WASTE

theme overview
planning & design decisions
goal

ensure the use of green neighbourhood and building waste management practices

detailed design tasks
fostering sustainable living

Industrialized nations have adopted a linear approach to resources, resulting in the generation of huge amounts of waste. This results in inefficient use of commodities, requires large amounts of land and money to treat, and often has toxic impacts on natural areas. Sustainable urban neighbourhoods provide the opportunities which enable lifestyles that reduce, reuse and recycle waste, and foster a cradle-to-cradle culture of thinking that considers waste as a resource.

theme overview

why is this theme important?

Waste can fall into many different categories including (but not limited to) waste heat, construction waste, and municipal solid waste (MSW). All of them have a negative impact on both human health and the health of ecosystems, including water and air quality.

The construction industry is the largest user of natural resources, and the largest producer of waste.[1] Through jobsite recycling initiatives, it is possible to divert almost 100% of construction waste sent to landfills. Not only is recycling prudent from a resource conservation standpoint, it can also save the contractor money through the reduction of landfill tipping fees. The best way to reduce the amount of waste generated, and subsequently the amount of resources required, is to think of waste as a resource. This requires shifting from a linear cradle to grave approach, into a circular cradle to cradle pathway.

why is waste important to emerald hills urban village?

Albertans have the lowest recycling rates in the country, and only recycle or reuse 17% of their waste.[2] Strathcona County has had better performance than the provincial average through involving the community in curbside recycling programs for yard waste and newspapers.

Through these measures and the composting strategy, Strathcona County recently reached a 50% reduction in waste target.[3]

Maintaining this aggressive stance on waste reduction will increase the lifespan of the Clover Bar Landfill into the future, which will delay costly and contentious landfill upgrades. Moreover, increasing opportunities for recycling and using reclaimed materials can create an opportunity for revenue from recyclables, and waste reduction will preserve land and reduce air and water pollution.

how can emerald hills urban village impact on this theme?

Opportunities for waste reduction lie in thinking of waste as a resource rather than as an end state. Typically, this is thought of as the "three R's": reducing, reusing, and recycling. While most methods of achieving improved waste management approaches are pertinent following planning and design of a site, there are some important aspects that can be embedded into Emerald Hills Urban Village from the outset. These include demonstrating leadership in terms of construction waste management, and through ensuring that the infrastructure is put in place to help residents to reduce the amount of waste that they produce.

summary table of goals and strategies for waste

goal	charrette process strategy
Ensure the use of green neighbourhood and building waste management practices.	Design in conformance with standardized green neighbourhood and building rating protocols.

1. Busby, P. Sustainable Design Fundamentals for Buildings, page 21. 2001.
2. One Planet Living. Emerald Hills Urban Village Inception Report. 2006.
3. Strathcona County, Waste Collection and Recycling Department. 2005.

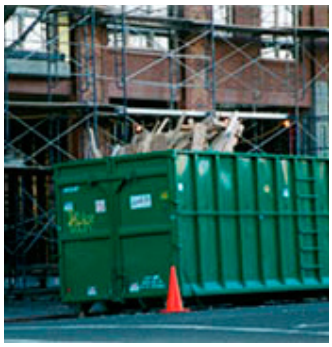
planning & design decisions

general intent of this strategy / A range of green building rating protocols are available that effectively address a series of strategies for dealing with waste. These include LEED-NC, LEED-CI, LEED for Homes, Built Green, BOMA GO Green, and numerous others. Once a decision is made which protocol(s) are to be used, careful attention needs to be paid to the requirements and credits laid out.

Waste management is distributed throughout the Village. (Sketch taken from design charrette).

Solar aquatic systems transform wastewater solids into an organic soil amender.

In-vessel high-rate composters quickly transform organic waste.



It is possible to divert almost 100% of construction waste sent to landfills.

goal / ensure the use of green neighbourhood and building waste management practices.

strategy /design in conformance with standardized green neighbourhood and building rating protocols.

area i: institutional, residential,commercial

- Buildings are designed to LEED-NC, Built Green for MURBs standards, or equivalent.
- This includes such concepts as using standard size building components to reduce cut-offs, sourcing salvaged and recycled materials, and including reuse and recycling stations in convenient locations.

area ii: residential, commercial

- Buildings are designed to LEED-NC, Built Green for MURBs standards, or equivalent.
- This includes such concepts as using standard size building components to reduce cut-offs, sourcing salvaged and recycled materials, and including reuse and recycling stations in convenient locations.

area iii: residential, commercial

- Buildings are designed to LEED-NC, Built Green for MURBs standards, or equivalent.
- This includes such concepts as using standard size building components to reduce cut-offs, sourcing salvaged and recycled materials, and including reuse and recycling stations in convenient locations.

municipal reserve & public utility lot

- A central high-rate composter is situatied in close proximity to the community gardens.

