

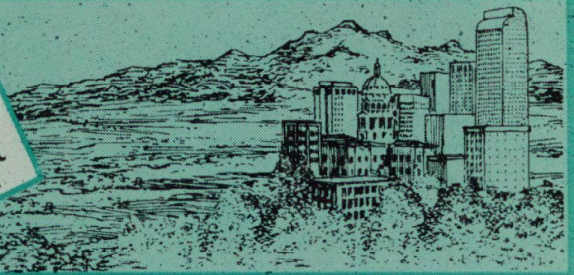
FACT SHEET

EPA908-F-93-003
December 1993



WORKING TOGETHER TO PROTECT DENVER METRO AIR

Preventing Pollution at Denver's New Airport



When the new Denver International Airport (DIA) opens in 1994, it will feature design, construction, and operational elements intended specifically to reduce the amount of pollution generated there. These "pollution prevention" elements include numerous measures for reducing air pollution that make sense both economically and environmentally.

Inside DIA

Inside the airport buildings, pollution prevention opportunities existed. Source reduction measures such as banning smoking and reducing hazardous cleaning agents are the most effective way to reduce indoor air pollution. Both of these will be implemented at DIA. Source reduction alone, however, cannot eliminate all

indoor air pollutants. To remove remaining pollutants, the City and County of Denver will install an air filtering system effective in treating the most predominant indoor air contaminants

associated with airport operations.

linked. If, for example, energy-efficient lighting were installed wherever profitable in the U.S., the Environmental Protection Agency (EPA) estimates reductions in emissions of carbon dioxide by 232 million tons, sulfur dioxide by 1.7 million tons, and nitrogen oxide by 900,000 tons.

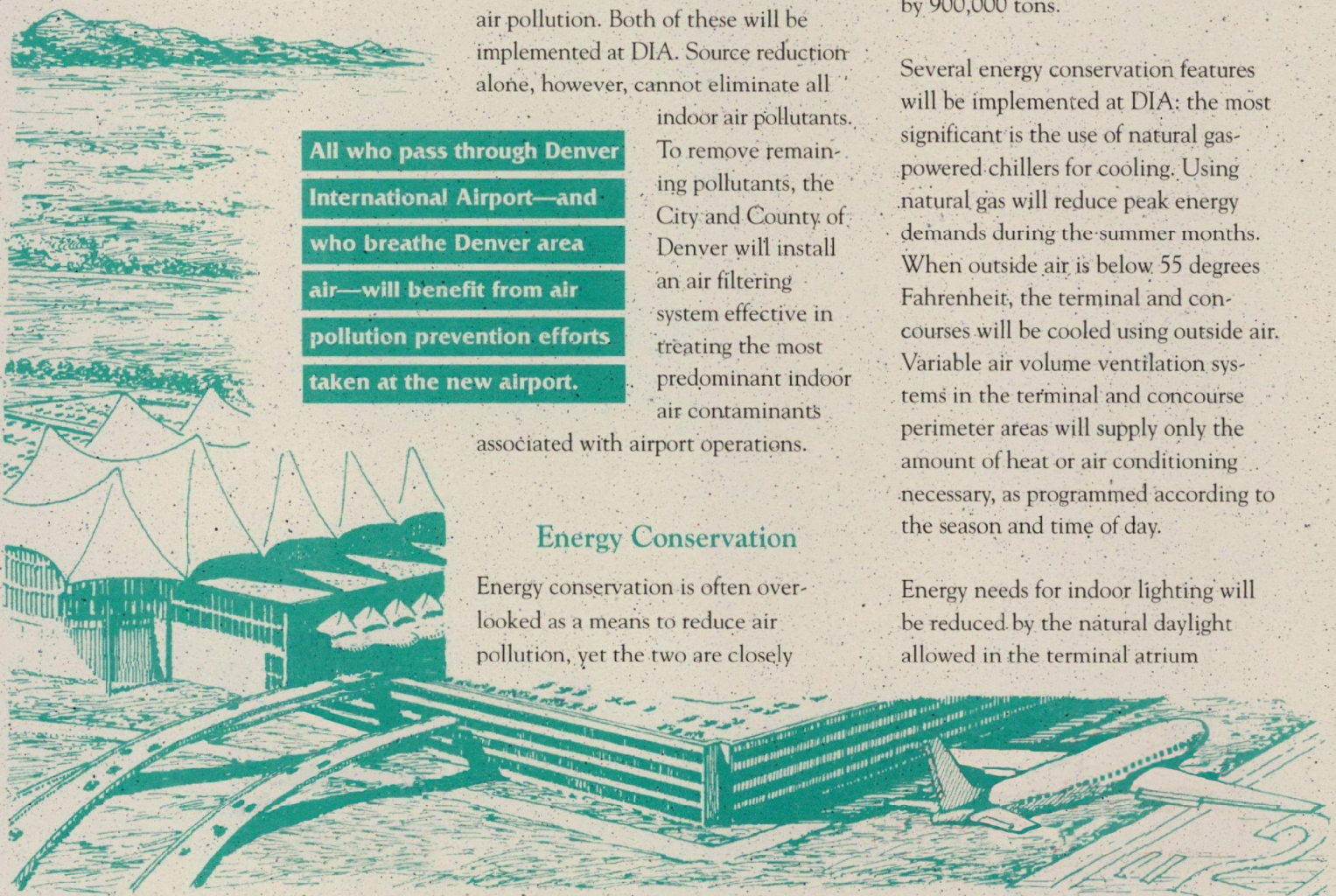
Several energy conservation features will be implemented at DIA: the most significant is the use of natural gas-powered chillers for cooling. Using natural gas will reduce peak energy demands during the summer months. When outside air is below 55 degrees Fahrenheit, the terminal and concourses will be cooled using outside air. Variable air volume ventilation systems in the terminal and concourse perimeter areas will supply only the amount of heat or air conditioning necessary, as programmed according to the season and time of day.

