

Single Family Homes

Energy Efficiency Requirements

- Space conditioning equipment must meet minimum efficiency requirements in the **California Code of Regulations (CCR) Title 24**
- Ventilation systems must be designed to provide the building with an appropriate amount of outside air required for the building size and illustrated in **CCR Title 24 (Parts 1 and 6)**

Air Pollution Protection for Sensitive Receptors

- **The California Environmental Quality Act (CEQA)** requires air pollution mitigation measures (i.e. enhanced ventilation) for sensitive populations in the Air Pollutant Exposure Zone
- Proposed amendment to **Article 38** would also require enhanced ventilation if located within the Air Pollutant Exposure Zone consistent with **CEQA<sup>1</sup>**

Enhanced Ventilation Technology

- Central forced air furnace system with **MERV 13** filtration and make-up air drawn from outside
- Exhaust only systems are not compliant with Article 38.
- Either supply only or balanced airflow system with MERV 13 filtration



Project Examples

- "Green Dream" building projects are energy efficient single family homes complete with supply only ventilation systems with MERV 13 filtration<sup>2</sup>



Low Rise Residential (Multi-Family, 3 Stories or Less<sup>3</sup>)

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Enhanced Ventilation Technology

- Central forced air handling system with **MERV 13** filtration and an outside air intake
- Individual units may instead have their own stand-alone forced air furnace system with **MERV 13** filtration

Project Examples

- A single point supply and exhaust system with MERV 13 filtration and balanced supply and exhaust flows – **1099 23<sup>rd</sup> Street**



High Rise Residential (Multi-Family, 4 or More Stories<sup>3</sup>)

Energy Efficiency Requirements

- Space conditioning equipment must meet minimum efficiency requirements in the **California Code of Regulations (CCR) Title 24**
- Natural or mechanical ventilation must be designed to provide the building with an appropriate amount of outside air required for the building size and illustrated in **CCR Title 24 (Parts 1 and 6)**



Air Pollution Protection for Sensitive Receptors

- **The California Environmental Quality Act (CEQA)** requires air pollution mitigation measures (i.e. enhanced ventilation) for sensitive populations in the Air Pollutant Exposure Zone
- Currently part of **Article 38** (10 or more units) if the site is on the screening map and modeling exceeds the PM2.5 action level.
- Proposed amendment to **Article 38** would require enhanced ventilation if located within the Air Pollutant Exposure Zone consistent with **CEQA<sup>1</sup>**

Enhanced Ventilation Technology

- Central forced air handling system with **MERV 13** filtration and an outside air intake
- DBI Permit applicants have also demonstrated the use of heat pump technology where the air intakes of each unit have **MERV 13** filtration

Project Examples

- Heat pumps per unit with MERV 13 filtration - **45 Lansing Street** (pictured)
- Central air handlers with MERV 13 - **344 Fulton Street**



<sup>1</sup> By achieving consistency with CEQA, compliance with Article 38 will help a project obtain a categorical exemption, thereby allowing developers to avoid costs and time associated with CEQA (assuming no other significant environmental effects).

<sup>2</sup> Collaboration project between the US Department of Energy's Building America Program and the Building Science Corporation in New Orleans, LA. [http://apps1.eere.energy.gov/buildings/publications/pdfs/building\\_america/new\\_orleans\\_green\\_dream\\_II.pdf](http://apps1.eere.energy.gov/buildings/publications/pdfs/building_america/new_orleans_green_dream_II.pdf)

<sup>3</sup> Low rise and high rise residential buildings do not include hotels/motels. For specific Occupancy Groups covered see CCR Title 24 Part 6.