

In natural settings the majority of precipitation filters into the ground while a small portion runs over the surface and into adjacent water courses. This surface runoff water is classified as stormwater runoff. As areas are built up and urbanized surface permeability is reduced resulting in increased stormwater runoff volumes that are transported via urban infrastructure to receiving waters. These stormwater volumes contain sediment and other contaminants that have a negative impact on water quality, navigation and recreation. For instance, parking areas contribute to stormwater runoff that is contaminated with oil, fuel, lubricants, combustion by-products, material from tire wear, and de-icing salts. Allowing stormwater to be absorbed into the ground can recharge local aquifers, mimicking the natural water cycle.

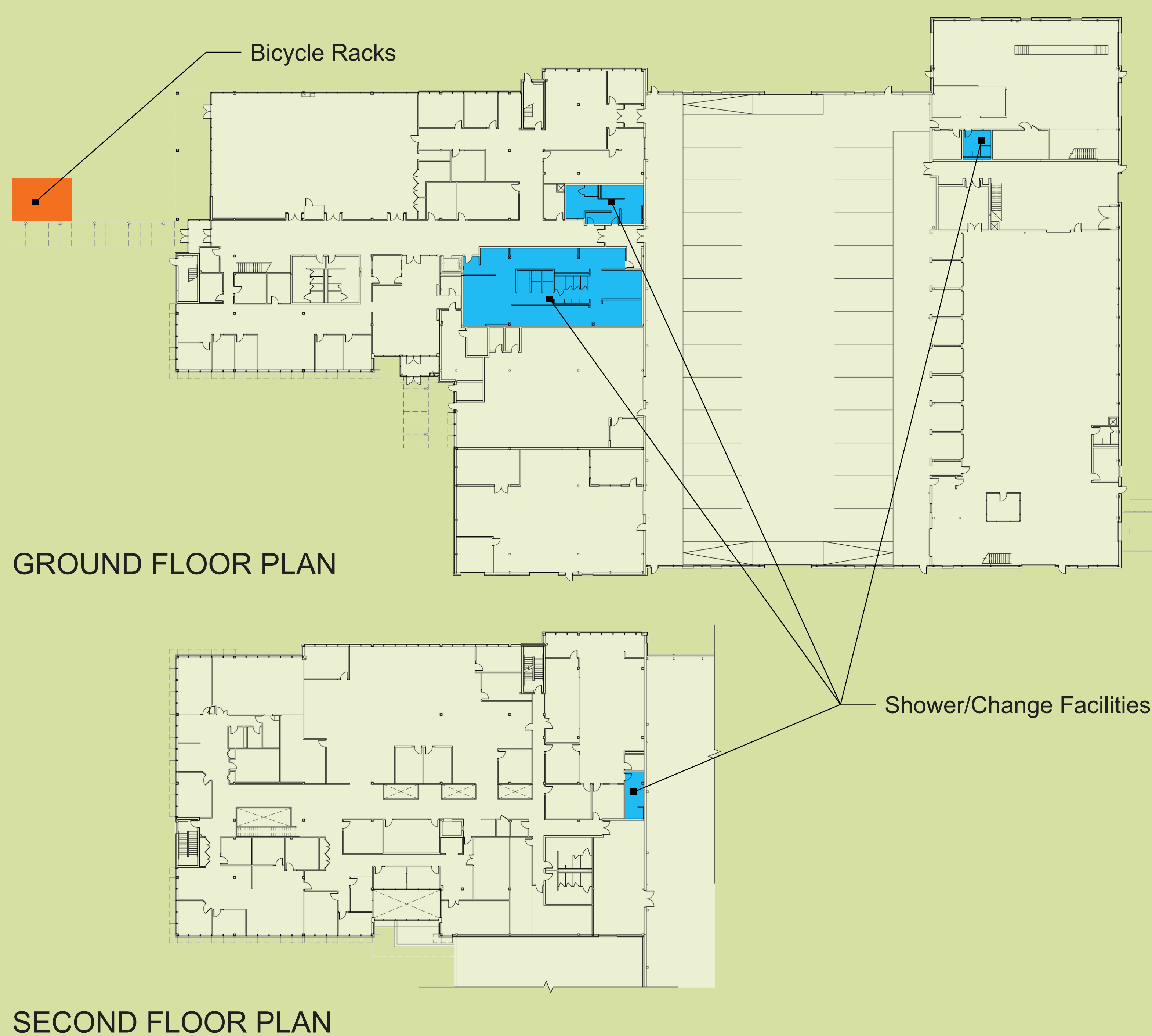
## CONSIDERATIONS

Development and construction processes are often destructive to local ecology. These activities also encroach on productive agricultural land areas and open space. Stormwater runoff from developed areas can impact water quality in receiving waters, hinder navigation and recreation, and disrupt aquatic life.



## STORM WATER MANAGEMENT

The storm water runoff at the Waterloo North Hydro building has been designed to reduce the average annual total suspended solids (TSS) and total phosphorous by 85% and 50% respectively from before construction. Phosphorous can be found in two general forms – particulate and dissolved. Studies have found that most of the particulate phosphorous bonds itself to the TSS in stormwater. Three stormceptors have been installed to remove more than 70% of the total suspended solids.



## GREEN MEASURES

- An erosion and sedimentation control plan was implemented during construction including the installation of a temporary silt fence to reduce the potential for sediment to be blown or carried by surface water onto surrounding properties.
- The development footprint for this building is relatively small. Of the total 8.75 hectares of the building site, 8.04 hectares of open space have been provided, and over half of that open space has been restored by replacing impervious surfaces with native planting or adaptive vegetation.
- The exterior lighting of the building is designed to reduce light pollution by employing low cut-off exterior fixtures that minimize spillage onto adjacent properties. None of the luminaires are within a distance of 2.5 times their mounting height of the property boundary.
- Bicycle storage racks and showers for building occupants were installed to allow individuals to bike, run, or walk to work, thereby reducing pollution associated with automobile use.