



School Ground Greening Workbook



and other alterations, improvements or additions

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Note: Please visit the UGshare website for the most up-to-date UGDSB greening forms and resources:

School Ground Greening Planning Chart
Outdoor Alterations and Greening form
Greening Worksheet #1: Maintenance and Sustainability Plan
Guidelines for Smaller School Ground Projects

UGDSB – OUR GREENING PHILOSOPHY

School ground greening is the process of transforming conventional school yards into sustainable, natural and healthy environments. All UGDSB schools are encouraged to extend the classroom and consider natural outdoor spaces to promote student learning and well being. As we move away from traditional ‘playground equipment’ to more naturalized playscapes that provide enhanced opportunities for creative play and inquiry learning, it is clear that these areas require greater expertise in planning and maintenance. This workbook was created to support schools in completing school ground greening projects. It provides detailed information on how to follow the school ground greening planning process to help improve and/or enhance the environmental quality and function of school grounds.

School Ground Greening Committee Vision:

By creating engaging green spaces and opportunities for outdoor play during the school day, we will help students to become well-developed, healthy citizens. Unstructured outdoor play can help achieve this goal by impacting positively on physical health and mental well being and helping to develop curiosity and personal connection to the natural world.

Outdoor learning increases students’ academic success by fostering student motivation and engagement. It is also critical to students’ physical & mental well-being.

“In his influential book, *Last Child in the Woods: Saving Our Children From Nature-Deficit Disorder*, Richard Louv identifies the absence of nature in the lives of today’s children, and the disturbing trends this disconnect with the natural world is having on the physical and mental health of children and adults.” “Studies such as the one carried out by the Toronto District School Board have shown that the thoughtful greening of school grounds has a direct link to more creative thinking, improved quality of play, and social interaction. Students tend to be more engaged and enthusiastic about learning and demonstrate a marked increase in retention of knowledge. Play areas become safer and better utilized with a decrease in aggressive play and boredom. Social relationships between students, and

students and teachers show improvement, and environmental stewardship increases significantly.” *

All School Grounds Have Potential

“School grounds, no matter how big or small, no matter how urban or rural, hold great potential to enhance the learning climate of the school. Well designed school grounds go beyond promoting active and appropriate play, to providing a purposeful link to the natural world, and can greatly enhance the formal and informal learning experiences of our children. Realizing this potential is a collective, thoughtful and creative journey. If done well, it can create a legacy for your school community for decades to come.” *

Greening is More Than Beautification

“Greening looks beyond simple aesthetics to improve the quality and function of the school grounds. It embraces safety, shading and energy conservation, maximizes the usefulness of our school ground spaces, links our curriculum to the outdoors, reduces our environmental footprint, and fosters an appreciation and stewardship of our fragile environment.” “The value of the project comes not from visual impact, but how meaningfully it is integrated into the daily life of the school community. The more it is used, the more it will be embedded into the school culture and valued.” *

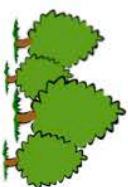
**From: GECDsB's School Ground Greening Workbook*

Your ‘Outdoor Classroom’ is your whole school yard!

There has been a shift in thinking. Previously, the installation of a formalized seating area was called an outdoor classroom and it was thought that this is where learning takes place outside. But schools are moving away from costly theatre style seating and instead scattering natural rock and log seating throughout the yard, with the understanding that classes spend only a small amount of time seated and being instructed by the teacher. Instead inquiry based learning encourages the use of the whole school grounds as the learning environment.



UGDSB SCHOOL GROUND GREENING PLANNING CHART



GETTING STARTED

- ☐ **Form School Greening Committee**
 - Form a school committee with P/VP, teachers, parents, etc.
 - Contact Operations Coordinator if you wish to be considered for Evergreen support
- ☐ **Read UGDSB School Ground Greening Workbook**
- ☐ **Gather Data**
 - Input from all stakeholders
 - ⇒ Purpose and user needs
 - Mapping of the grounds
 - ⇒ Physical and environmental features & shade patterns
 - ⇒ Play and use patterns
- ☐ **Define the Vision**
 - E.g., natural playground, increase shade, outdoor learning space, naturalized area (no mow), other?
- ☐ **Determine Scope**
 - Whole yard, specific project?
- ☐ **Plan Funding Sources**
 - Grant, fundraising, donations
- ☐ **Review Preliminary Ideas**
 - Contact Project Coordinator

