



# City of London Climate Modelling

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# 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



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### 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' as base
- Witnesses claim people have been pushed over by the strong winds

However tall buildings have a bad rep in public domain

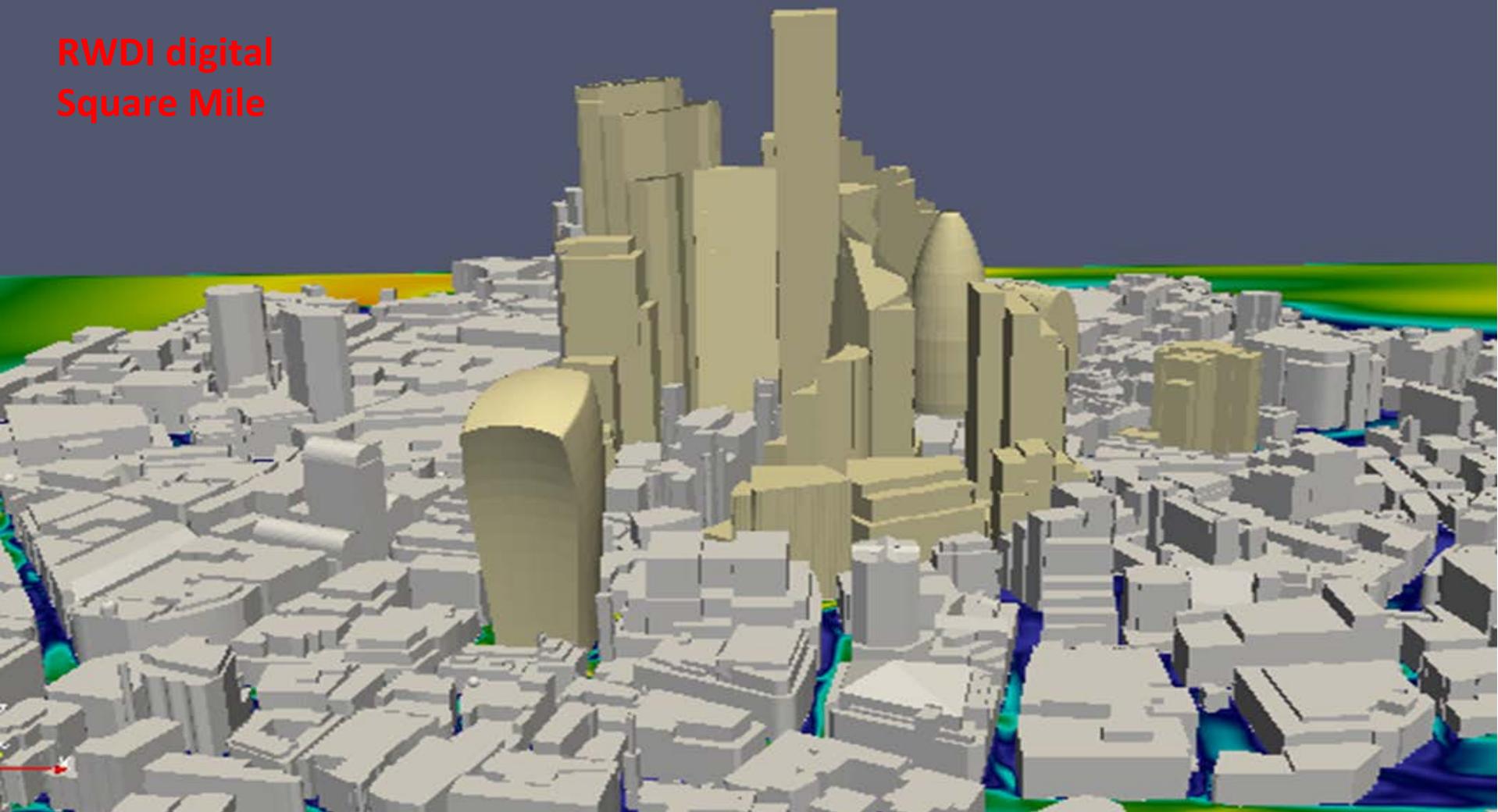
## Sunshade for Walkie-Talkie skyscraper glare problem

