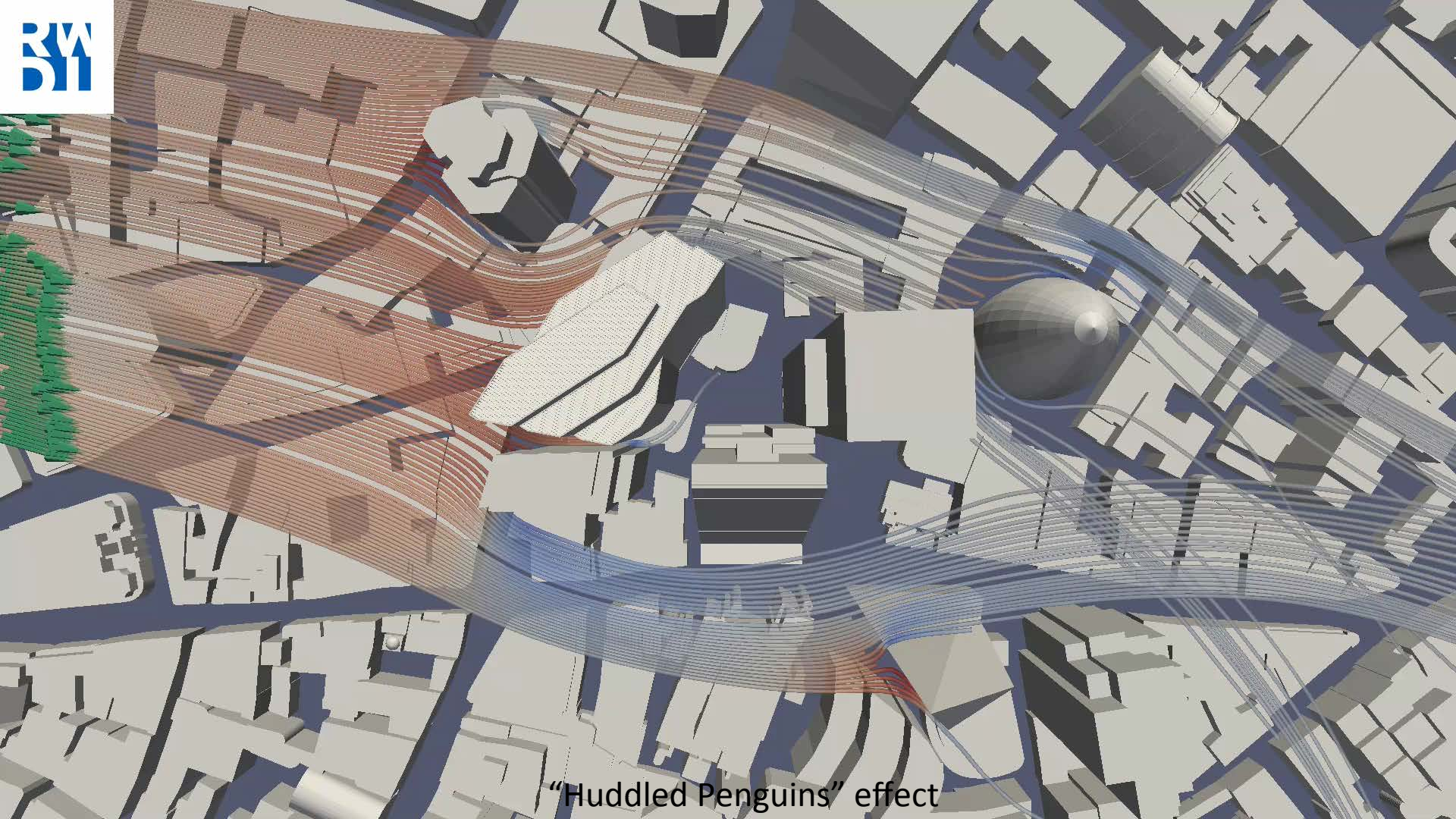
Concentration (winds from 280°)



