

## Assessing Exhaust Re-Entrainment

Fresh-air supply is the lifeline of a building, affecting indoor air quality, health and comfort of building occupants. The fresh air supply system will exist for the lifetime of the building, yet it is often overlooked as a critical design aspect. Although the design of mechanical exhaust systems are intended to remove and discharge unwanted or hazardous emissions away from buildings, these air contaminants often find their way back into the building due to interactions with the wind. Re-entrainment of these unwanted contaminants compromises air quality.

### Novus helps ensure that fresh air is being supplied to your facility.

At Novus, we believe that fresh air is a critical design aspect for today's buildings. We have experience on the design of exhaust stacks and intake configurations for hundreds of facilities throughout the world.



#### SERVICES

- Site Assessment
- Schematic Design Review and Guidance
- Wind Climate and Re-entrainment Analysis
- Numerical Exhaust Dispersion Predictions
- CFD Modeling
- Wind Tunnel Tracer Gas Testing

#### SECTORS

- Laboratories
- Science & Technology
- Higher Education
- Institutions
- Health Care
- Hospitality
- Sports & Entertainment



## Exhaust Sources

There are many outdoor exhaust sources that can greatly degrade the quality of air entering a building's fresh air supply system. Common and problematic exhaust sources to be aware of include:

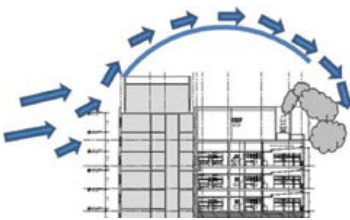
- Stand-by generators
- Laboratory exhaust fans
- Diesel exhaust sources at loading areas
- Commercial-type kitchen exhaust fans
- Cooling towers
- Roadway traffic in urban settings
- Helicopter exhaust fumes from helipads

## Sensitive Locations

In addition to Fresh Air Intakes, there are many other sensitive areas that can be affected by local exhaust sources. Clean air quality should also be considered at the following locations:

- Operable windows
- Outdoor amenity spaces
- Healing gardens
- Air-sensitive locations on adjacent buildings

Experienced specialists using state-of-the-art modeling capabilities to help identify, understand and resolve exhaust re-entrainment issues.



Exhaust emissions on building rooftops are often directed downward by local wind flow patterns.



### WHY NOVUS

- We have extensive experience with modeling wind flow patterns around buildings and assessing exhaust re-entrainment issues.
- You will have direct access to leading experts that understand and explain potential problems and provide site-specific recommendations.
- Our experience allows us to provide early advice and make practical design recommendations. This saves on re-design and reduces project costs.



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