15 May 2014 | London



# The Project

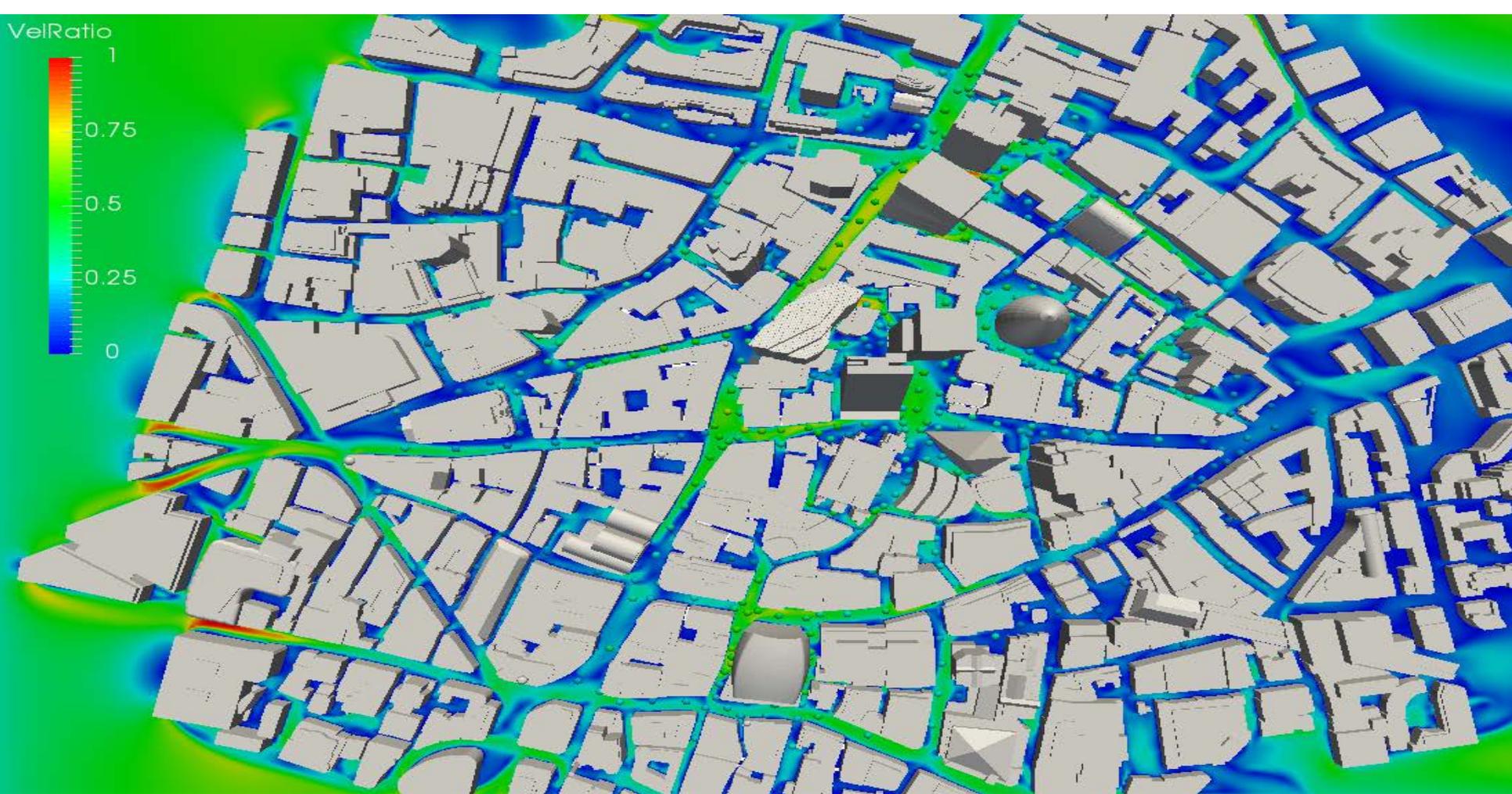
RWDI digital  
Square Mile



**RWDI physical  
Square Mile**



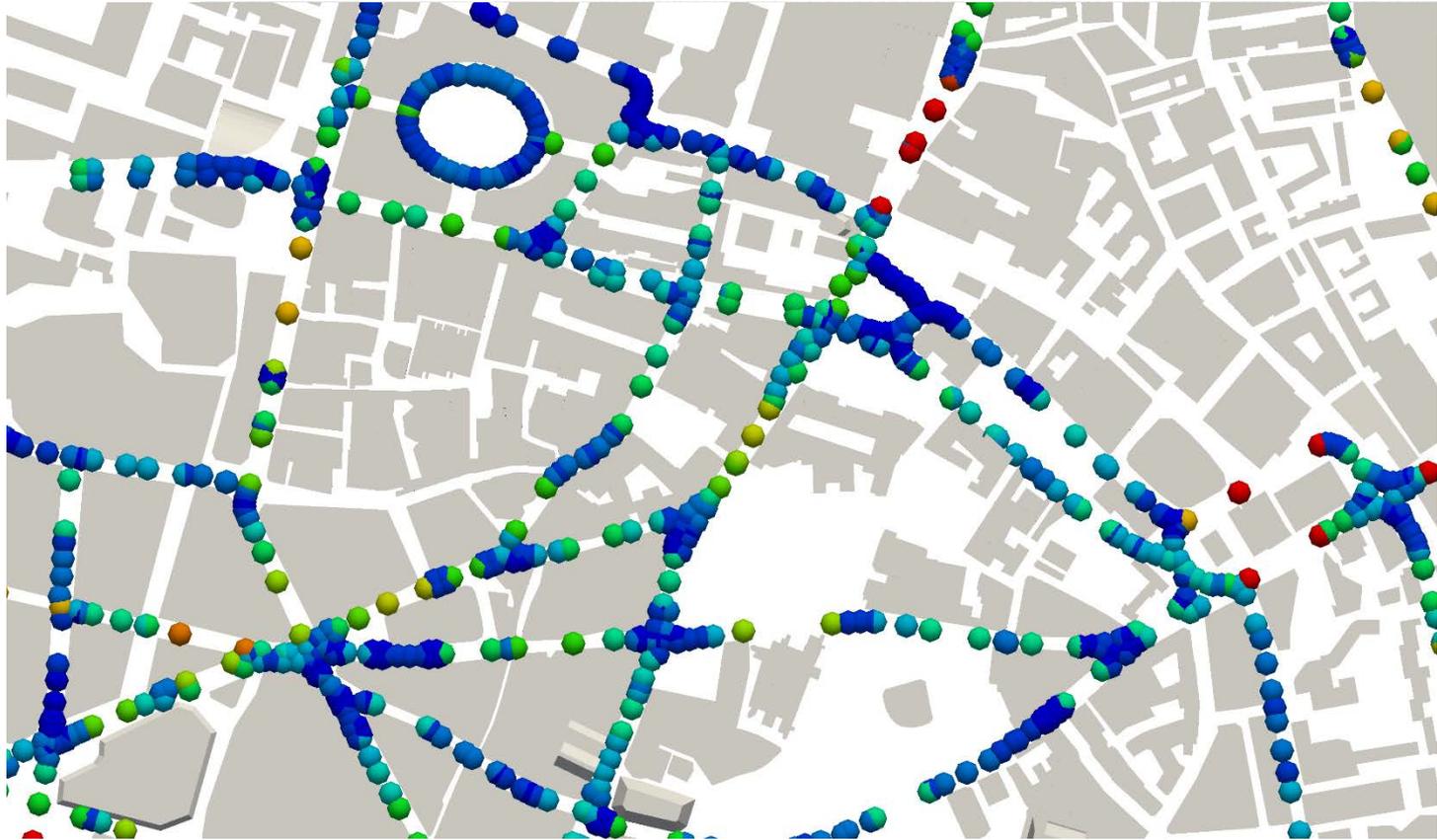




Computer Fluid Dynamics Analysis (CFD)



