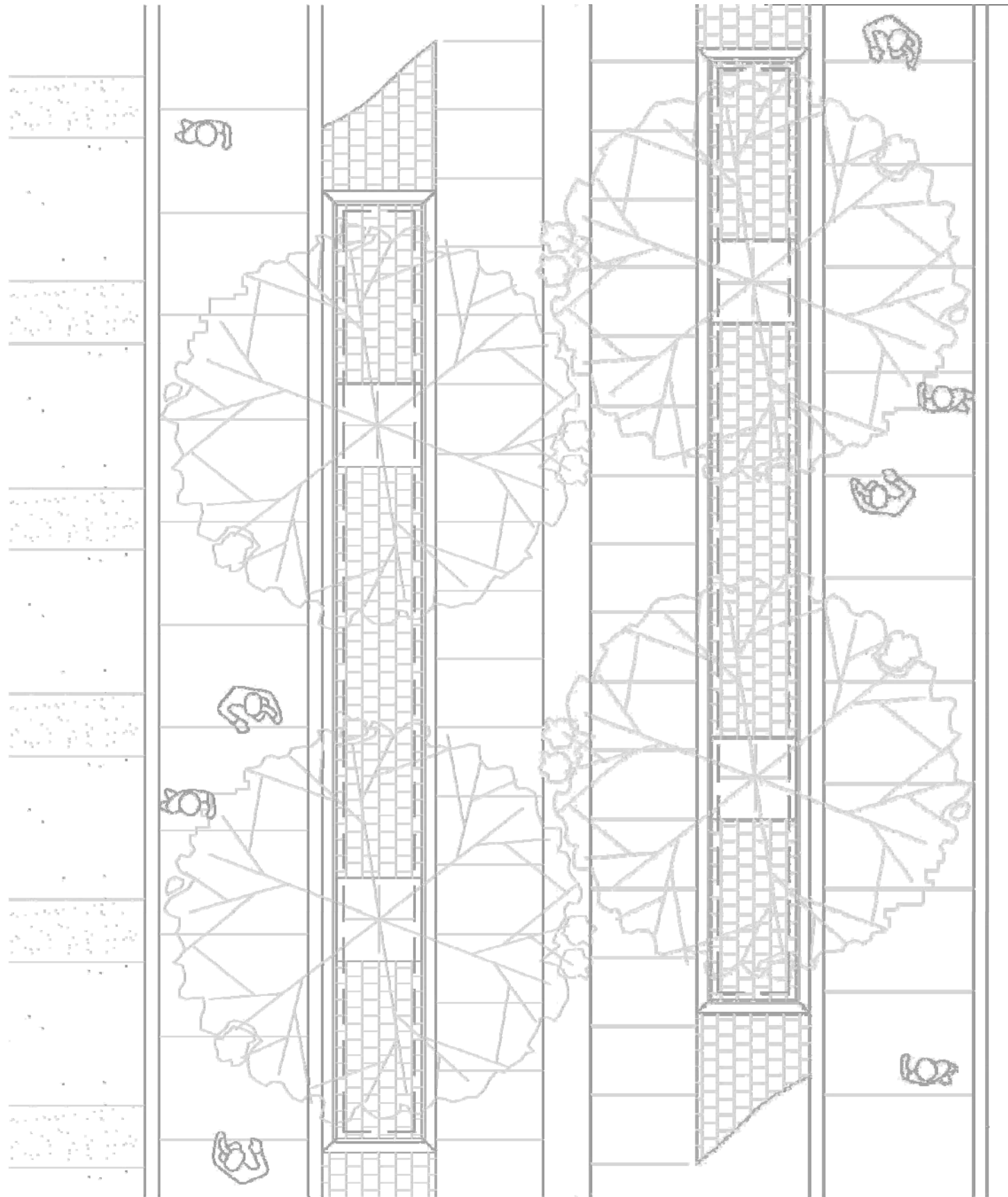


## 6.0 SUSTAINABILITY CONSIDERATIONS



## 6.1 Sustainability Criteria and Performance Measures

Carrville District Centre will become a vibrant place to live, work and recreate. Encouraging development that is environmentally sustainable is an important element to achieve this vision. There are a number of performance measures that can be utilized by the City of Vaughan to ensure that any future development in the District Centre adheres to the overall objective of sustainability.

The following guidelines and benchmarks serve as incremental steps to help transform traditional land development and management practices toward sustainability. These guidelines are meant to encourage site designers and developers to allow natural and built systems to work together to improve the long-term health of the environment and of socially and economically viable communities.