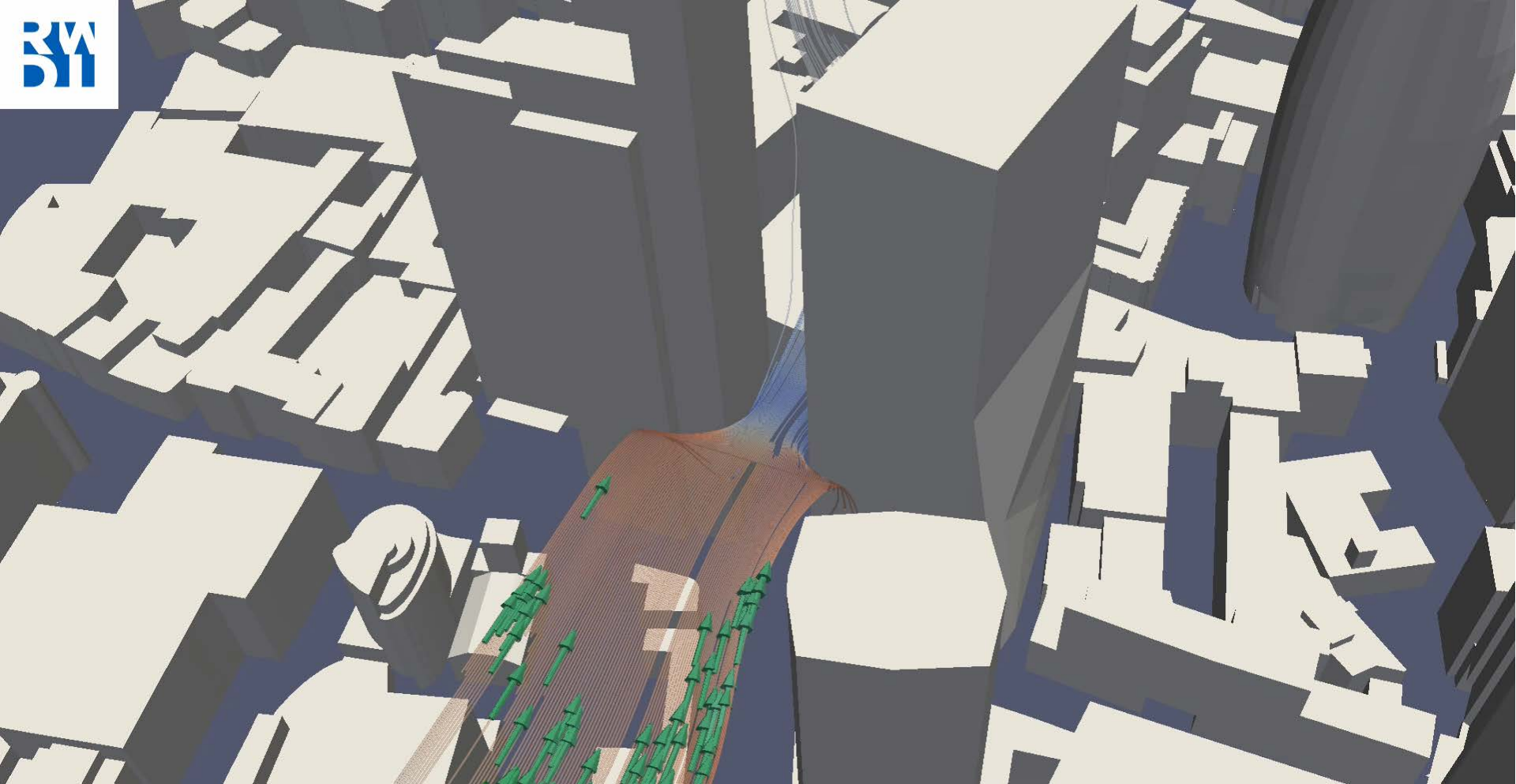
Observations



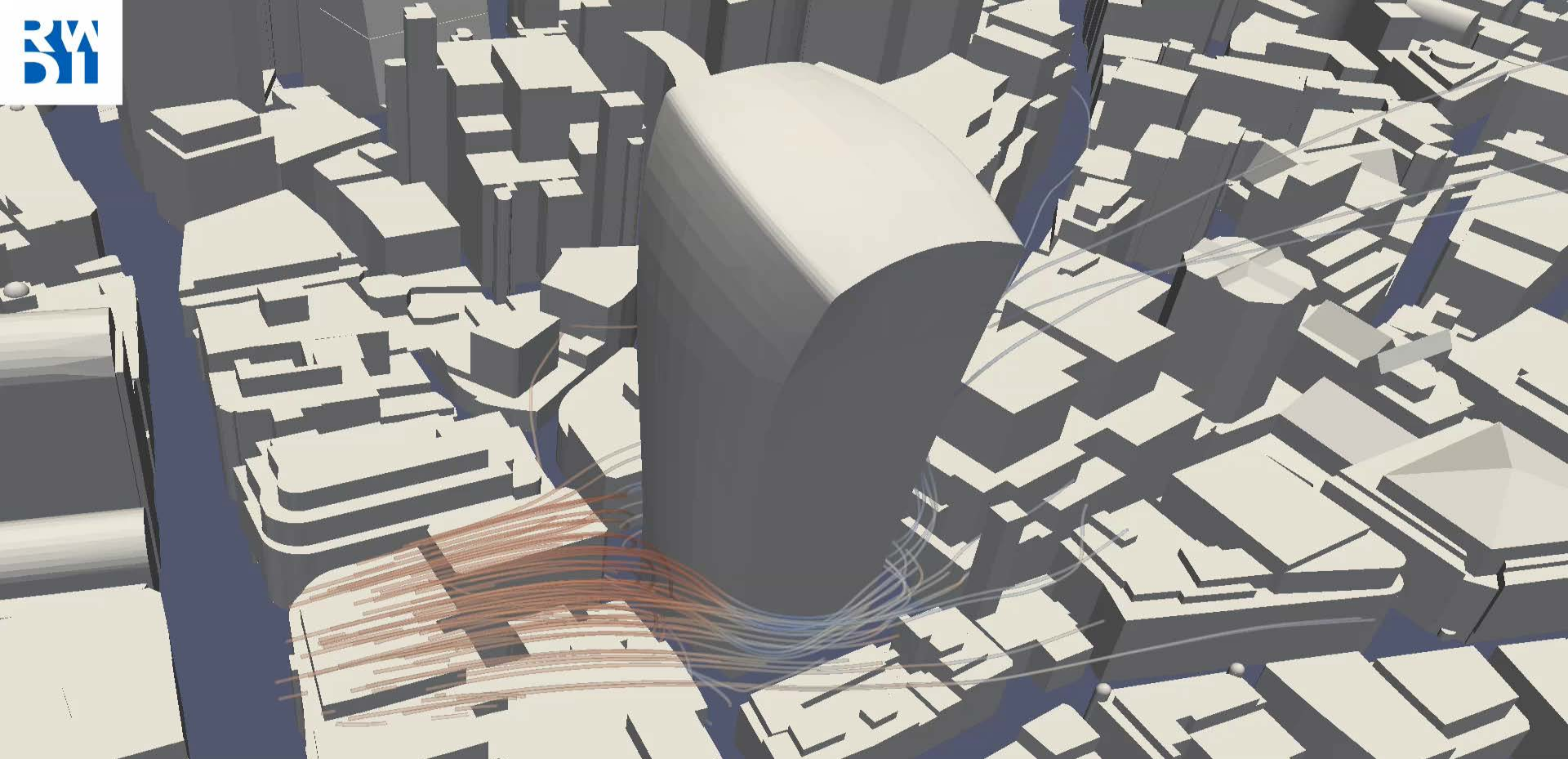
“Huddled Penguins” effect