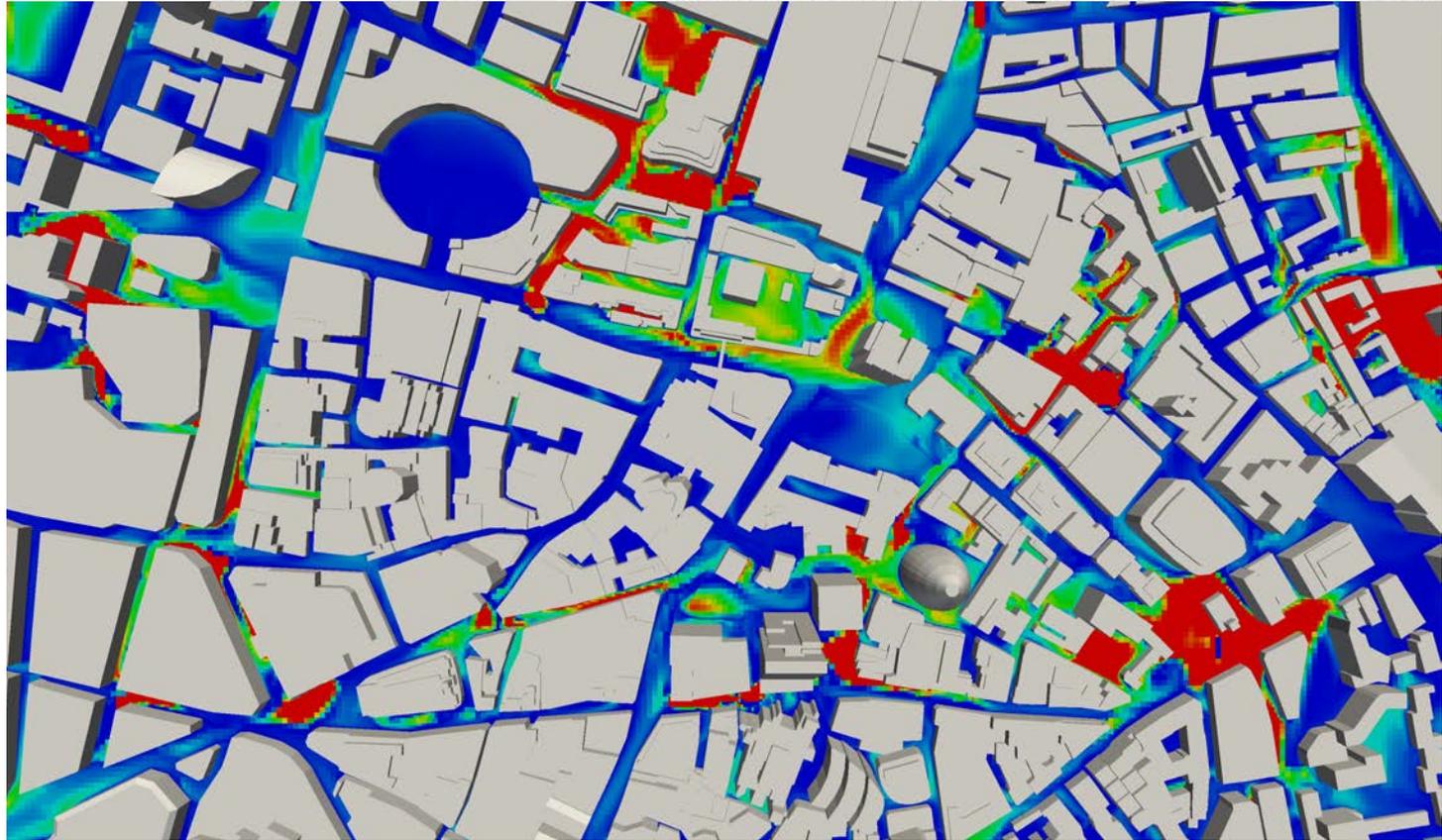
# Emissions Map



Releasing traffic-generated pollutants in CFD

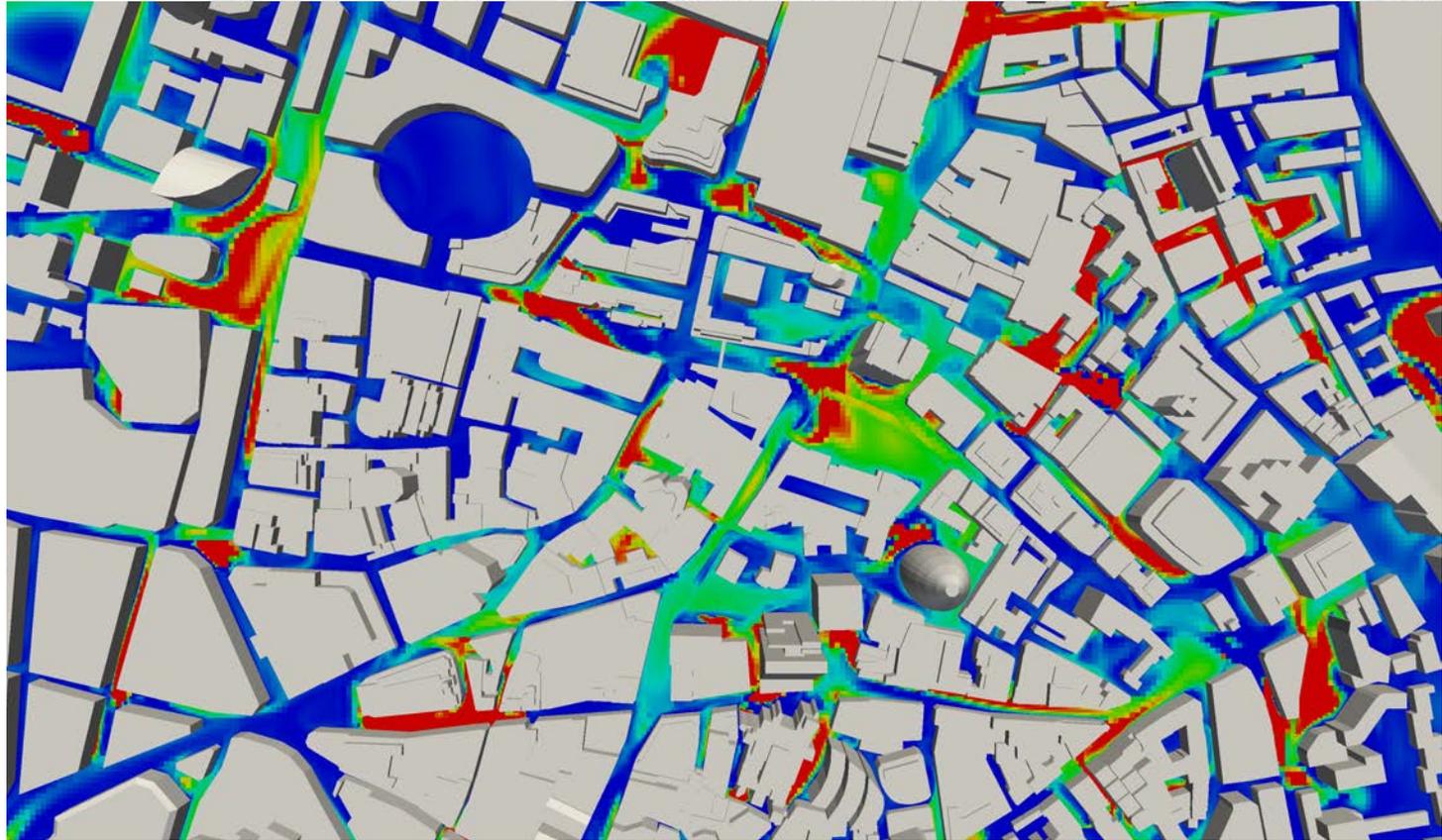


# Concentration (winds from 180°)

