



TED TAYLOR

Green Heart

Design is critical for urban environment.

By Kera Abraham

Downtown design doesn't just affect the people who live, shop and do business there. It also impacts the region's air, water and soil. Careful urban planning can enhance downtown Eugene's environmental, as well as economic, sustainability.

First, city center development can reduce sprawl, which occurs when low-density houses and commercial areas sprout up on the fringes of cities. Generally, sprawl is characterized by large distances separating homes from workplaces and neighborhood services, forcing people who live on the outskirts of cities to drive everywhere rather than walk or use public transit.

The antidote to sprawl is compact urban development. When people live near vital facilities — grocery stores, drug stores, restaurants and bars; offices and movie theaters and clothing shops and transit stations — they can walk, ride bikes or take buses where they need to go. This cuts back on automobile pollution and traffic while pumping up the local economy. Compact urban design also reduces public infrastructure costs; utility and sewer lines already exist downtown, while suburban development means building

more lines for fewer houses.

But compact development carries a higher price tag than development on the fringes, because real estate values are higher in urban centers and re-building old structures tends to cost more than new construction. Before developers propose downtown housing projects, they need to feel confident that the investment will pay off.

Cities committed to compact urban growth can encourage downtown housing by partnering with developers to create mixed-use urban areas through tax credits, subsidies and infrastructure assistance. "If the City Council really wants to see housing and revitalized businesses, there needs to be some type of public investment in these activities," says Rich Margerum, an assistant professor in the UO's Planning, Public Policy and Management (PPPM) department. Cities such as Portland, Berkeley, Calif., and Madison, Wisc., have successfully paired

public with private investments to encourage housing units in city centers.

The city of Eugene has too, in at least one instance. City planners partnered with developer Hugh Prichard to build Broadway Place, a downtown housing complex that was completed in 2000. Prichard funded the construction of 170 apartments, and the city paid for the 750-unit parking garage underneath, which serves both Broadway Place residents and downtown Eugene visitors.

Prichard sees first-hand the results of downtown housing on automobile use. He says that in the suburbs, city code requires 1.5 parking spaces per living unit, and usage is about that. Closer to downtown, at the Lincoln School apartment complex, residents use less than 1.25 parking spaces per unit. And at Broadway Place, located just a few blocks from the downtown transit station, residents use less than 1 parking space per unit. "Our experience is, people downtown are using less cars," Prichard says.

Professor Jean Stockard, the head of the UO's PPPM department, mentions another important factor to encourage walking: perceived safety. She says that people are more willing to walk when there are ample sidewalks, trees and a bustling atmosphere downtown. "Areas tend to be perceived as safer when there are more people," Stockard says. "It's not happened with Eugene."

Bob Doppelt, director of a sustainability research program at the UO's Institute for a Sustainable Environment and academic coordinator for the university's Sustainability Leadership Academy, is providing technical assistance for Mayor Piercy's sustainable development phase for downtown. He says that downtown design not only affects transportation patterns, but also energy needs.

this cause people to use more air conditioning; increased temperatures also exacerbate smog. According to researchers at the Lawrence Berkeley Laboratory, L.A. smog concentrations increase by 3 percent for every degree above 70 degrees Fahrenheit.

To keep urban temperatures down, Doppelt suggests more natural landscapes, which hold less heat than paved surfaces. Heating and cooling costs can be kept to minimum by using well-insulated buildings with natural ventilation systems.

Downtown design also affects water quality, Doppelt says. Paved surfaces cause stormwater to collect pollutants and run directly into local waterways. One way to counter-act that effect is by designing bio-swales, natural areas that act like small wetlands. Storm runoff flows into the bio-swales, where it drains into the soil or evaporates instead of discharging into the river. Many European cities incorporate bio-swales, but it may not be possible in downtown Eugene because the area is already highly developed, Doppelt says. Green roofs, however, are an option. By growing plants directly on rooftops, developers can reduce runoff while enhancing cooling and heating.

If sustainability is a goal of downtown design, Doppelt says, then designers should plan for current and future environmental, economic and social constraints and opportunities. "Sustainability is, at its core, the ability to adapt to change over time," he says. "You don't want to box yourself into a certain path that will reduce the choices you will have in the future."

Doppelt says that the environment, the economy and social welfare are increasingly interlinked. For example, climate change will reduce water availability in the Northwest,

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"Climate change is going to increasingly be a driver of our economy, and one thing it may do is to create an increased demand for summer cooling, which will put more stress on the energy systems and lead to more costs down the road," he says.

Research shows that urban areas are hotter than their rural surroundings, a phenomenon known as the "urban heat island effect." Concrete buildings, rooftops and asphalt roads absorb and store solar heat on hot days, then re-release it after sunset. Not only does

and households, businesses and government will be under increasing pressure to reduce CO2 emissions from fossil fuel. Eugene's urban planners can benefit from an awareness of those connections.

"How can we reduce our use and dependency on materials that rely on carbon or produce greenhouse gases? It really requires a system approach to think those issues through," Doppelt says. "Eugene has done a good job over the years, and we need to stay focused on a systems approach." ■

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