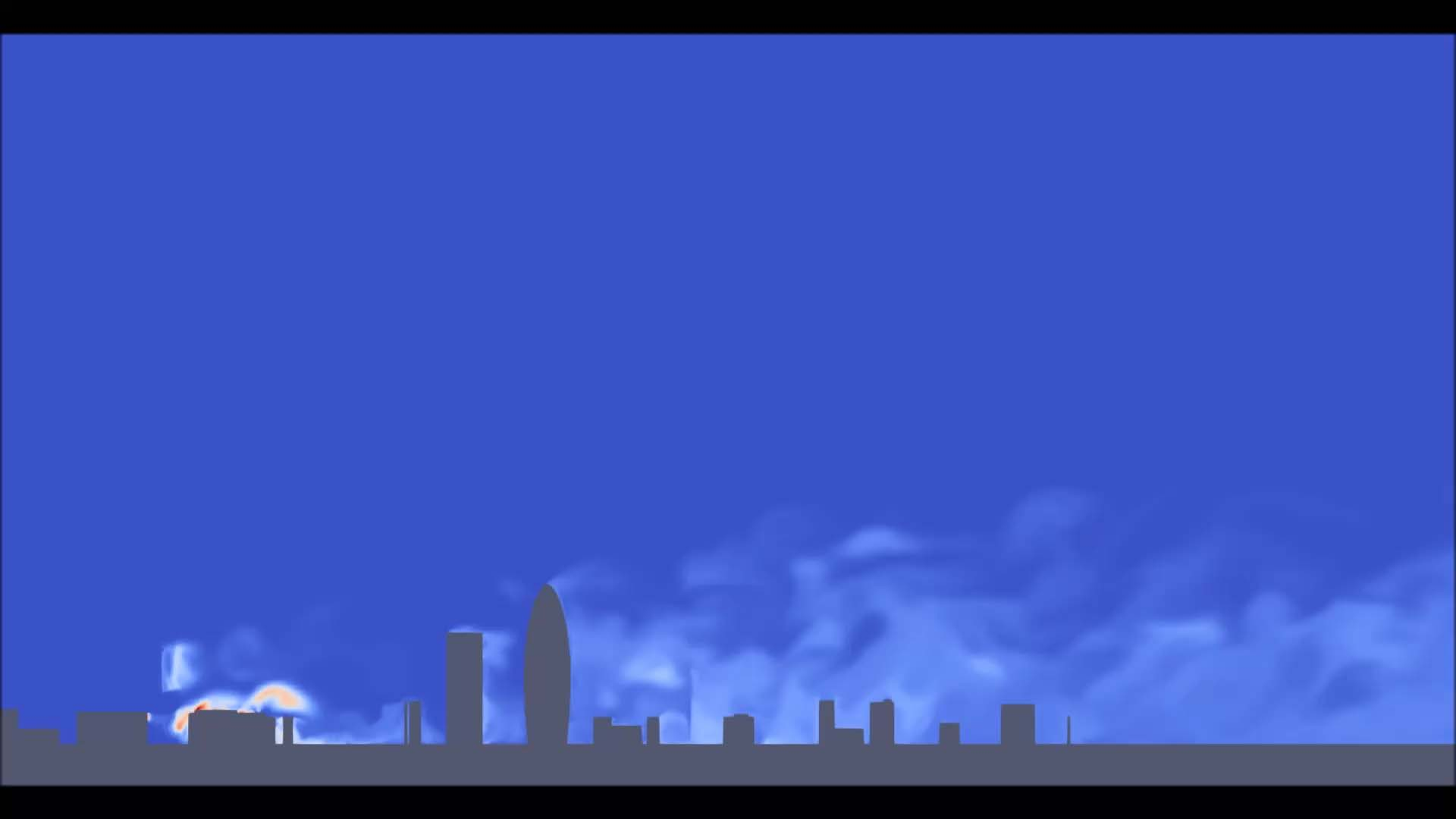
"Huddled Penguins" effect



London Wall / Bishopsgate