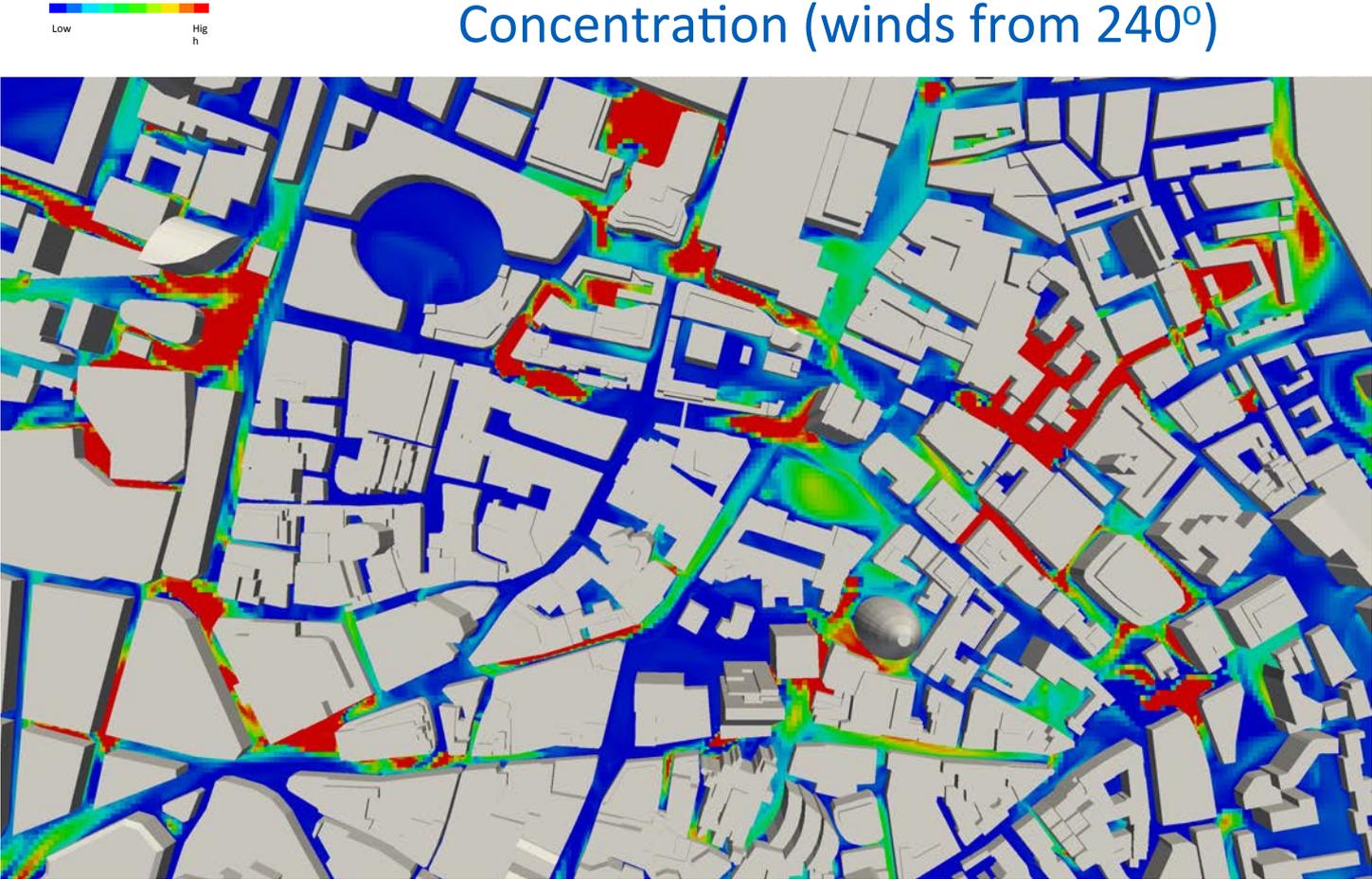




# Concentration (winds from 220°)

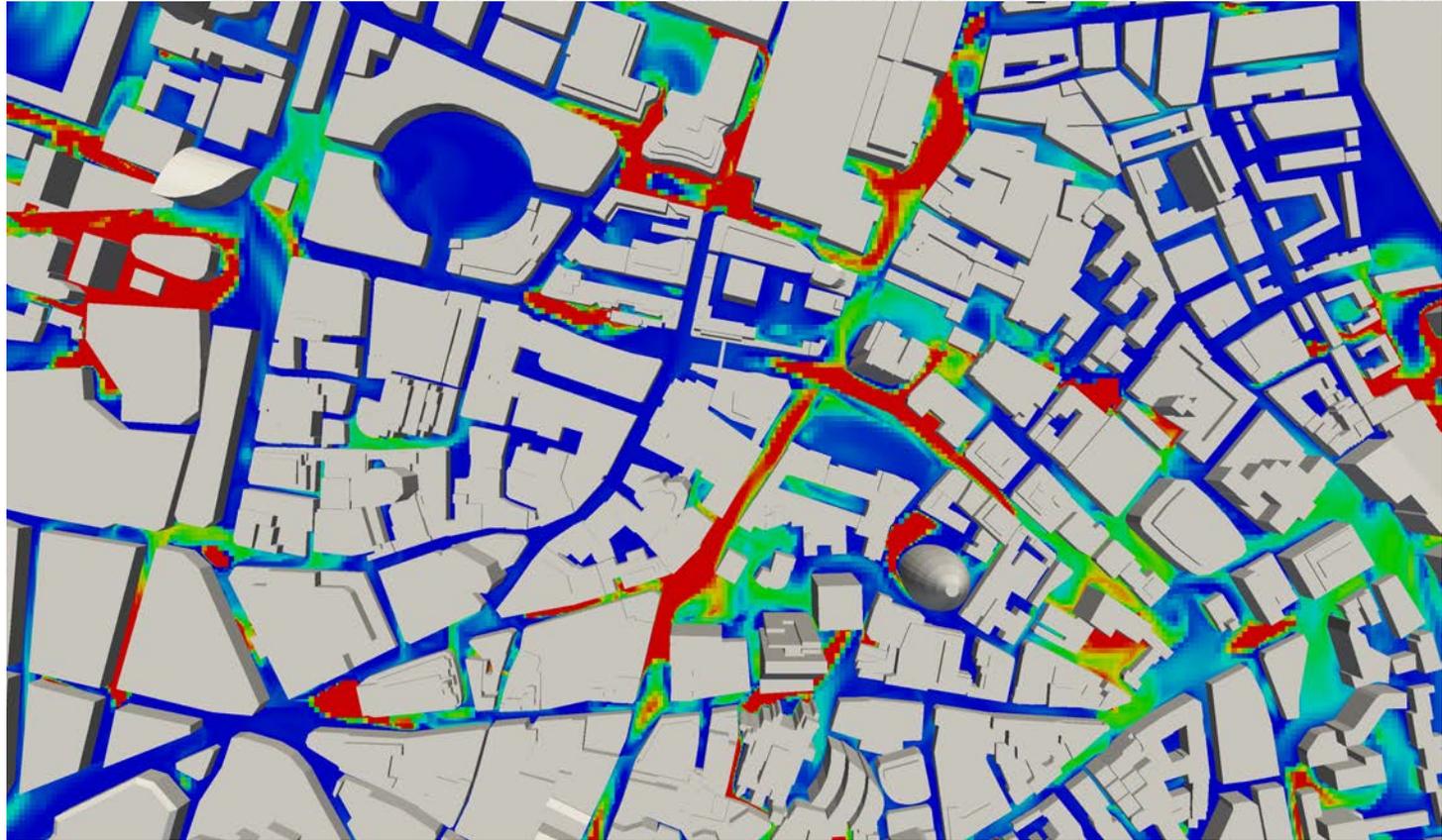


# Concentration (winds from 240°)



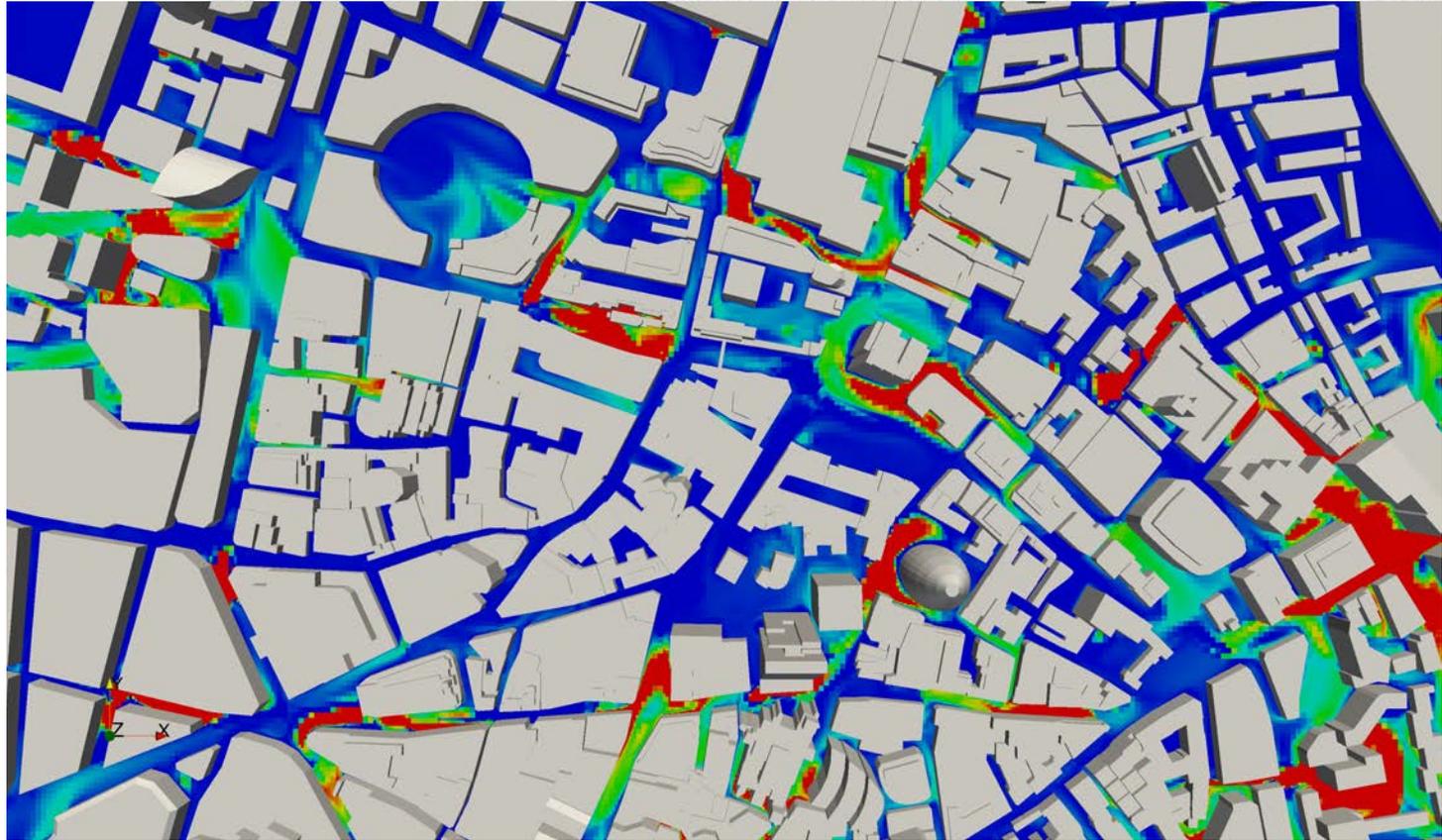