PLANNING YOUR PROJECT

- ☐ **Contact Landscape Professional**
for large scale projects or as needed
 - e.g., Evergreen, OALA certified landscape architect, arborist, etc.
- ☐ **Review Policy and Legislation**
 - Board Policies: #210, #307, #214, #102, #302, AND Ophea, OSBIE
 - CSA Children Playspaces Standards
 - Accessibility Standards Regulations
- ☐ **Research Best Practices**
 - Review greening resources (e.g., EcoSchools, Evergreen, etc.)
- ☐ **Site Plan: Factors to Consider**
 - Green design principles
 - Impact on facility site operations
 - Expected maintenance requirements
- ☐ **Design Concept: Factors to Consider**
 - Child's developmental needs
 - Outdoor learning and curriculum connections
 - Natural materials
 - Safety and accessibility
- ☐ **Review Preliminary Design Concept**
 - Contact Operations Coordinator

IMPLEMENTING YOUR PROJECT

- ☐ **Submit Project Request to Plant Operations**
 - Greening, Alterations or Improvements to School Grounds form
 - Site plan
 - Maintenance & Sustainability Plan
 - Concept and/or CAD drawing
- ☐ **AFTER Plant Operations Approval**
- ☐ **Gather Cost Estimates**
 - Follow board purchasing policy (e.g., If > \$2 500, gather 3 quotes.)
 - Verify proof of WSIB & Insurance
- ☐ **Proceed with contractor selection & project installation**
 - Ensure all policies and guidelines are followed

MAINTAINING YOUR PROJECT

- ☐ **After Project is Completed**
 - Site visit by Operations Coordinator or playground inspector for final approval
 - Follow maintenance schedules
 - Ensure funding is allocated for yearly maintenance
- **Enjoy your greener school!**



Indicates a step with board involvement



Get board approval before proceeding

UGDSB SCHOOL GROUND GREENING PLANNING PROCESS

1 GETTING STARTED

This workbook has been created to take the guesswork out of completing a greening project in the UGDSB. It is full of valuable information that you will need to make your project a success. Use it as a guide throughout the entire process. This section on the planning process provides details to the helpful *UGDSB School Ground Greening Planning Chart* (previous page).

1a. Form a School Greening Committee

The inspiration to green up your school grounds can come from many sources within your school community, including teachers, students and school council members. Once the 'seeds' of a project are created, a School Greening Committee should be organized and chaired by the school's principal or vice-principal. In order to help build capacity, it is beneficial to select a co-chair. Depending on the size and scope of the project the committee will need to include a variety of stakeholders (i.e. students, school staff, parents and community members) to ensure that everyone's voice is heard.

*Greening your schoolyard is more than planting trees.
It is improving your outdoor space in any way that
enhances student learning or wellbeing.*



Contact Plant Operations

Once the School Greening Committee is established, the Principal needs to contact the Operations Coordinator if the school has an intention for a larger naturalized playscape project and wishes to be considered for Evergreen support. The Board hires an Evergreen consultant to help assist schools with planning, concept drawings, etc. A select number of schools can be accommodated each year. School Greening committees are required to attend an Evergreen evening workshop to learn about the school yard greening process.

Note: If you are simply undertaking a small project (such as a bench, log seating, sandbox, composter, container planting, bird feeder, no mow zone or pollinator garden) you do not need to complete the *Outdoor Alterations and Greening* form. BUT, to determine the optimum location of your project, you are required to go to UGshare to find your school's site plan to ensure your project does not impede grounds maintenance, snowploughs, septic beds, or is inadvertently put in the location of a future portable site. (If your school's map is not up to date or you have some questions, please contact the Operations Department for assistance.) You also need to review the helpful one page 'Guidelines for Smaller School Ground Projects' for your specific initiative.



1b. Gather Data

- **Input from all stakeholders to determine:**
 - ⇒ **Purpose and user needs**
- **Mapping of the grounds to determine:**
 - ⇒ **Physical and environmental features & shade patterns**
 - ⇒ **Play and use patterns**

Gathering Input

The purpose of gathering data is two-fold. First, the process itself builds capacity for project implementation. Secondly, data obtained helps to determine the scope and nature of work in the project. Start a conversation with your School Greening Committee to identify the stakeholders (students, staff, parents, community members, etc.) in each project. The number and type of stakeholders could vary from project to project.

