

## COMMERCIAL TRAINING TOOLBOX TIPS

### Economizer Benefits to Commercial Buildings

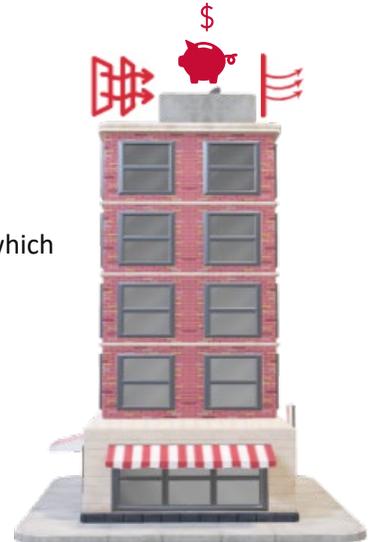
#### Back to Basics

#### Helpful Resources

1. Lennoxcommercial.com or LennoxPros.com.

#### Free Cooling

- Used to provide outdoor air to conditions the space during low ambient outdoor conditions which increases efficiency of HVAC system.
- Reduces demand for compressor operation which reduces energy use by the unit.



#### Dehumidification

- Used to address latent loads during low ambient outdoor conditions.
- Introduces drier outside air to dehumidify warm humid air in the space.



#### Ventilation

- Used to dilute contaminants in the indoor air.
- Amount of outdoor air (ventilation rate) is determined by the job application requirements in accordance local codes.
- Typical ventilation rates for an office building can be 15-30 cfm per person.



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## Economizer Benefits to Commercial Buildings

### Back to Basics

#### Makeup Air

- Used to provide the amount of outdoor air needed to replace the air that is being exhausted from the space.
- Used to prevent negative pressure in the building, prevent flue backdrafts, prevent infiltration from unwanted outside air.
- Requirements are determined by calculating the total CFM of all mechanical exhaust fans, gas appliance venting requirements, stack effect, etc.



#### Building pressurization

- Used to maintain a slightly positive (or negative) pressure for the building.
- **Negative** pressure occurs when more air is being exhausted from the building than is entering the building.
  - Can cause harmful flue gases from gravity vent natural gas appliances to backdraft into the interior space.
  - Doors may be hard to open or close.
  - Unfiltered (and untreated) OA can be drawn into the building.



- **Positive** pressure occurs when more air is being brought into the building than is being exhausted.
  - Can cause harmful flue gases from gravity vent natural gas appliances to not vent properly with a risk of spill over to the interior space.
  - May create an air whistle noise.
  - Doors may be hard to open or close.



- **Ideal** pressure requires the introduction of filtered outside air to meet ventilation and makeup air requirements along with a balanced proportion of relief air.
  - A slight positive pressure is typically part of design.
  - Allows for proper amount of fresh air to be brought into the space.
  - Provides continual flushing of indoor contaminants.



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