area iv: residential

- Buildings are designed to LEED for Homes, Built Green standards, or equivalent.
- This includes such concepts as using standard size building components to reduce cut-offs, sourcing salvaged and recycled materials, and including reuse and recycling stations in convenient locations.

area v: residential

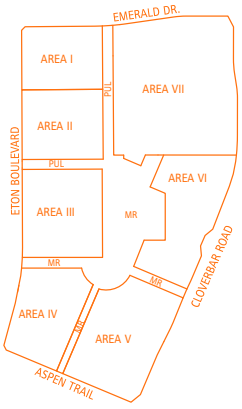
- Buildings are designed to LEED for Homes, Built Green standards, or equivalent.
- This includes such concepts as using standard size building components to reduce cut-offs, sourcing salvaged and recycled materials, and including reuse and recycling stations in convenient locations.

area vi: residential, commercial

- Buildings are designed to LEED-NC, Built Green for MURBs standards, or equivalent.
- This includes such concepts as using standard size building components to reduce cut-offs, sourcing salvaged and recycled materials, and including reuse and recycling stations in convenient locations.

area vii: commercial, residential

- Buildings are designed to LEED-NC, Built Green for MURBs standards, or equivalent.
- This includes such concepts as using standard size building components to reduce cut-offs, sourcing salvaged and recycled materials, and including reuse and recycling stations in convenient locations.



Incorporate reclaimed materials into building design.

detailed design tasks

general intent / This section highlights design tasks flagged during the charrette process as needing to be addressed during the detailed design process. LEED for Neighbourhood Development prerequisites and credits are to be satisfied.

detailed design tasks

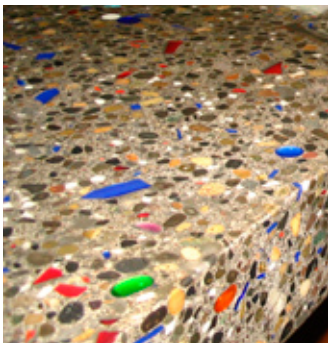
- Ensure that the highest possible LEED, Built Green, or equivalent protocols are used during detailed design.
- Determine required area needed for a central high-rate (in-vessel) composter, and locate in close proximity to community gardens.
- Specify aesthetically pleasing local and reclaimed material for public spaces with high visibility.
- Determine location(s) for Village-wide recycling and hazardous waste disposal.
- Examine waste to energy possibilities.

related leed-neighbourhood development credits

- LEED ND GCT Credit 18: Construction Waste Management
- LEED ND GCT Credit 19: Comprehensive Waste Management

See www.usgbc.org for more information.

Locate public recycling opportunities throughout the Village.



Incorporate recycled materials into building and landscape design.

Incorporate recycling centres into the design of the dwelling.

fostering sustainable living

general intent / The detailed design decisions that enable sustainable development at Emerald Hills Urban Village must also foster sustainable living. The Strategies and Initiatives/Activities identified below represent an initial framework and point of departure for generating a Fostering Sustainable Living Program at the Urban Village. They are intended to provide the integrated design team with the sustainable living lens that is to be applied to all detailed design decisions. It is recognized that these lists will evolve and be refined as the detailed design for the Urban Village emerges.

Waste to Art Program.

strategies

- Ensure detailed design of built environment supports integrated waste management.
- Integrate innovative dwelling / building / site recycling and composting centres.
- Integrate highly visible use of recycled/reclaimed materials.
- Introduce community-based social marketing (CBSM) programs to foster waste reduction choices.
- Engage all Village citizens in creating an integrated waste management program.
- Partner with locan NGOs working on waste related issues.
- Leverage purchasing power to buy waste-friendly products.
- Introduce community-based social marketing (CBSM) programs to foster waste reduction.
- Promote awareness-builidng and community mapping.

Backyard Composting Program.

initiatives / activities

- Recycled and relaimed materials integrated into public spaces.
- Integrated Waste Management Program - monitor Village waste generation.
- Great Strathcona Exchange.
- Electronics recycling by local businesses.
- 'Compost Masters' to educate and deliver compost programs.
- Participation in Canadian-based Compost Awareness Week.
- Tours of local facilities.
- Clear Bags Program (Fredericton NB).
- Children's Waste-to-Art Program.
- Annual Village Yard Sale.
- Freecycling on Village Intranet.
- Village Repair and Service Centre - home-based business.
- Partner with Salvation Army or similar organization for pick-up of reuse goods.
- 'Waste as Food' program with local busnesses.
- 'Cradle-to-Cradle' section in the "Living Smart at the Village" intranet handbook.
- 'Waste Not-Want Not" initiative on Village Intranet promoting zero-waste products.
- 'Throw-away - Where is Away?' - a CBSM program to foster sustainable waste habits.
- Compost socials to educate and encourage participation.

Integrated Waste Management Program.