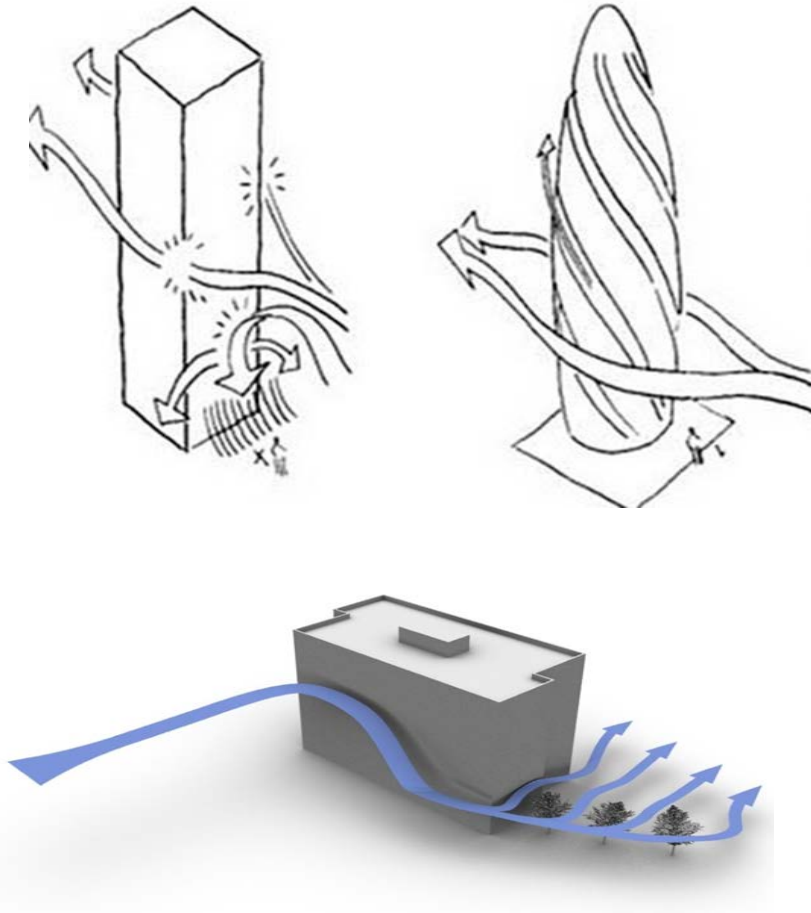


20 Fenchurch Street

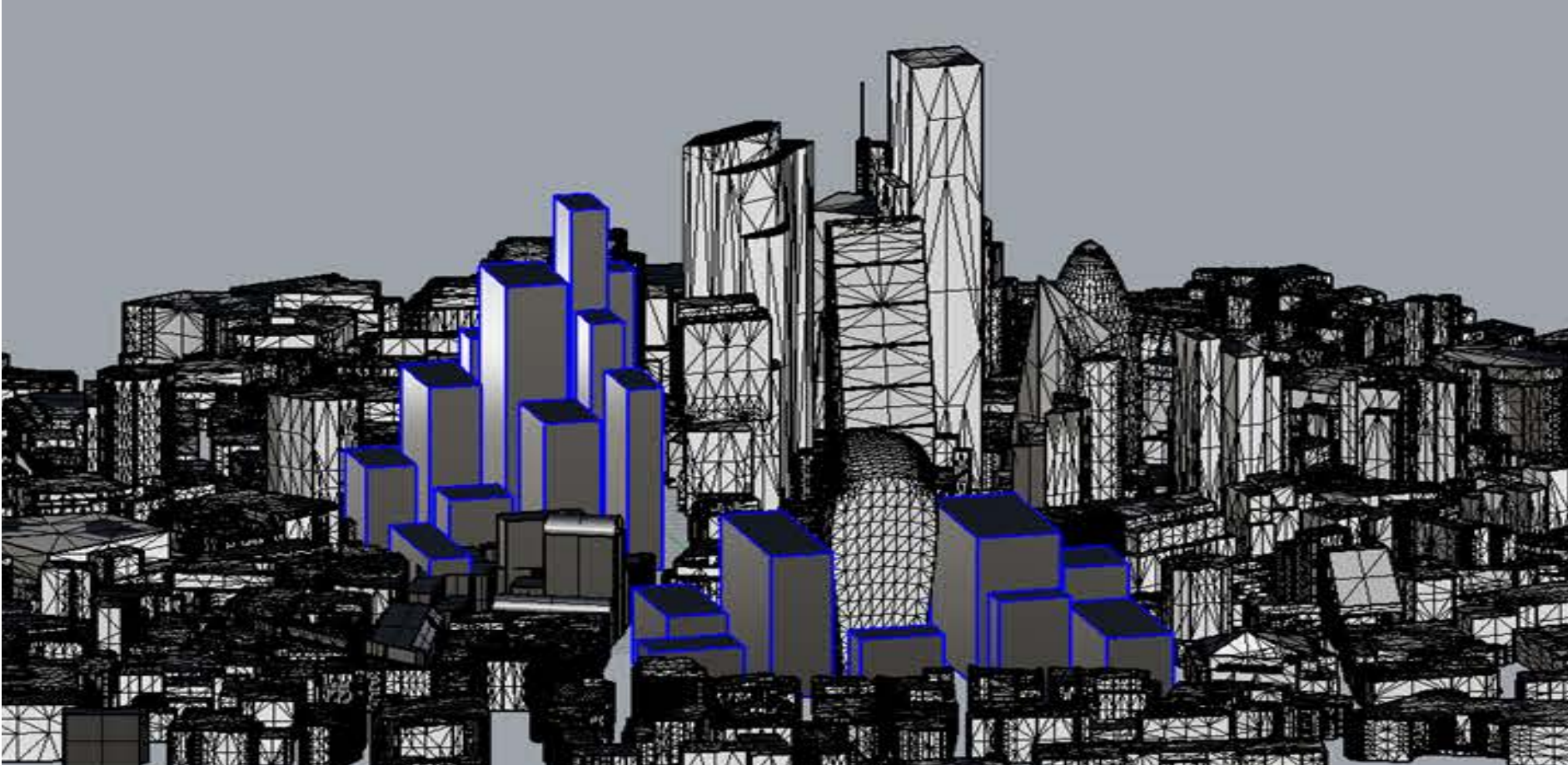




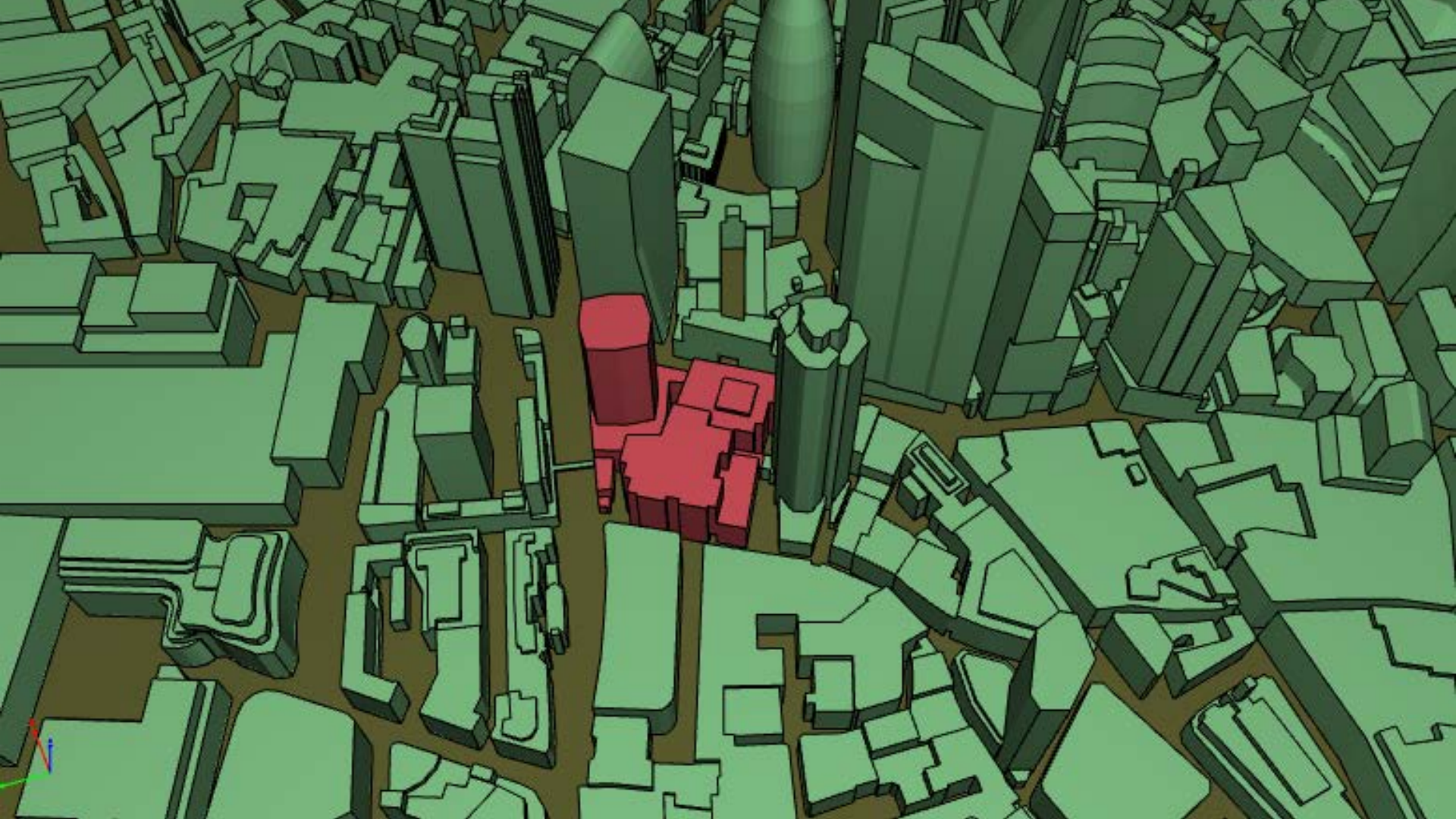