Input from all stakeholders provides for a better end product, but it is also a legislative requirement. All public sector organizations must comply with the Accessibility for Ontarians with Disabilities Act, 2005 (AODA) and its amendments and updates. Reg 191/11 states: *“When constructing new or redeveloping existing outdoor play spaces, organizations shall consult on the needs of children and caregivers with various disabilities.”*

“Consultation requirements aim to ensure play experiences are available for all users of a play space, including those with a range of disabilities. Consultations with the public, including people with disabilities, can provide organizations with valuable insight about the diverse needs of children and caregivers with disabilities in the community. The consultation requirement does not set out a particular process or way to consult, as it is recognized that consultations can be conducted in a wide variety of ways depending on the organization.”

From A Guide to the Integrated Accessibility Standards Regulation – Design of Public Spaces Standard

Data collection and consultation can occur through a variety of means. Focus groups, surveys, place mat activities, assemblies (raising of hands), design contests and alike can be utilized to determine the purpose and user needs for the project.

It is recommended that accessibility for your current student population is not the only type of approachability that you consider. Your project should be accessible for everyone currently and in the future. (For more information about accessibility requirements, go to Appendix C.)

Mapping

Mapping of the grounds to determine topography, soil types, existing trees and shrubs, existing structures, utility locations, shade requirements etc. provides important data for project development. Play patterns, existing use and anticipated use are important pieces that also need to be explored.

A map that shows the play and existing use patterns of your site will help you make informed decisions. For example, using a copy of your school site plan (most are now available on UGshare) with the physical and environmental features of your site labeled, you can circle the following zones and shade them with different coloured pencils:

- active play areas (sports fields, baseball, sandpits, etc.);
- asphalt game areas (basketball, four square, hopscotch, wall ball);
- passive/quiet play areas (gathering spots, benches, seating);
- circulation routes where people walk, including naturally worn pathways across grass;
- 'out of bounds' areas where students aren't allowed to be during school hours.

Look at your maps, showing where students play, where parents meet and pick up their children, and where outdoor instruction is held. Which areas need shade? Which area is best suited to an outdoor seating area, or a naturalized playscape?

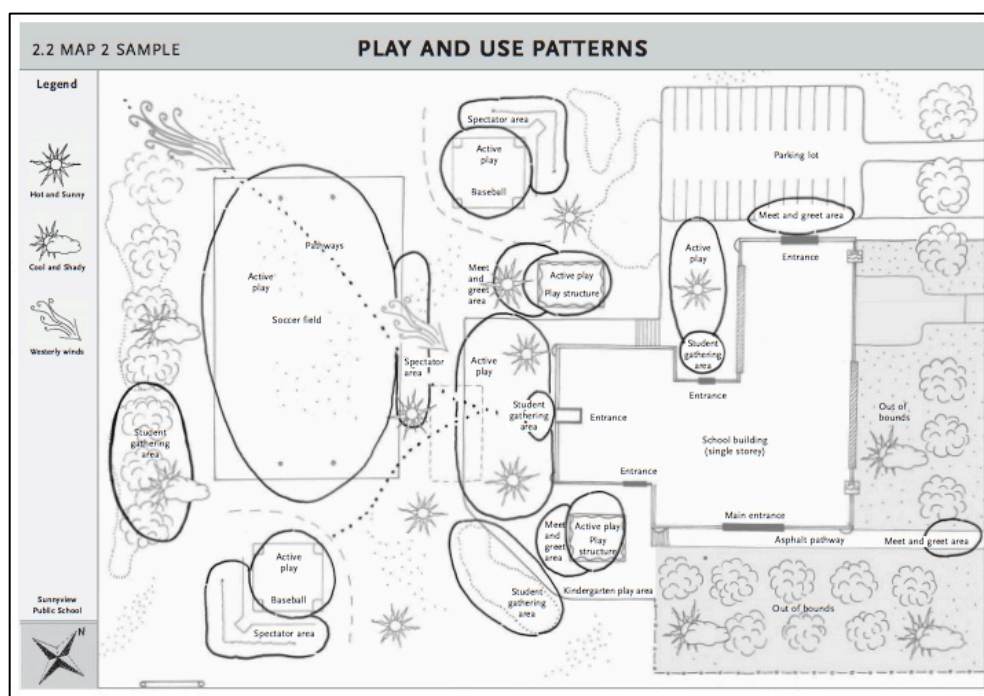


Diagram From: Ontario EcoSchools: Designing for Shade and Energy Conservation

1c. Define the Vision

- **E.g., Natural playground, increase shade, outdoor learning spaces, naturalized area (no mow), other?**

Review gathered data from the previous step. (e.g., stakeholders' needs, physical and environmental features, shade patterns, play and use patterns)

Determine goals for your greening/ playscape project, which may include:

- creating a more natural play space for students to connect with and enjoy;
- increasing hands-on learning opportunities;
- creating outdoor learning spaces, (including seating)
- nurturing wildlife habitats;
- providing better shade for students;
- providing seating and/or passive play areas for students;
- establishing native plant gardens that promote connection between natural areas;
- helping students understand and appreciate the process of growing vegetables and herbs.

