



TAPPING INTO RENEWABLES

SubTropolis, located at 8300 N.E. Underground Drive, is the world's largest underground business complex. Its energy bills are 50 to 70 percent lower than comparable above-ground space.

SubTropolis: Down under runs green in Kansas City

By Mary Lynn Coulson

Kansas City's SubTropolis, the world's largest underground business complex, was green decades ago, without even trying.

Long-in-place green components – most notably a constant year-round temperature that reduces energy bills by 50 to 70 percent – are keeping and attracting businesses to the complex, which houses 5 million square feet of leasable space and 18 million square feet for expansion.

The massive facility, in what was a limestone mine, has a street-level entrance that gives little hint of what's inside. The complex is 150 feet below the surface, and if visitors could zoom straight up they would find themselves in the Worlds of Fun and Oceans of Fun amusement parks.

SubTropolis is home to more than 50 businesses. It forms part of Hunt Midwest Enterprises, a real estate development and mining company owned by the Lamar Hunt family, which is headquartered in SubTropolis.

"It's actually a great work environment," said Connie Kamps, Hunt Midwest's director of real estate operations, as she led a

tour of the facility. "Down here, it's 65 to 78 degrees year-round. Our employees are very happy to work here."

While a constant temperature is appealing in winter and summer extremes, there are greater, greener benefits. Due to the constant climate, little heating or cooling is necessary (other than slight humidity control in summer).

This means more energy efficiency, less carbon used, and a smaller impact on the environment. It is estimated that 75 percent less electricity is used in the subsurface space than aboveground warehouses and offices.

Energy efficiency isn't the only thing that makes SubTropolis greener.

"We don't contribute to light pollution or storm water run-off, both problems in Kansas City today," said Dick Ringer, assistant general manager at Hunt Midwest Real Estate Development. "We actually make three uses of this space: The surface can be developed, the mined limestone is used in construction, and the resulting space is used as well. It's the ultimate recycling project."

This development began in the 1960s, as Hunt Midwest determined it could make use of the empty mines and build an underground city. Since then, businesses have rented space due to the lower building costs, lower energy bills, dryer air

underground (for storage of original movie reels, even postage stamps), and even guaranteed protection from aboveground natural disasters.

“You also get the benefit of not disturbing habitat aboveground,” Ringer said.

And with thousands of square feet yet undeveloped, the possibilities are extensive.

Aboveground, even the greenest new building project uses many resources, and using the most sustainable technologies (renewables, for example) has up-front costs. But renting space underground saves all that material from being used, and the space is already extremely energy-efficient.

“Our employees show great pride because of the environmental benefits,” Kamps said. “For some businesses, the environmental aspect is the reason they rent with us. For others, it’s an added benefit.”

But no matter the reason for renting subsurface space, all the businesses underground consume much less than their aboveground counterparts. And while working in an underground cave may seem less than desirable, the space is open and light.

The unique geology of the area makes Kansas City an exceptional location for these underground developments. The 270-million-year-old limestone deposit was removed by the room-and-pillar method, which leaves large pillars, standing 40 feet apart.

At first the limestone wasn’t extracted in a set pattern.

“But once they realized they could use this space, they extracted in straight lines,” said Ringer.

The change in method is apparent further into the complex, where the “streets” become straight and form a grid. “Aboveground, the grass gets mowed,” Kamps said. “Down here, we clean streets and change light bulbs. An office by a pillar is like a corner office to us.”

SubTropolis: By the numbers

Hunt Midwest provided some interesting facts about SubTropolis (located east of Interstate 435, north of the Missouri River, at 8300 N.E. Underground Drive):

- Temperature: Consistent year-round 68 to 75 degrees
- Energy efficient: 50 to 70 percent lower energy bills
- Space: 5 million square feet
- Streets: 6.65 miles of lighted, paved roads
- Railroad tracks: 2.1 miles
- Employers: More than 50 companies
- Employees: More than 1,500
- Pillars: More than 10,000 limestone pillars
- Limestone: Strength of limestone is 10,000 to 12,000 pounds per square inch, which is three times stronger than concrete.



(Top to Bottom) The SubTropolis entrance is flanked by flags of the countries represented by businesses within its underground space. There are 6.65 miles of paved roads and 2.1 miles of railroad tracks in the underground SubTropolis complex. SubTropolis is home to 50 businesses, of which many are manufacturing and distribution. More than 10,000 limestone pillars support the world’s largest underground business complex at SubTropolis.

Businesses choose **ENERGY** savings of below-surface operations

By Jan Landon

Take a look around the underground world of SubTropolis, and you'll find 50 businesses that chose this location for a variety of reasons, including lower energy bills and sustainability. Here are three that prefer a below-surface business location.

Paris Brothers, Inc.



John Welsh, an artisan roast master at Parisi Artisan Coffee, pulls samples of green coffee from Bolivia.

Paris Brothers, Inc., one of the largest tenants in SubTropolis, stores, distributes and sells coffee, 600 types of artisan cheese, olive oil and Caputo flour, among other products.

The firm distributes more than 3,500 specialty items to grocery stores, restaurants and national grocery food service distributors. Paris Brothers also manufactures, markets and distributes several

private-label brands developed by the company.

Paris Brothers occupies 750,000 square feet in the underground facility. Of those, 80,000 square feet is devoted to green or raw coffee, which is shipped in from all over the world. It is one of the largest coffee warehouses in the country.

“From a climate-control standpoint, we have what we consider to be an ideal environment to maximize the life of the coffee,” said Scott Presnell, marketing director.