Addressing the Challenge

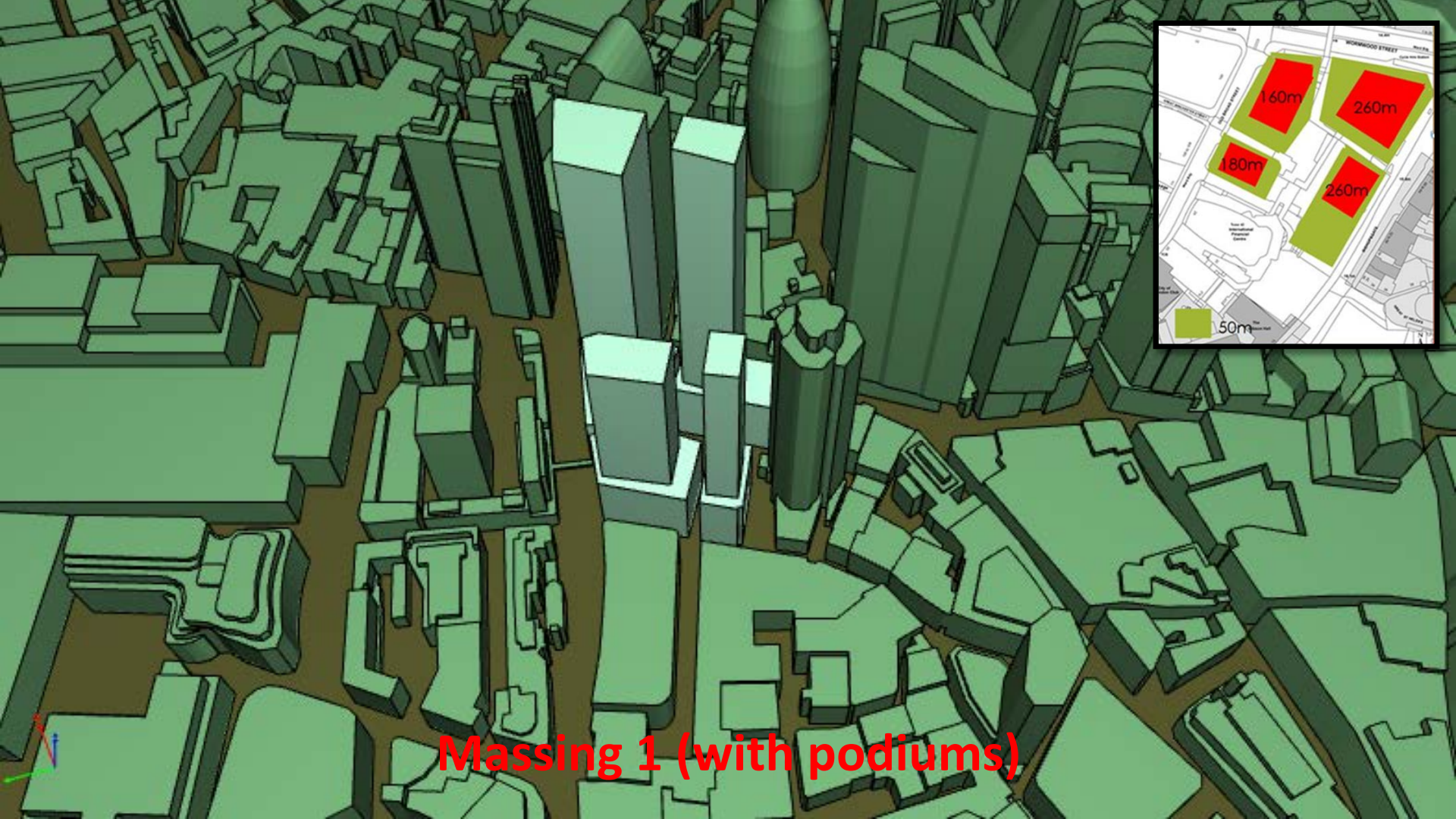


1) Creating Robust Guidelines for Environmental Effects

