## Improved Duct Routing

### Author

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### Description

The more restrictions and bends in the ductwork that air must move through to reach a space, the greater the fan energy required to move the air. Using larger ducts or routing them to avoid restrictions and bends can decrease fan energy.

### Modeler Description

For each AirLoop in the model, reduce the fan pressure drop by the user-specified amount (default 10%). This default is a conservative estimate; further reductions may be achieved, but may not be practical based on size and cost constraints.

### Use Case Types

Retrofit, New Construction

### Arguments

No arguments

### Initial Condition Message

### Final Condition Message

The total number of airloops whose fan pressure rises were lowered.

### Not Applicable Messages

Not applicable if no airloops were found in the model.

### Warning Messages

### Information Messages

List each airloop and its initial and final pressure rise.

### Error Messages

### Code Outline

* For each AirLoop
  + Find the fan
  + Decrease the fan pressure rise by the user-specified fraction
  + Replace the existing heating and cooling setpoint schedules with these new schedules

### Tests

**This measure applies to:**

1. Large Office
2. Medium Office
3. Primary School
4. Secondary School
5. Large Hotel
6. Hospital
7. Small Office
8. Stand-Alone Retail
9. Strip Mall
10. Supermarket
11. Quick Service Restaurant
12. Full Service Restaurant
13. Small Hotel
14. Outpatient Healthcare
15. Warehouse
16. Midrise Apartment