# Concentration (winds from 260°)

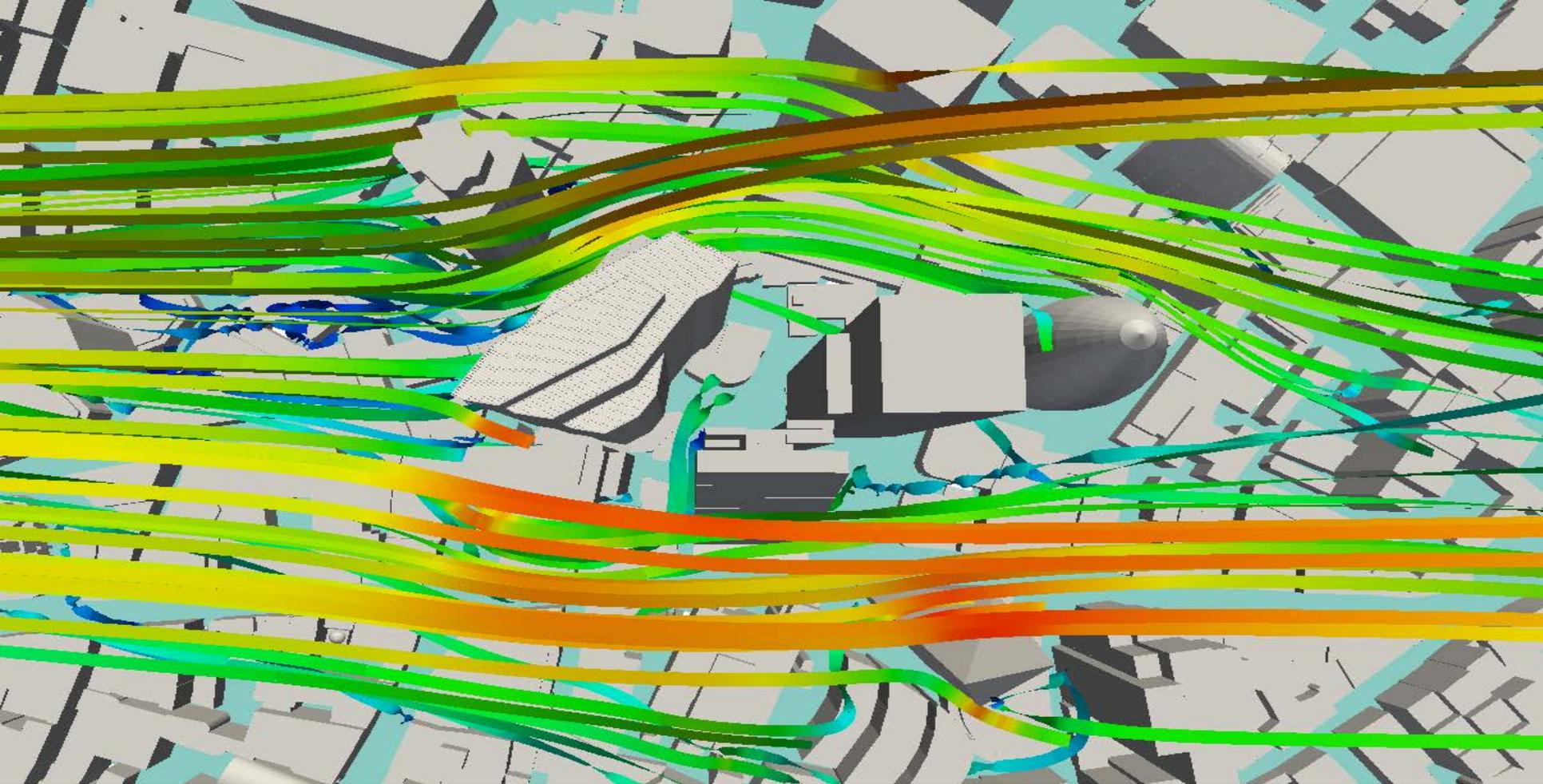




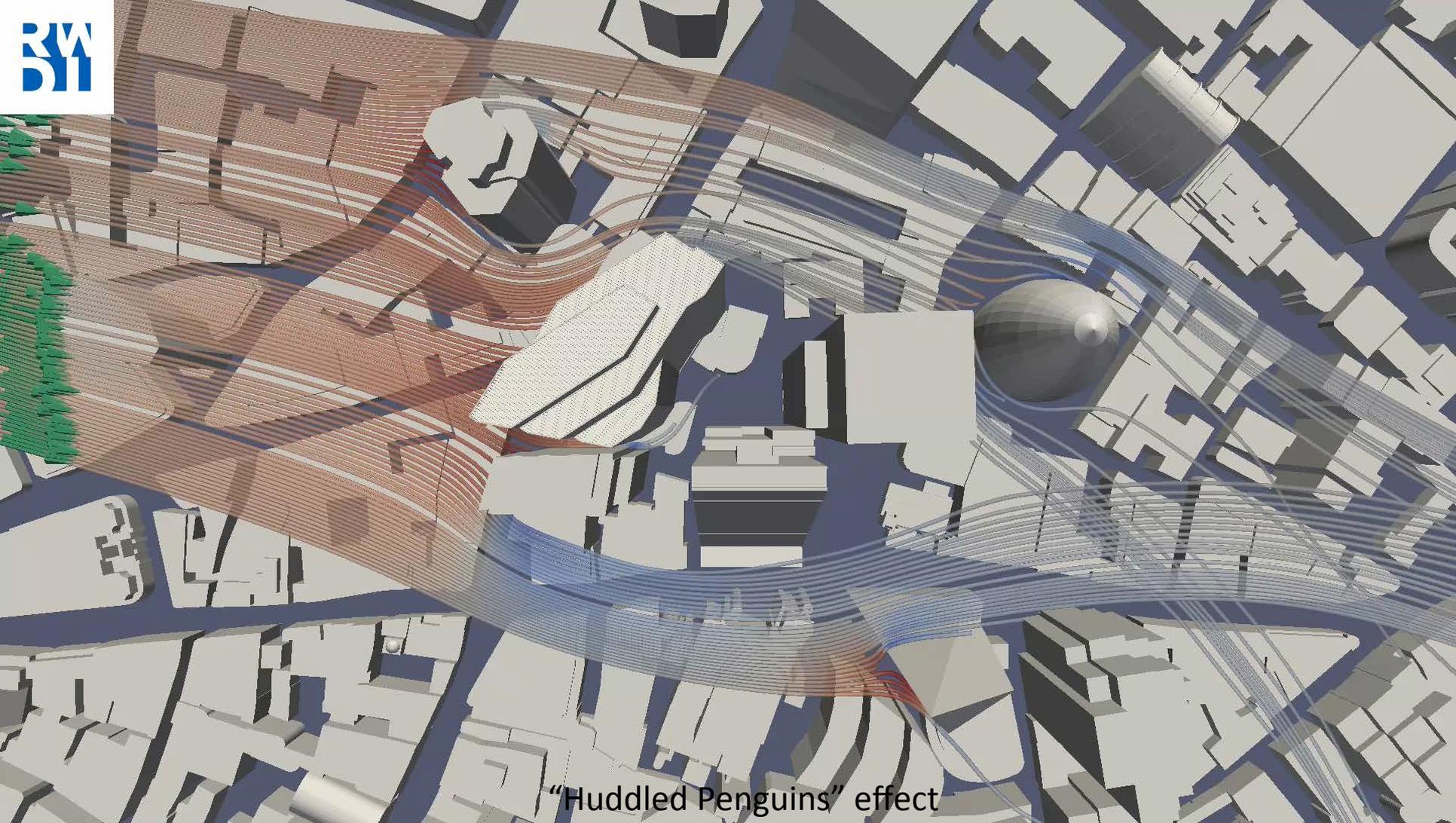
# Concentration (winds from 280°)