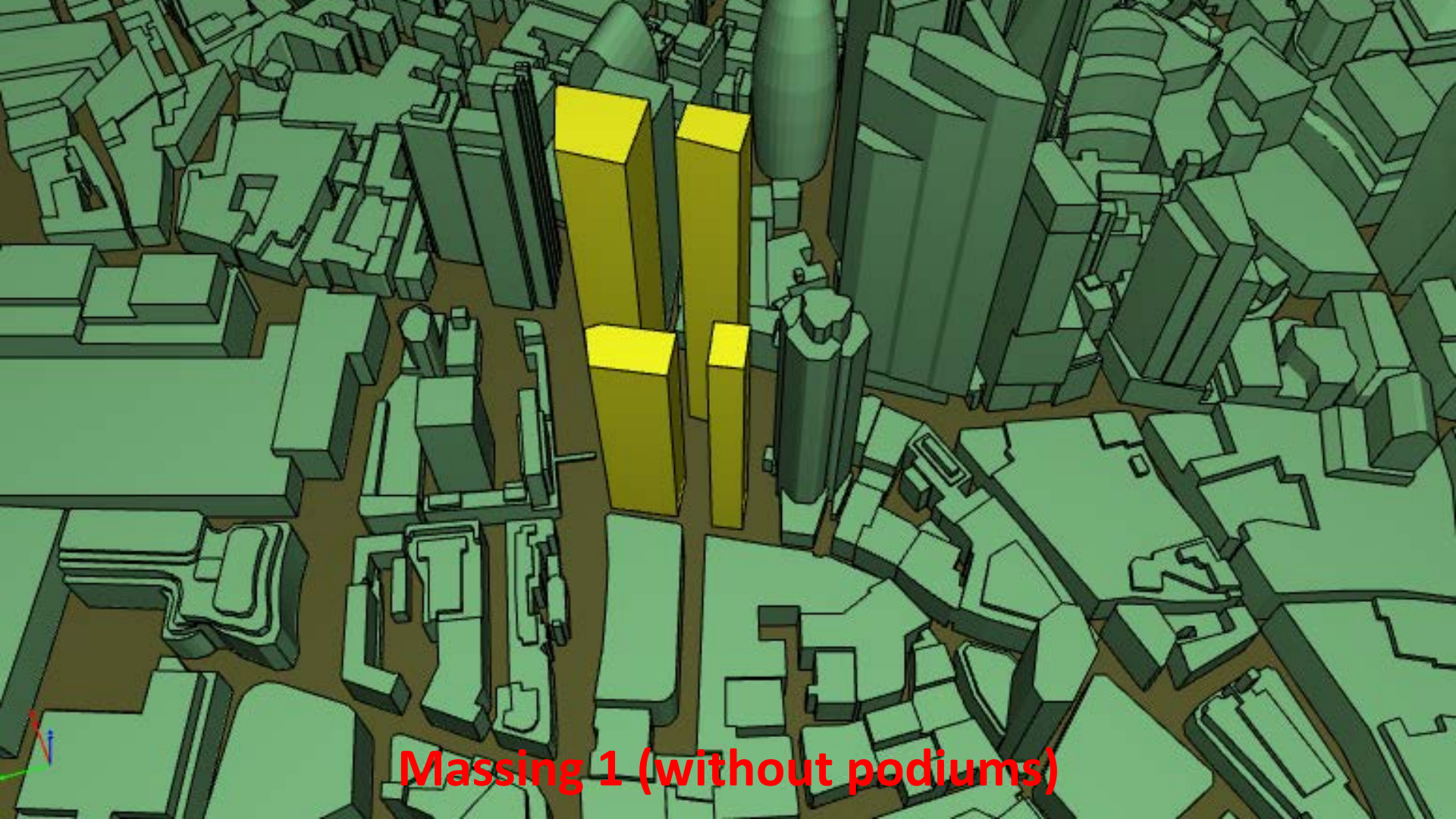


2) Pro-Active Master-planning Tools