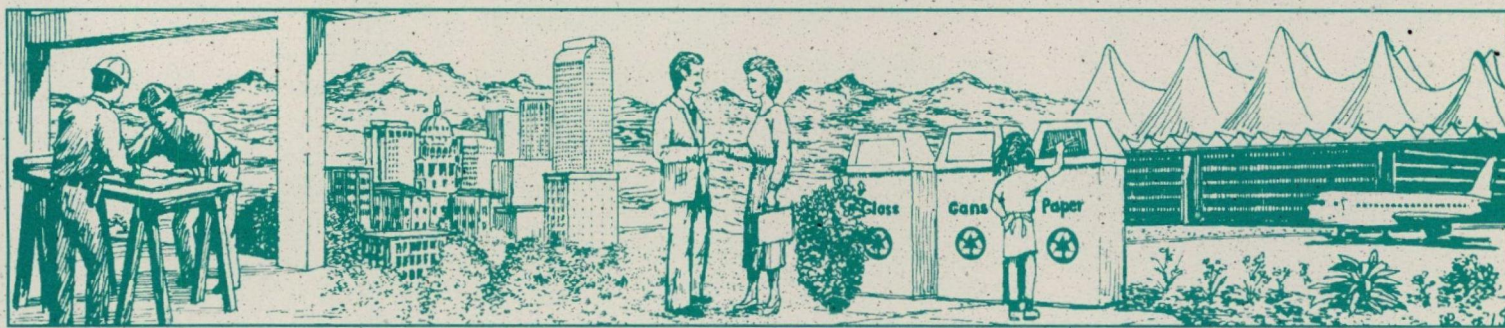
Energy needs for indoor lighting will be reduced by the natural daylight allowed in the terminal atrium

Energy Conservation

Energy conservation is often overlooked as a means to reduce air pollution, yet the two are closely

All who pass through Denver International Airport—and who breathe Denver area air—will benefit from air pollution prevention efforts taken at the new airport.





In addition to decreasing air pollution, careful planning and collaboration can reduce landfill discharge and help conserve natural resources.

through the translucence of the teflon-coated fiberglass roof. Fluorescent lights using compact bulbs will be used for background lighting only when natural lighting is insufficient.

As a result of the many energy conservation features incorporated at DIA, the local power company (Public Service Company) will not need to significantly increase its power supply capabilities or air emissions in order to serve the new airport. In response, Public Service Company has proposed a \$1.5 million rebate to the City and County of Denver, to be used for energy conservation education.

Outside at DIA

Emissions from vehicles traveling to and from the new airport present DIA's greatest potential environmental impact. Estimates indicate that DIA employees and passengers will travel one million miles more per day than is the case with Stapleton International Airport. In order to reduce this impact, EPA Region 8 provided assistance to the City and County of Denver to analyze possible travel reduction measures. The most promising solution appears to be a rail line from downtown to the new airport. Denver has undertaken a study to design the rail system, determine construction and operation costs, and compare the benefits of this alternative with other measures to reduce travel and/or traffic congestion associated with DIA.

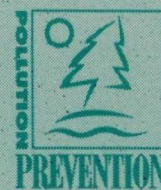
Parking and terminal access areas also pose problems. Here, carbon monoxide emissions often create "hotspots"—areas of highly-concentrated pollution extremely harmful to human health. The design of these areas at DIA includes several innovative features to control hotspots. (1) The parking structure will be separated into three distinct sections to allow for adequate ventilation. (2) Road access to the passenger drop-off and pick-up areas will be constructed in a stepped manner, rather than in the usual stacked manner which traps vehicle exhaust fumes. (3) Passengers will arrive and depart on different levels, reducing traffic congestion. (4) Parking for Continental and United, DIA's biggest carriers, will be separated from the main parking area.

DIA operations vehicles will play their part as well. By using natural gas rather than gasoline, these vehicles will emit less carbon monoxide and nitrogen oxide. The fueling operations for these vehicles, as well as for airplanes, pose the largest potential source of volatile organic compound (VOC) emissions at DIA. VOCs react with sunlight to form ozone, a major component in the smog that plagues the Denver metropolitan area. To reduce such emissions, internal floating roofs will be incorporated into above-ground fuel storage tanks, and a vapor recovery system will capture VOC emissions at fueling stations. These measures will reduce VOC emissions by more than 52 tons per year—a 95 percent reduction.

DIA's central plant, which will heat and cool the terminal and concourse areas, will use low nitrogen oxide burners and flue recirculation. These measures will realize an 84 percent reduction in nitrogen oxide emissions over conventional heating and cooling systems.

An Experience to be Shared

The successful incorporation of pollution prevention features at DIA taught the City and County of Denver and EPA to apply new ways of thinking and to use new tools for solving difficult problems. Thanks to "pollution prevention by design," Denver International Airport will serve as a model of sustainable development for future projects, large and small.



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