

View from northeast side of Walnut Street



Approaching VLEST from Walnut Street Bridge





Main Walnut Street Entrance

View of South and East Façades



Courtyard



Walkway and Courtyard



South Entrance





Main Entrance Lobby

Level 1 Conference Room



Level 1 Lobby, Outside Conference Room



Conference Room – Open Configuration





Level 2

Level 3 Hallway

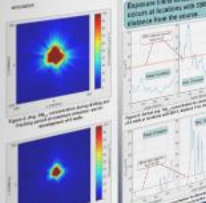
Air Emissions Exposure Risks from Hydraulic Fracturing in the Marcellus Shale Region of PA

Z. Baran, J.M. Gemand
Department of Energy and Mineral Engineering, The Pennsylvania State University

Why does it matter?
During the past decade, there has been an increase in hydraulic fracturing (HF) and associated gas production in the Marcellus Shale region of Pennsylvania. This has led to an increase in air emissions from hydraulic fracturing operations, resulting in increased exposure to air pollutants. This exposure is a concern because of the potential for adverse health effects, especially for vulnerable populations (VULNERABLE POPULATIONS) such as children, the elderly, and those with pre-existing respiratory conditions.

Exposure concentrations are considerable level of concern
Average HF operations are expected to emit 100 to 1,000 lbs of VOCs per day. This is a significant amount of air pollution, especially in the Marcellus Shale region of Pennsylvania. The Marcellus Shale region is a densely populated area, and the proximity of HF operations to residential areas is a concern. This is because of the potential for air emissions to travel long distances and affect a large number of people.


Method
Air pollution models are used to estimate the exposure of vulnerable populations to air emissions from HF operations. The models take into account the location of HF operations, the type of operations, and the meteorological conditions. The models also take into account the location and characteristics of vulnerable populations. The results of the models show that exposure to air emissions from HF operations is a significant concern for vulnerable populations in the Marcellus Shale region of Pennsylvania.



Restroom Exposure and Impacts of the HF Industry in the Marcellus Shale Region of PA

Alison M. Grant, Sarah E. Pratt, and David J. W. Simons
The Pennsylvania State University

Restroom Exposure
The Marcellus Shale region of Pennsylvania is a densely populated area, and the proximity of HF operations to residential areas is a concern. This is because of the potential for air emissions to travel long distances and affect a large number of people. Restrooms are a common source of air emissions, and the proximity of HF operations to restrooms is a concern. This is because of the potential for air emissions to travel long distances and affect a large number of people.



Level 4



Levels 5 - 6



Remove Unnecessary Steps & Win More Links, Shares, and Conversions

- 1 Embed codes
- 2 Shorter, more accessible emails
- 3 Shorter Sign-Up Form
- 4 GTIP Content

For more info, see page 10 of the whitepaper or visit [whitepaper.grip.com](#)

Copy [code] into email
one click to deploy

Final Email

Win More Links, Shares, and Conversions

1. Embed codes

2. Shorter, more accessible emails

3. Shorter Sign-Up Form

4. GTIP Content

Final Email

Win More Links, Shares, and Conversions

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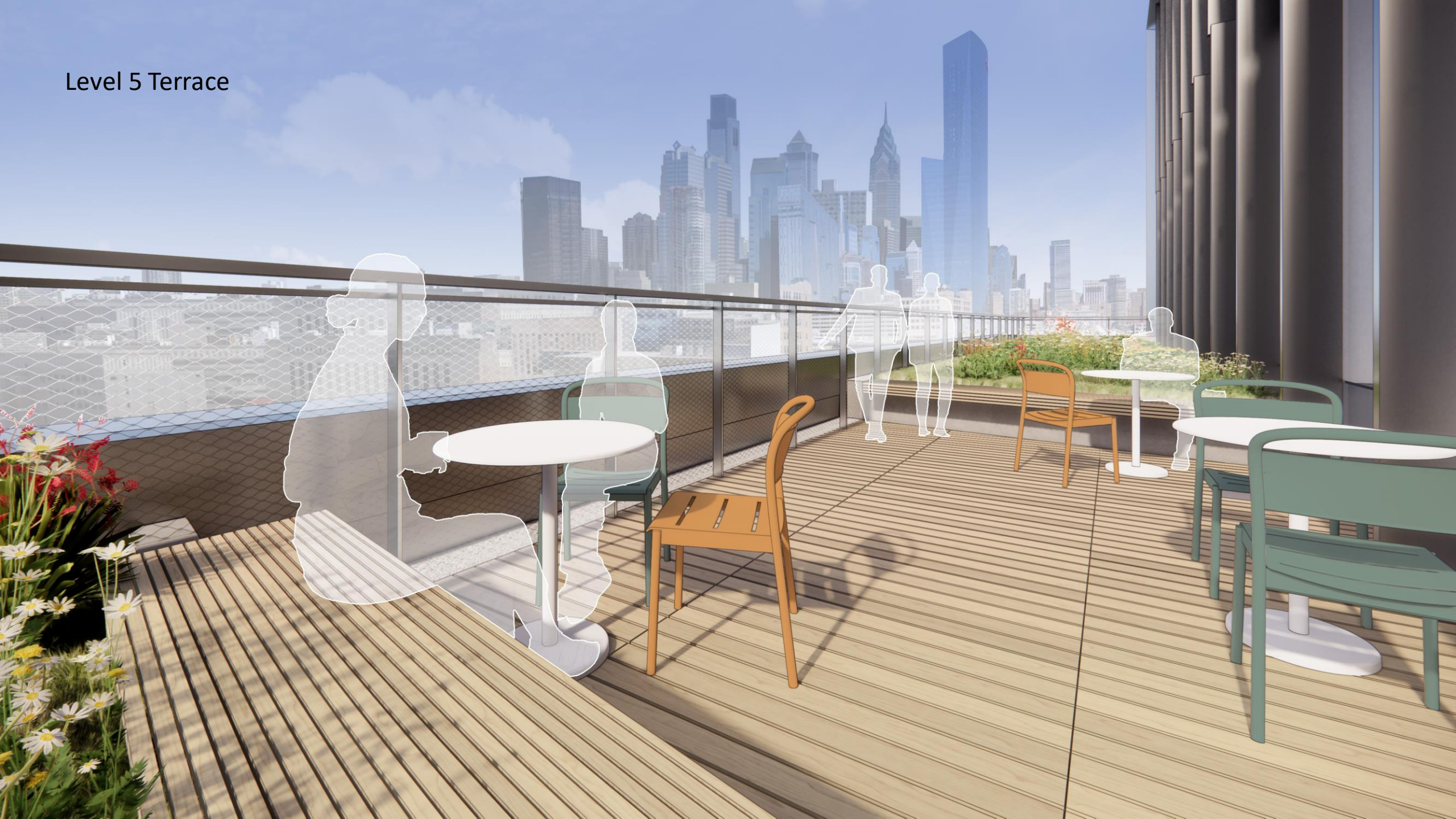
Final Email

Win More Links, Shares, and Conversions

Faculty Office



Level 5 Terrace



Level 6 Terrace