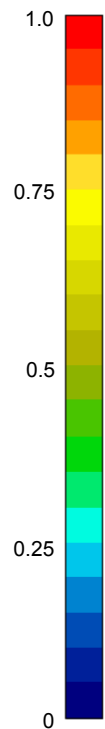


Massing 1 (with podiums)

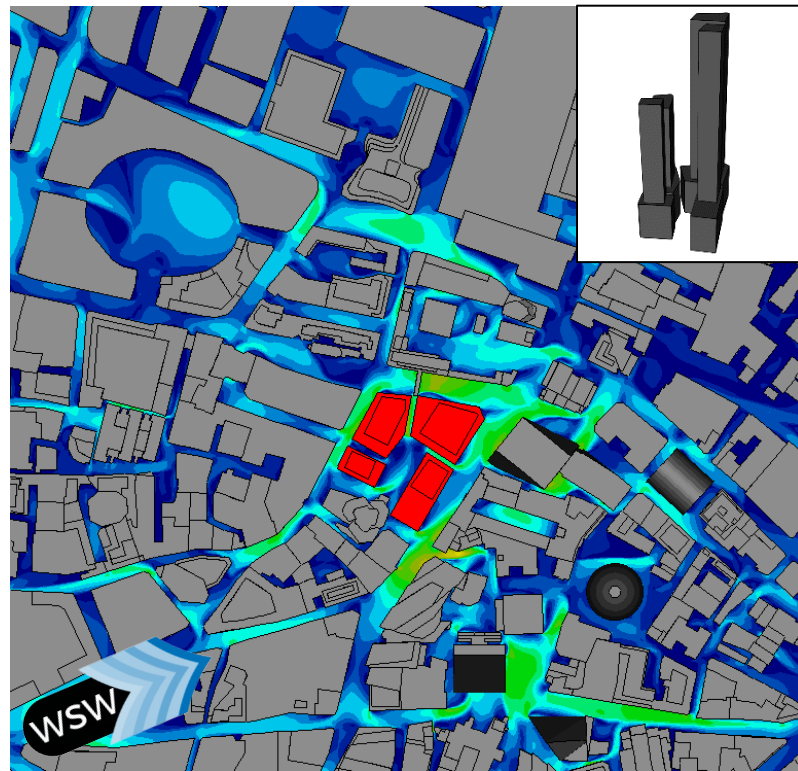


Massing 1 (without podiums)