The measures listed below have been adapted from the criteria established by the American Society of Landscape Architects Sustainable Sites Initiative (2008) and are intended to supplement the U.S. Green Building Council's LEED Rating System. These measures are as follows:

### **Site Selection Considerations**

- Preserve threatened or endangered species habitat;
- Protect and restore flood plain function of riparian zones;
- Limit disturbance of prime farmland soils, unique soils and soils of provincial importance;
- Select brownfields or greyfields for redevelopment;

### **Pre-Design Assessment and Planning Considerations**

- Conduct a pre-design site assessment;
- Use an integrated design process;
- Develop a program plan with site performance goals; and,
- Engage users and other stakeholders in meaningful participation in site design process.

### **Ecological Considerations**

- Control and manage invasive species to limit damage to local ecosystems;

- Use appropriate non-invasive plants in order to support biodiversity, reduce pesticide use and water conservation;
- Preserve special status trees, including those designated for tree size, age, species, ecological value, location;
- Minimize or eliminate potable water consumption for landscape irrigation;
- Encourage the use of materials and technologies to promote the infiltration of stormwater (i.e. permeable pavers / driveways) in order to reduce runoff and lessen the impacts to waterways and valley systems.
- Preserve and restore plant biomass to enhance ecosystem service benefits provided by vegetation;
- Preserve and restore native wildlife to promote biodiversity;
- Minimize building heating and cooling requirements with vegetation / vegetated structures in strategic locations around / on roof of buildings to reduce energy consumption;
- Reduce urban heat island effects on microclimate and human and wildlife habitat by strategically using vegetation and reflective materials. Ensure that reflective surfaces on the roof of buildings are sensitive to adjacent buildings and do not "blind" adjacent users;
- Promote a sense of place and regional identity with vegetation native to the ecosystem;
- Protect and restore riparian and wetland buffers to improve flood control and water quality services, stabilize soils and provide habitat function;
- Repair and restore damaged or lost streams and wetland habitats to enhance recreational opportunities;
- Preserve all existing healthy soils;
- Preserve existing topography by minimizing grading;
- Cleanse and manage water on-site by treating water run-off and replicating the natural hydrology (infiltration, run-off and evapo-transpiration); and,
- Eliminate potable water use in ornamental or stormwater features and minimize (no more than 50%) use of potable water in water features for full human contact.



### **Human Health Considerations**

- Promote equitable site design, construction and use to ensure that surrounding communities share in the benefits of the development;
- Provide for best possible site accessibility, safety and wayfinding;
- Promote sustainable awareness and education by revealing processes that show the sustainability of the site;
- Provide views of natural environment to building occupants;
- Provide opportunities for outdoor physical activity, social interaction and mental restoration;
- Connect site to surrounding resources, amenities and services for pedestrians, cyclists and transit riders, increasing the opportunity for active living;
- Design stormwater management ponds to be a landscape features;
- Protect and promote unique cultural and historical site attributes; and,
- Prevent sensory stress, including excessive light, noxious odours, wind and noise to minimize negative effects on human health.

### **Material Selection Considerations**

- Eliminate use of lumber from threatened tree species;
- Support sustainable practices in plant production;
- Support sustainable practices in materials manufacturing;
- Re-use all possible on-site structures, hardscape and landscape amenities;
- Integrate salvaged and recycled content materials into site design;
- Use certified wood to encourage exemplary forest management practices;
- Use products designed for reuse and recycling to minimize future energy consumption for deconstruction;
- Use adhesives, coatings, sealants and paints with reduced volatile organic compound (VOC) emissions; and,
- Conduct a life cycle assessment to reveal environmental and human effects throughout the life of the material;

### **Construction Considerations**

- Create a soils management plan to communicate grading, construction and landscape intentions;
- Restore soils disturbed by construction;
- Achieve a carbon-neutral site by decreasing energy consumption and provide carbon sinks to effectively offset the carbon balance of the site;
- Divert demolition and construction materials from disposal;
- Minimize the discharge of construction pollutants to water bodies during construction; and,
- Use excess vegetation, rocks and soils generated during construction to achieve a net zero-waste site.

### **Operation and Maintenance Considerations**

- Plan for sustainable landscape maintenance;
- Minimize exposure to localized air pollutants;
- Recycle organic matter generated during site operation and maintenance;
- Provide for storage and collection of recyclables; and,
- Use renewable energy sources for outdoor electricity.

