

# Totally Devoted

## Dedicated Outdoor Air Systems Offer Improved Indoor Air Quality and Energy Savings

*An exclusive report for E SOURCE members*

*Kristin Kamm*

### Summary

Dedicated outdoor air systems (DOASs) clearly offer advantages for buildings where controlling indoor air quality is important—which includes most, if not all, buildings. DOASs are useful for controlling indoor humidity and delivering precise amounts of ventilation air to comply with building codes. Compared with conventional HVAC systems, they can use energy more efficiently and eliminate restrictions on the different types of HVAC components that designers can specify.

In addition, simulations and actual case study information have shown that they can be even more cost-effective than conventional HVAC systems. However, it's difficult to make generalizations about cost-effectiveness, because there isn't a significant amount of building case study data to base them on. This lack of knowledge in the HVAC industry about the true costs and benefits of DOASs means that few people have learned how to apply the technology; it's also the main reason that DOASs aren't widely used in commercial buildings. Energy service providers can help their customers by providing training to local designers, engineers, and contractors that will enable them to design a DOAS and compare it with a conventional system as part of their standard process. This would make it easier for designers and building owners to choose the most suitable systems for their buildings.

### Contents

<u>DOASs: Split Systems</u>	<u>2</u>	<u>How Are DOASs Performing in the Real World?</u>	<u>7</u>
<u>What Benefits Do DOASs Offer?</u>	<u>2</u>	<u>Conclusions</u>	<u>11</u>
<u>How Do the Economics Stack Up?</u>	<u>5</u>	<u>Notes</u>	<u>13</u>