

Environmental Sustainability

Energy

In a community energy is primarily used in heating, electricity, and transportation. Energy can be conserved, produced more efficiently, or replaced with more environmentally friendly sources of energy. Urban planning can have an effect on each of these. For example, electricity can be conserved by adopting strategies that maximize day light available to buildings (to offset electric lighting). Heat can be captured from solar energy as well, either passively or with thermal panels and further conserved with airtight buildings or shared walls. Transportation system energy can be conserved by switching to less energy intensive modes, including walking and cycling. Good urban planning can make this easier and more palatable by placing complementary uses closer together and designing neighbourhoods that are comfortable and beautiful to walk through. Urban planning can also make other efficiencies possible, for example, district energy can be used to power a dense neighbourhood, and the waste heat can be used in buildings. Finally, electricity can be produced from renewables such as solar photovoltaic (PV) panels or wind.



Water

Water issues include provision of drinking water, removal of sewage and management of stormwater. Water basin carrying capacity and water shortage issues are also important. The South Saskatchewan basin, which the Calgary Region's water comes from, has a finite amount of water, much of which is supplied by snow in the Rockies. The basin's water supplies human consumption, agricultural, and industrial uses. It is important to plan to ensure the combined demands in the region do not outpace supply. Some of the water provided for residential use does not need to be potable. Grey water can be recycled for watering plants and similar uses, minimizing the volume of potable water required. Stormwater can be managed using Low Impact Development (LID) techniques. LID works with and mimics natural stormwater drainage and absorption patterns. This keeps water closer to its source than traditional stormwater methods, which channel stormwater away quickly to rivers or streams, and out of the basin.



Ecology

Plans should operate within the water basin's carrying capacity, and within the ecosystem's capacity to absorb wastes, (in the form of garbage, emissions, etc.). Ecological issues in planning include preservation of natural plant and animal species. These can be conserved if intensive development avoids particularly sensitive habitat. Habitats are a combination of topography, hydrology, vegetation, and other factors, so these must all be taken into account when planning. As an added benefit, preservation of habitat often results in areas of natural amenity that are prized by communities.

Resources

Green Infrastructure - <http://www.asla.org/ContentDetail.aspx?id=24076>, <http://www.greeninfrastructure.net/>

CNT (2010) *The Value of Green Infrastructure: A Guide to Recognizing Its Economic, Social and Environmental Benefits* (<http://www.cnt.org/repository/gi-values-guide.pdf>)



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Alberta Low Impact Development Partnership, (<http://www.alidp.org>)

Low Impact Development Urban Design Tools (www.lid-stormwater.net)

Urbanwater.info, (2007). *Good Practice Toolkit* (<http://www.urbanwater.info/Good-Practice-Toolkit.aspx>)

Prairie Urban Garden (<http://www.prairieurbangarden.ca/index.html>)

Sources

Images: [1] VectorPortal.com <http://www.vectoropenstock.com/317-Free-Vector-Landscape-vector>

[2,3] ARTUR COELHO http://intergalacticrobot.blogspot.ca/2007_08_01_archive.html



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