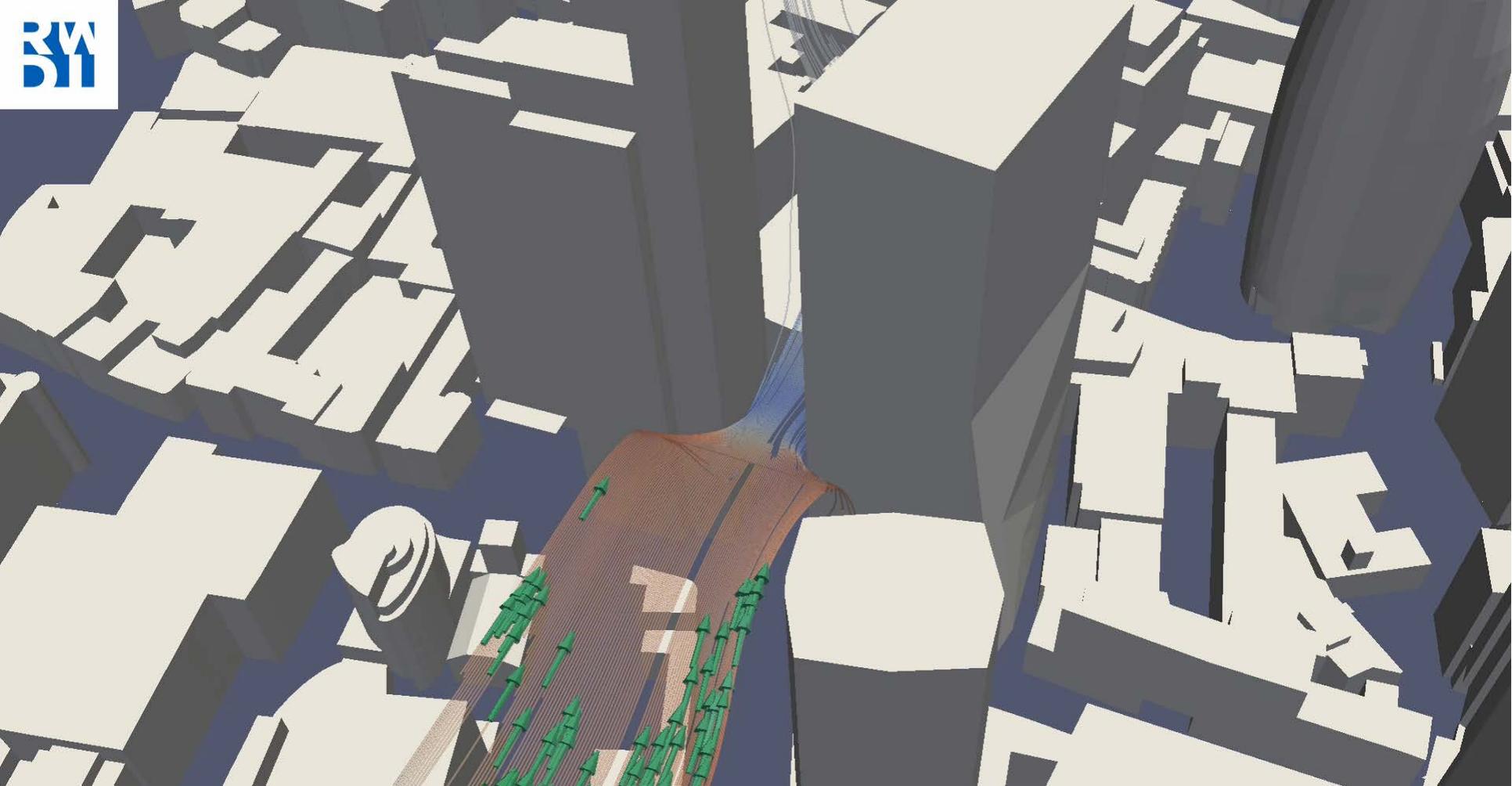
# Observations



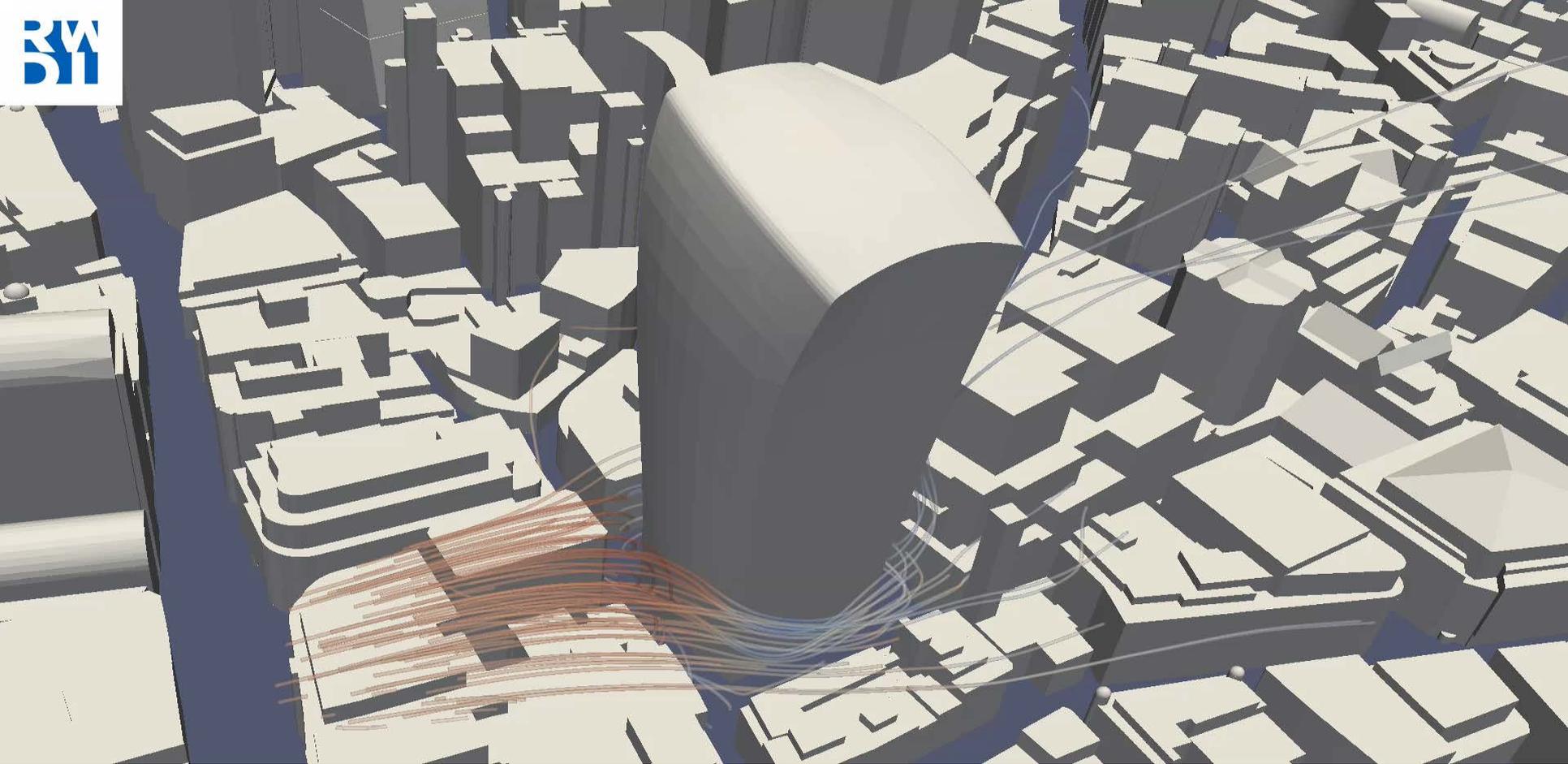
“Huddled Penguins” effect



“Huddled Penguins” effect



London Wall / Bishopsgate

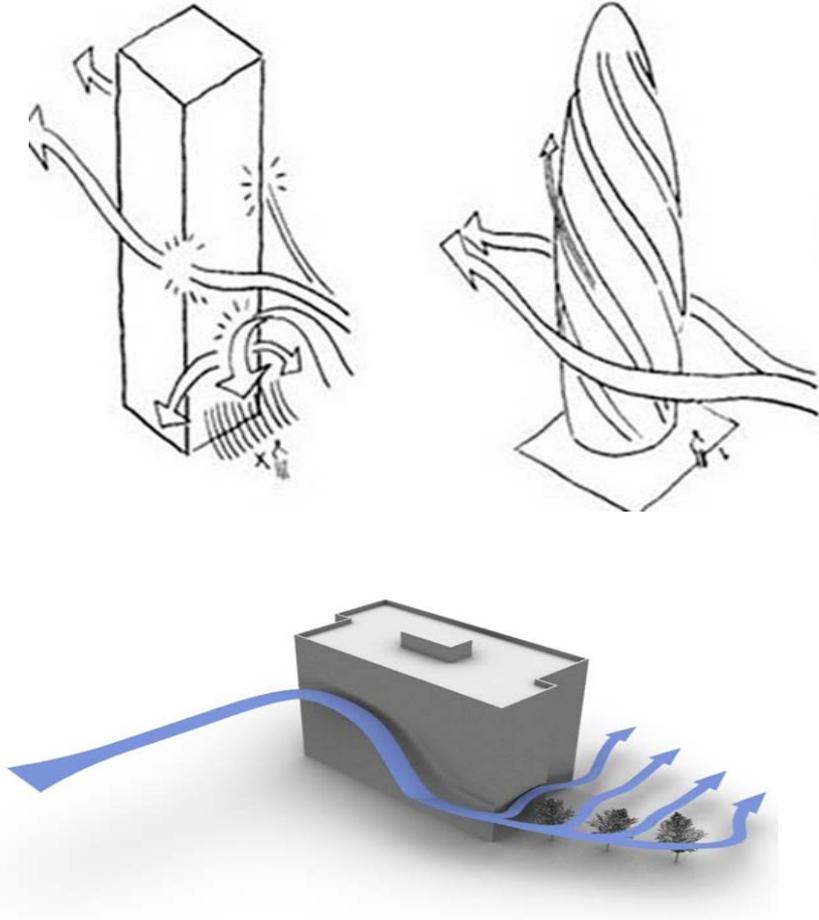


20 Fenchurch Street

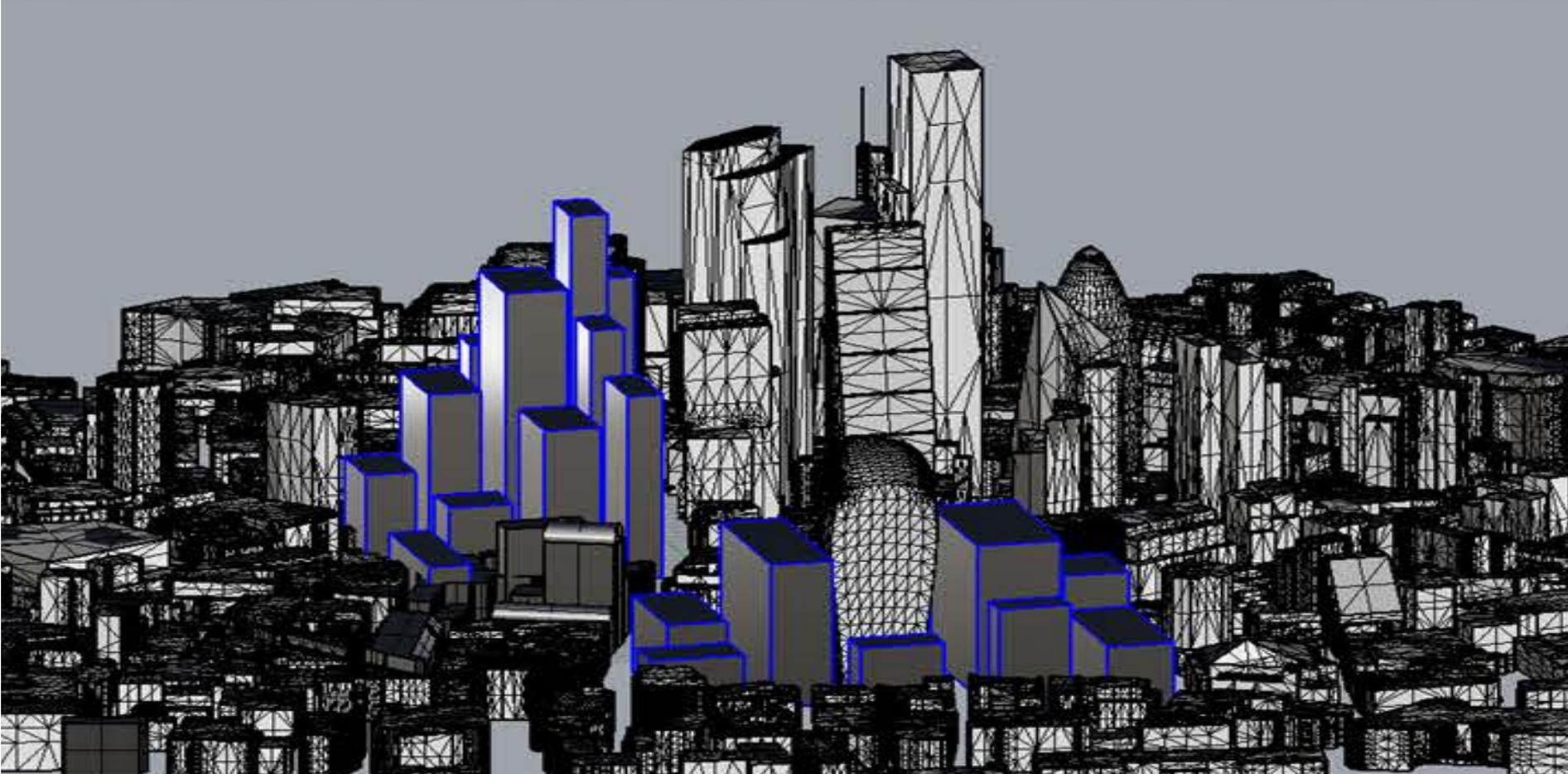




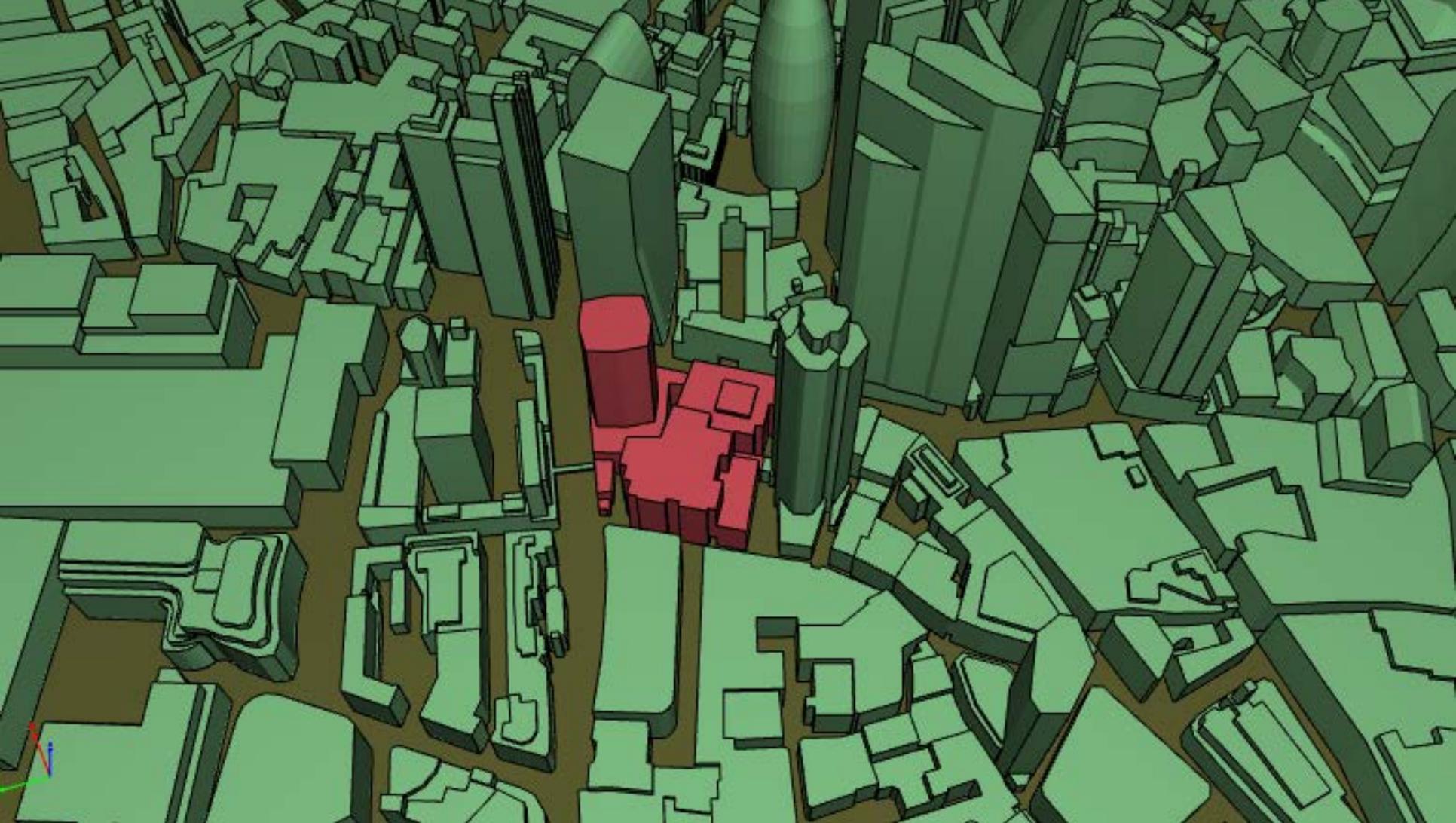
# Addressing the Challenge

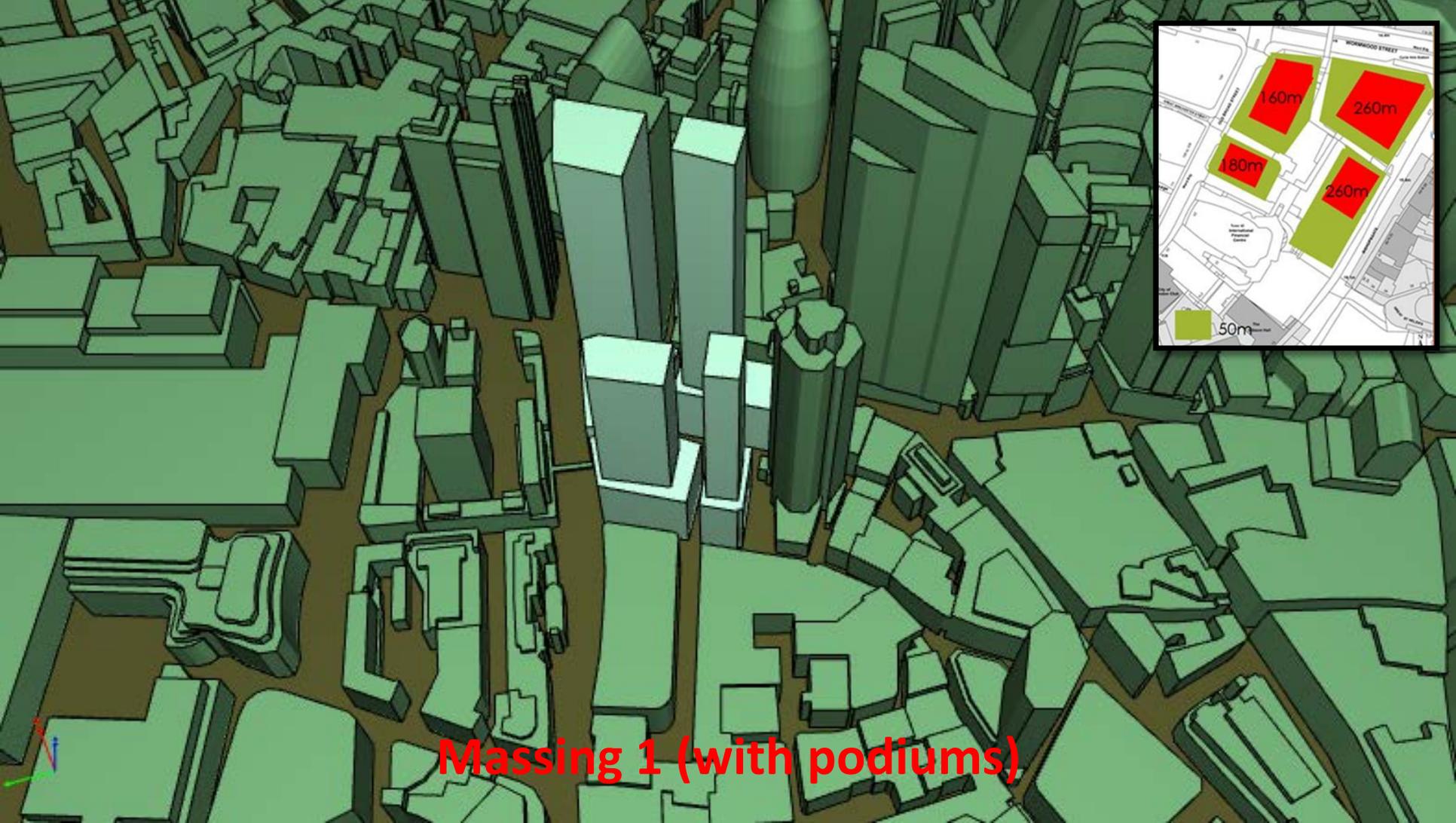