Edited From: *All Hands in the Dirt: A Guide to Designing and Creating Natural School Grounds* (Evergreen)

INCORPORATING FIRST NATIONS, MÉTIS AND INUIT TRADITIONS

Consider seeking input from your local First Nations, Métis and Inuit knowledge carriers and Elders to integrate traditional approaches into your greening plan. For example, learn more about plants native to the area and their medicinal uses, or Three Sisters gardens and the advantages to interplanting crops.

A NOTE ON SHADE

The importance of increasing shade on your schoolyard is an essential factor to be considered. Skin cancer is the most common form of cancer in Ontario. Children are at school during the highest risk period of the day – between 10am and 4pm. UV radiation may also cause eye problems such as cataracts. The effects of heat exhaustion must also be mitigated, in light of the Intergovernmental Panel on Climate Change findings that scientists expect climate change to increase global temperatures by 2 to 6 degrees by the end of the century.

Resources to help schools plan for shade are:

- ✓ **Ontario EcoSchools:** *School Ground Greening: Designing for Shade and Energy Conservation Guide*
- ✓ **Waterloo Region Shade Work Group:** *Shade Audit Information Guide + Tool: A Guide for Creating Shady Outdoor Spaces*
- ✓ **ONTARIO SUN SAFETY WORKING GROUP:** www.uvontario.ca

1d. Determine Scope

- **Whole yard, specific project?**

Based on your data collection and the recommendations of your School Greening Committee, your project may only include a small area of your yard, or may include multiple phases and encompass a whole yard plan. In either case, it is important to complete a full site assessment to ensure current or future additions make the best possible utilization of space. Creating a potential plan for the whole school yard will help avoid undoing or moving projects when new concepts are added. It's best to think ahead!

1e. Plan Funding Sources

- **Grant, fundraising, donations**

Most school ground alterations need to be financed using school-generated funds, often made possible with a School Council's efforts and support. Be sure to review the UGDSB's *School Generated Funds Policy #102*, and the *School Generated Funds Procedures Manual* to ensure compliance with Board procedures.

Resource for help with fundraising and obtaining grants are:

- ✓ **The EcoSchools Funding Opportunities website keeps the most comprehensive, up-to-date list:** <http://www.ontarioecoschools.org/tools-resources/funding-opportunities/>

1f. Review Preliminary Ideas



Contact the Operations Coordinator

Reviewing your draft plan with the Board is essential to ensure you are following proper policies and procedures and avoiding costly mistakes.



2 PLANNING YOUR PROJECT

2a. Contact Landscape Professional

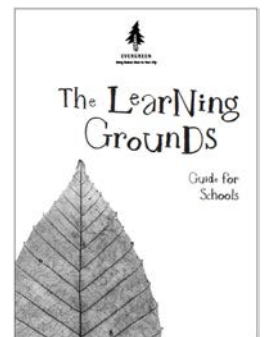
- e.g., Evergreen, OALA certified landscape designer, arborist, etc.

A landscape professional will be needed to assist you in making the right decisions and avoiding costly mistakes when it comes to large scale projects, and may be beneficial for smaller concepts if your committee needs guidance.

Note: The Board has contracted with Evergreen for professional design guidance for greening projects for a limited number of schools each year. Schools may opt to pay for Evergreen (or a comparable organization that is familiar with Board policies and procedures) out of their project budgets if Board funding has reached its maximum. Contact Plant Operations for details.

2b. Review Policy and Legislation

- UGDSB's Environmental Education and Management Policy #210
- UGDSB's Outdoor Play Spaces Policy #307 and Procedures Manual # 307 A
- UGDSB's Accessibility Standards Policy #214 and Procedures Manual # 214 A
- UGDSB's School Generated Funds Policy #102 and Procedures Manual # 102 A
- UGDSB's Purchasing Policy #302 and Procedures Manual #302 A
- Accessibility for Ontarians with Disabilities Act (AODA)
- Ontario Regulation 191/11: Integrated Accessibility Standards, Design of Public Spaces Standards (Outdoor Play Spaces section)
- CSA Group's Children's Play Spaces and Equipment CAN/CSA-Z614- 14 (or most current version) and the Annex H Guidebook
- Ontario School Boards Insurance Exchange (OSBIE) statement on playground standards, 2015 (or most current version)
- Ontario Physical Education Safety Guidelines (Ophea)
- The Ontario Building Code



2c. Research Best Practices

- e.g., EcoSchools, Evergreen, etc.