Wind Speed
Ratio

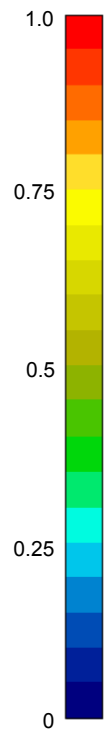


Existing

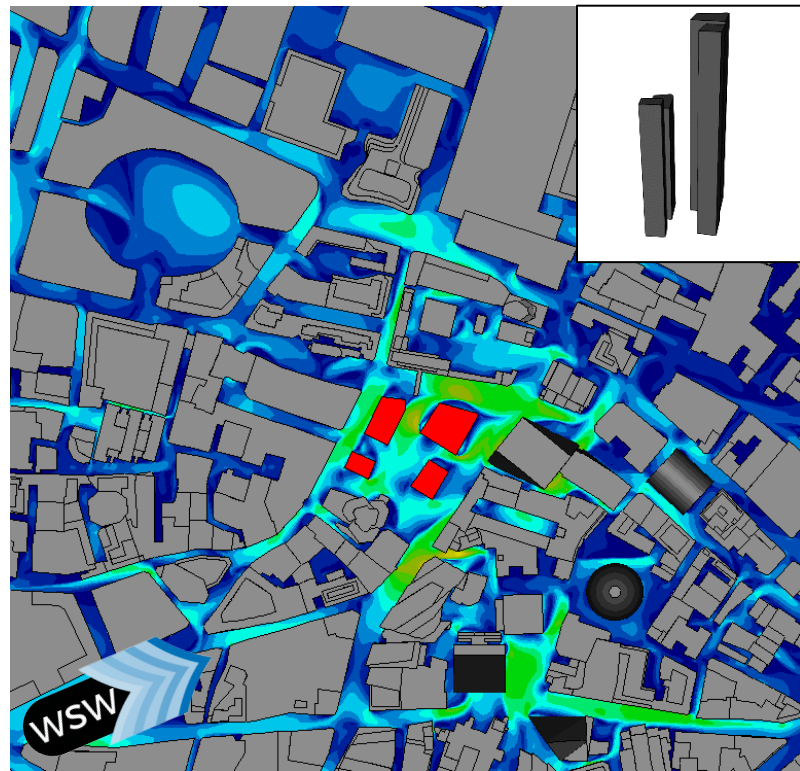


Massing 1 – With Podium

Wind Speed
Ratio



Existing

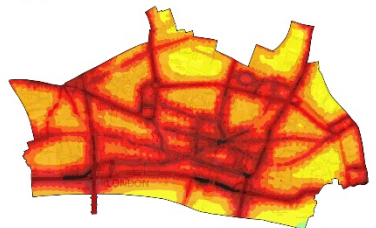


Massing 1 – Without Podium

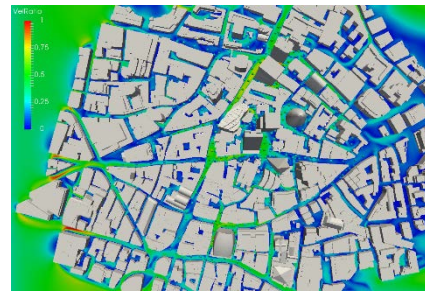


NO₂ concentration (µg/m³)

0-10
10-20
20-30
30-40
40-50
50-60
60-70
70-80
80-90
90-100
100-110
110-120
120-130
130-140
140-150
150-160
160-170
170-180
180-190
190-200
200-210
210-220
220-230
230-240
240-250
250-260
260-270
270-280
280-290
290-300
300-310
310-320
320-330
330-340
340-350
350-360
360-370
370-380
380-390
390-400
400-410
410-420
420-430
430-440
440-450
450-460
460-470
470-480
480-490
490-500
500-510
510-520
520-530
530-540
540-550
550-560
560-570
570-580
580-590
590-600
600-610
610-620
620-630
630-640
640-650
650-660
660-670
670-680
680-690
690-700
700-710
710-720
720-730
730-740
740-750
750-760
760-770
770-780
780-790
790-800
800-810
810-820
820-830
830-840
840-850
850-860
860-870
870-880
880-890
890-900
900-910
910-920
920-930
930-940
940-950
950-960
960-970
970-980
980-990
990-1000



AIR Quality



Wind Comfort



Sunlight



Thermal Comfort

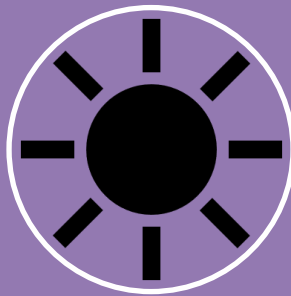
Environmental Maps
Publicly Accessible



AQ



Wind



Sunlight



Thermal

Balanced Scorecard



City of London Pedestrian modelling

