

LIVING UNDERGROUND

Doon and Lina discover that Ember was built underground. Could humans really live underground for long? Read about underground developments and consider how you might design a livable underground city.

Many cities around the world have their own “underground cities” – interconnected tunnels running between office buildings, subway stations, subterranean shops, eateries, and other establishments you’re used to seeing above ground. These “cities” are particularly popular in colder climes where people might demure from being outside when the temperature dips to low. Montreal’s underground city is comprised of more than 20 miles of tunnels used by more than 500,000 people each year. These tunnels connect to residential buildings, though there are no underground residences in the city. Nonetheless, a Montreal resident could go for weeks without going outside by using the tunnels to access their apartment building and office building as well as the normal conveniences of daily life - markets, theaters, restaurants, repair shops, and more.



It’s unlikely that many people would prefer to live underground, away from fresh air and sunshine. But for a time during the Cold War, nuclear fallout shelters were built underground as refuges to which people could go and stay for a while in the event of nuclear warfare. The shelters were designed to protect people from the disastrous effects of nuclear radiation, which could kill them. Though no shelters of Ember’s scale exist, some fallout shelters could support a limited number of people for years. A shelter built under the Greenbrier hotel in West Virginia was large enough to include a cafeteria, dormitories, a hospital, a television studio, and large meeting rooms, among other things. That shelter was designed to house all the members of Congress for years, if necessary, in the event of a nuclear disaster.

Whatever their purpose, underground structures require unique planning and design to address subterranean conditions. They need to be safe from cave-ins and allow for air and light to circulate while offering access to food and water. Could you design an underground city?



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NAME _____

DATE _____

How would you go about building your own underground city?

A city can be better understood by looking at its parts, or components. Using familiar examples, describe a city's components, also known as its "land uses." Then draw plans for your own underground city using these components. Make sure you label your city.

1. Road system—main roads, smaller secondary roads
2. Open public areas—parks, plazas, playgrounds
3. Shopping areas—malls, downtown business district
4. Residential areas—apartments, houses
5. Schools
6. Factories
7. Recreation centers—stadiums and arenas
8. Municipal buildings—city halls, libraries, police and fire stations, electrical facilities, sewage and water plants

ABOVE GROUND

BELOW GROUND

Drawing activity from American Institute of Architects/Michigan Architecture Foundation. For more engaging architecture activities, please see: <http://www.k5architecture.org/index.htm>. See also: <http://www.archkideature.org/play.html>.

Go to www.walden.com for more standards-based activities.