## 1) Creating Robust Guidelines for Environmental Effects



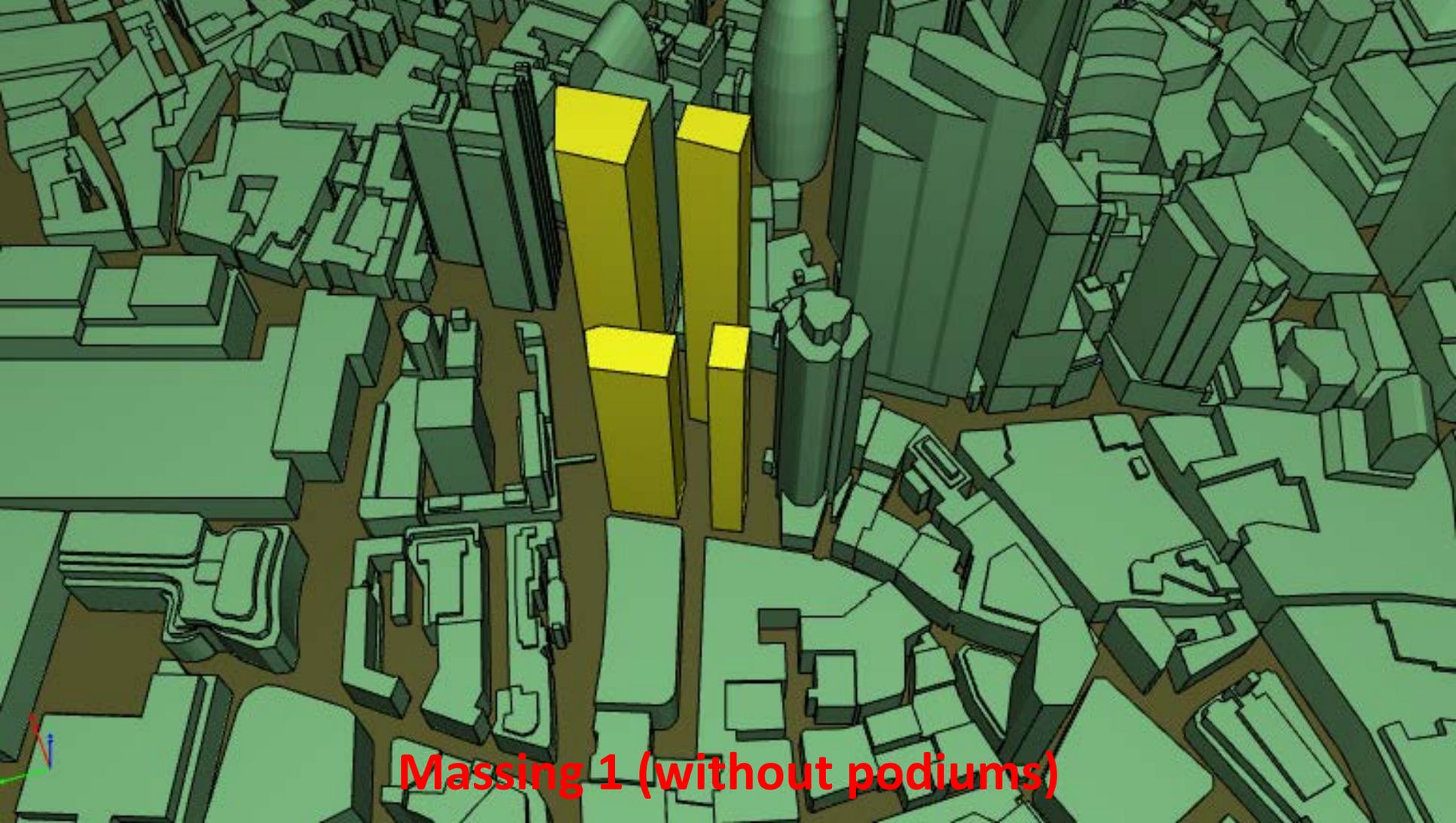
2) Pro-Active Master-planning Tools





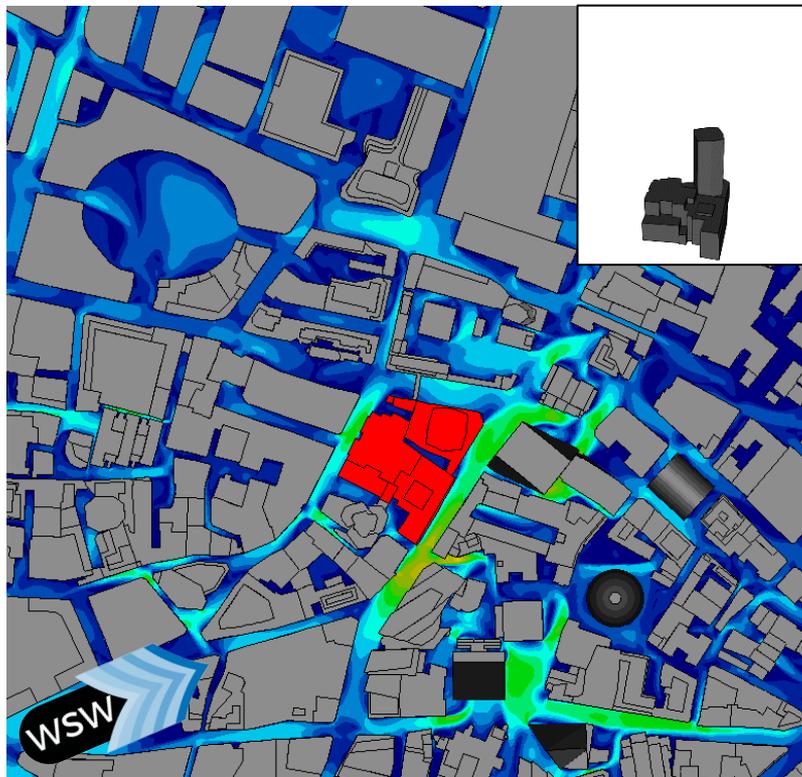
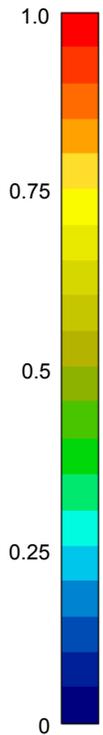
**Massing 1 (with podiums)**



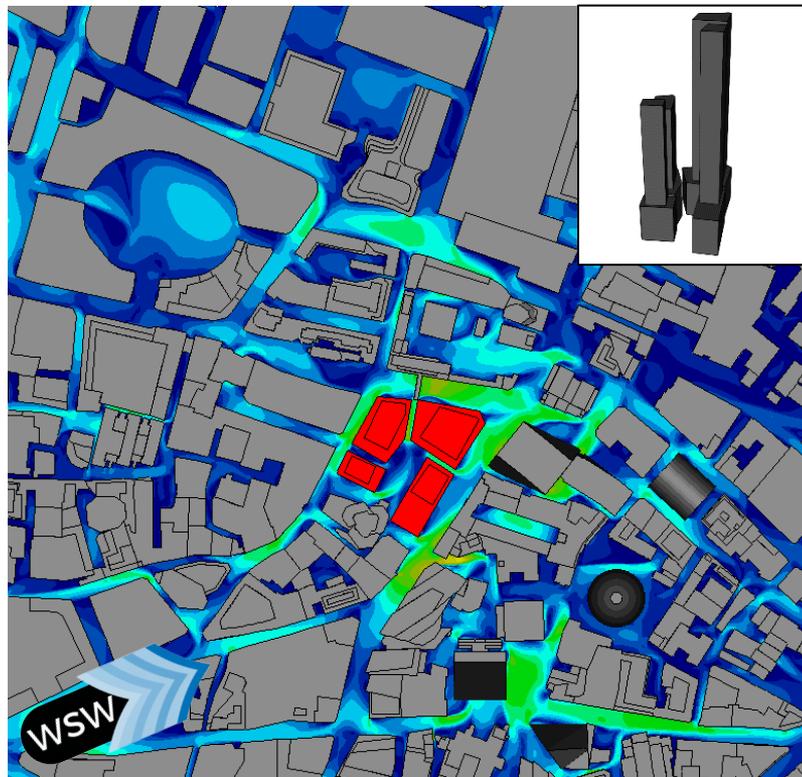


**Massing 1 (without podiums)**

Wind Speed Ratio



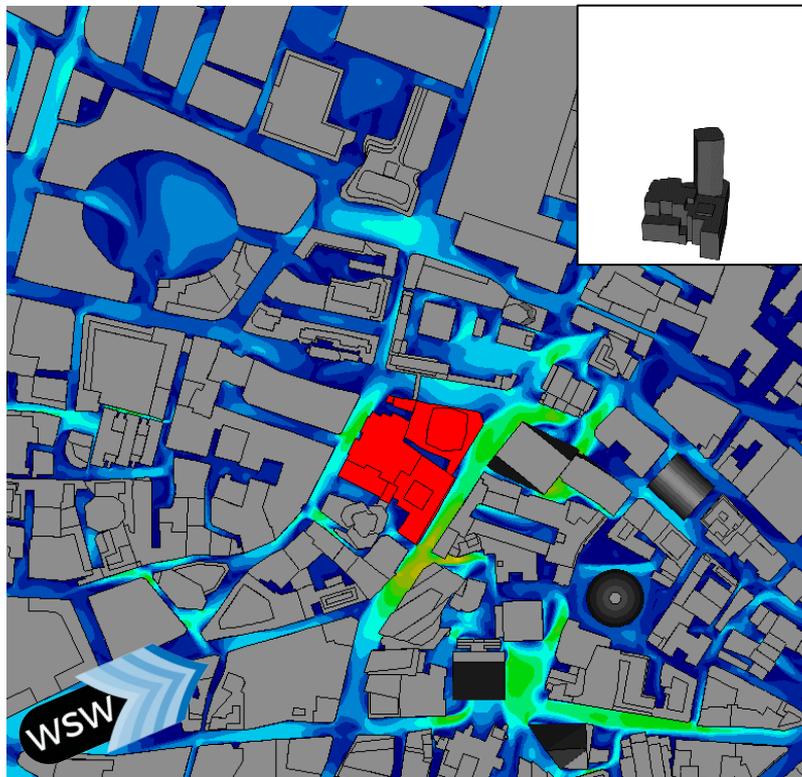
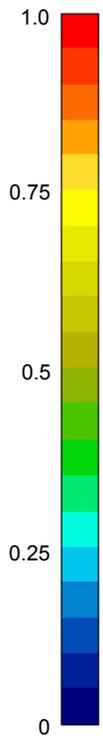
Existing



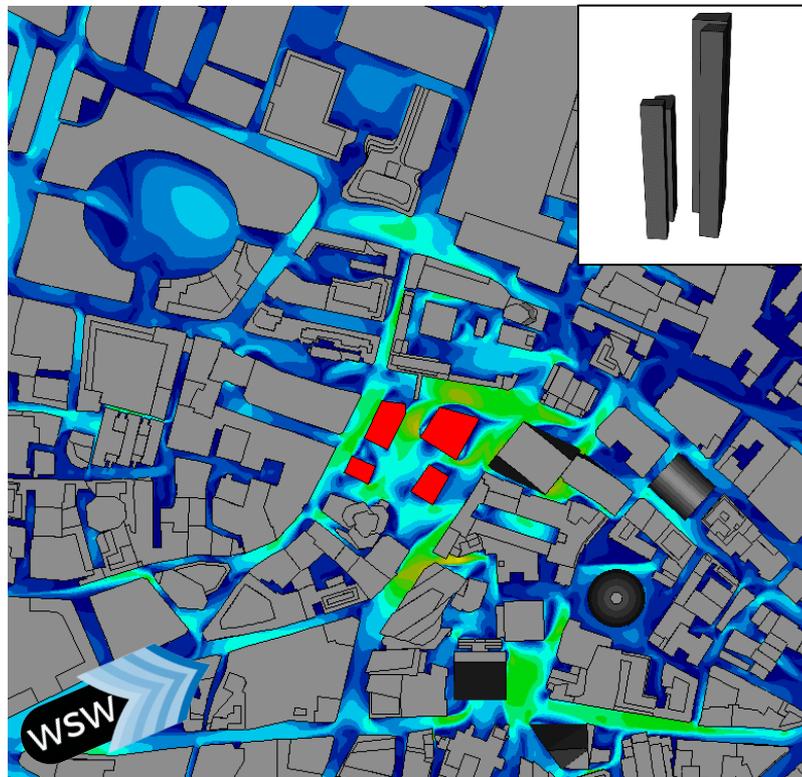
Massing 1 - With Podium



Wind Speed Ratio

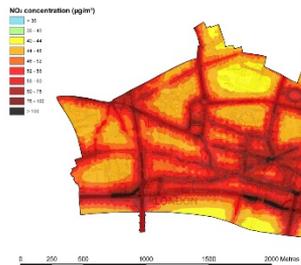


Existing



Massing 1 - Without Podium





**AIR Quality**



**Wind Comfort**

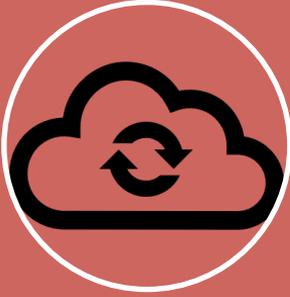


**Sunlight**



**Thermal Comfort**

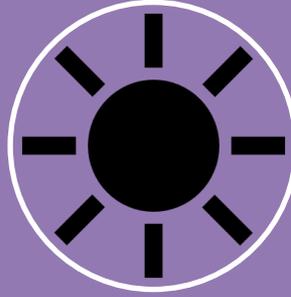
Environmental Maps  
Publicly Accessible



AQ



Wind



Sunlight



Thermal

**Balanced Scorecard**



City of London Pedestrian modelling