The company didn't move to SubTropolis in the late 1990s because it was the green thing to do, but being green is now an integral part of the overall operation, Presnell said. He estimates the location saves 70 percent on company energy bills.

“This is like any other building,” he said. “We don't have to make any concessions. We use our location as a strength. The environment we're in is pretty unique in the specialty food business.” The coffee is certified organic, and the company uses only organic cleaners and recycles everything it can.

Expanding is part of the Paris Brothers business plan, and SubTropolis has plenty of space to accommodate. The company has 100 employees at SubTropolis and the Parisi Artisan Coffee Roasting facility at 710 W. 24th Street in Kansas City.

Vanguard Packaging

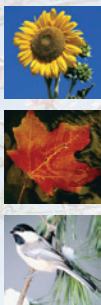
Being green is in his company's DNA, according to Mark Mathes, chief executive officer and founder of Vanguard Packaging, headquartered since 1979 in SubTropolis.

“Sustainability is a top-down driven process,” Mathes said. “I could observe and do nothing, I could think about it or I could do something. This isn't a fad for us. We address it in everything we can.”



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Vanguard Packaging manufactures point-of-purchase displays, retail packaging and corrugated boxes.

Mathes acknowledges the company first moved to SubTropolis three decades ago because it was less expensive than other locations. Since then the company has thrived, and recently Vanguard's three underground facilities were combined into a 400,000 square-foot underground campus. It was all done with a constant focus on sustainability, Mathes explained.

Among Vanguard's green efforts:

- No energy used for heating and a minimal amount used for cooling
- High-efficiency T-5 lighting and motion-activated switches
- Scrap removal system that uses 40 percent less electricity
- Hybrid vehicles that emit 40 percent fewer greenhouse gases and improve gas mileage by 30 percent
- Package design and displays that are 100-percent recyclable at the end of life
- Corrugated production facility that will be the most energy-efficient in North America



Vanguard Packaging manufactures and displays point-of-purchase displays, retail packaging and corrugated boxes in its SubTropolis location.

- Ink that is produced from pine tree rosin, instead of petroleum products
- On-site ink color mixing that reduces shipping and allows 100 percent of leftover ink to be used again
- Treatment of 100 percent of wastewater on site before it is released

Mathes said his company is committed to sustainable practices because it is the right thing to do for his employees, his company and the Earth.

Media Services

The president of Media Services says it would be great if an elevator on the surface transported visitors straight down to his company in SubTropolis.

Robert Rippentrop laughs when he talks about making it like something out of Raiders of the Lost Ark. The company, which offers records storage, management, scanning and secure document shredding, has been in the underground facility for 13 years.

"The temperature is always the same, the humidity is the same, our vehicles stay dry," Rippentrop said. "You can leave the house in shorts on a winter day, drive here and be perfectly comfortable."

Rippentrop estimated one of the biggest financial and environmental benefits is a 50-percent savings on the company's energy bill.

"We don't run air conditioning, because of the steady temperature," he said. "We changed to energy-efficient lighting that has motion detectors throughout the facility. Our paper goes to a paper recycler, and even our trash is incinerated and used again. We really feel like we're a very green company."

The company operates in 100,000 square feet in SubTropolis and announced in September it plans to expand. Media Services also rents about 25,000 square feet in the Meritex Underground Executive Park in Lenexa.

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Resources: Subterranean Kansas City

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Company factory and offices
200,000 sq. ft.
8000 E. 23rd St.
Kansas City, MO
816-483-3187
www.brunsonkc.com

Downtown Underground

Office, light manufacturing and warehousing
805,000 sq. ft.
1501 W. 31st St.
Kansas City, MO
816-531-0800
www.downtownunderground.com

Lenexa Executive Park

Office, light industrial and warehousing
2.1 million sq. ft.
17501 W. 98th St.
Lenexa, KS
913-888-0601
www.meritex.com

Space Center Lee's Summit

Office, light industrial and warehousing
1.3 million sq. ft.
5351 N.W. Lee's Summit Rd.
Lee's Summit, MO
816-257-7770
www.spacecenterinc.com

Carefree Industrial Park

Office, light industrial, and warehousing
4 million sq. ft.
1600 N. State Hwy. 291
Independence, MO
913-681-5888
www.carefreeindustrialpark.com

Interstate Underground Warehouse & Distribution

Warehousing
3.75 million sq. ft.
8201 E. 23rd St.
Kansas City, MO
816-833-0000
www.kcinterstate.com

Parkville Commercial Underground

Office, light industrial and warehousing
385,000 sq. ft.
8700 N.W. River Park Dr.
Parkville, MO
816-803-8120
www.park.edu/pcu

SubTropolis

Office, light assembly, distribution and warehousing
18 million sq. ft.
8300 N.E. Underground Drive
Kansas City, MO
816-455-2500
www.huntmidwest.com

Commercial Distribution Center, Inc.

Warehousing
6 million sq. ft.
16500 E. Truman Road
Independence, MO
816-836-1500
www.cdcinc.com

Jaegers Subsurface Paintball

Underground paintball and laser-tag fields
150,000 sq. ft.
9300 N.E. Underground Dr.
Kansas City, MO
816-452-6600
www.jaegers.com

Space Center Executive Park

Office, light industrial and warehousing
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601 S. State Hwy. 291
Independence, MO
816-257-7770
www.spacecenterinc.com

Underground Vaults & Storage – Kansas City

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