NOTE: This workbook is not meant to be the exclusive resource for your greening project. Please deepen your understanding of the school ground greening process and research creative ideas by investigating the many excellent online resources available. For a list of ideas, including guides from other Boards with useful checklists and planning sheets, please go to the section of this workbook titled: Online Resources.

2d. Site Plan: *Factors to Consider*

- **Green design principles**
- **Impact on facility site operations**
- **Expected maintenance requirements**

Each site has its own unique features – and has both opportunities and constraints. A professional will help guide you through the green design principles that include: consideration of air and water quality; managing storm water runoff, drainage and erosion; reducing the amount of impervious cover, energy conservation factors; reduced heat island effects; use of bio-retention swales; protection of plants, shrubs, trees, and forests; protection of habitat and wildlife; maintaining a focus on sustainability, etc.

2e. Design Concept: *Factors to Consider*

- **Child's developmental and mental health needs**
- **Outdoor learning and curriculum connections** (e.g., Curriculum Documents by subject and grade, First Nation, Métis and Inuit Education Policy Framework, Environmental Education Scope and Sequence documents)
- **Natural materials**
- **Safety and accessibility**

Note: The following section is excerpted from:

Guidelines for School Ground Greening in the Halton District School Board.

TAKE A CHILD-CENTERED APPROACH

Make design decisions with an understanding of children, children's play, and the importance of play in learning and development. Consider the following factors when developing the design concept:

Flexibility: Design spaces that are suggestive, not prescriptive. Ensuring flexibility in use is essential when designing spaces for children's play and learning.

Playfulness: Build in a sense of playfulness, aesthetics and creativity. Express this through both the overall design and in detail through the use of colour, pattern and texture.

Scale: Design elements to be child-oriented and aim for a sense of intimacy. When determining locations of play areas, take advantage of the spatial quality, sense of place and shade created by existing trees.

Diversity: Encourage diversity by creating different spaces and distinct places within the school ground. Create landmarks that function as distinct meeting and playing places for children. Avoid mass repetition of the same feature.



FOCUS ON FUNCTION

Aim to create a functional play space for children that creates a significant impact on learning.

Create Sustainable Gardens: When envisioning a teaching garden on school grounds be inclusive of school staff in the planning and design phase of the project and, as much as possible. Embed the whole process, including the care and stewardship of the gardens, into the curriculum. Design gardens to excite children's senses (theme gardens), for discovery and for formal and informal learning experiences.

Design for Multiple Uses: Elements that can be used and interpreted in many ways are more practical and more challenging to a child's imagination than single-purpose pieces. (e.g. A small hill or berm can be used for play, nature study, gatherings or surveying; musical instruments can be incorporated into a pathway or fencing design; a wall could be designed for ball games, climbing, painting or puppet theatre.)

CONSIDER ENVIRONMENTAL IMPACT

Playgrounds take enormous abuse, and must be rigorously considered in terms of day-to-day maintenance and long-term viability. School ground projects must be designed for resilience to constant use and seasonal change by employing robust materials that can stand the impacts of their success. The following recommendations should guide decisions about project materials:

Use Natural Materials: Whenever possible, use natural materials for their unique and interesting qualities and potential for learning.

Reuse Materials: Try to reuse common materials and make use of them for design elements. For example, make pathways of crushed brick or crushed concrete). Use old barrels, plastic pails, chalk boards, hollow logs and/or recycled wooden raised beds for container gardening.

Plan for Maintenance and Durability: Choose durable, high-quality materials whenever possible. Consider maintenance, long-term sustainability and site-management issues in all design decisions.

BE COGNIZANT OF SAFE SCHOOLS

Ensure the school ground design contributes to a safe space by considering the following points:

Design Predictable Layouts: Enhance site legibility so the layout can be easily understood.

Keep Sight-lines Open: Do not plant trees in locations that would compromise safety by blocking sight lines, security cameras and/or night lighting. Avoid planting low-growing shrubs and other dense plantings next to building walls, parking lots and along the edges of walkways. It is important for people to be able to see ahead along pathways. Similarly, do not locate waste and recycling dumpsters and/or precast concrete storage sheds (bunkers) near walkways.

Space Out Seating: Do not place benches or seating stones right at the edge of walkways. Path users may feel uncomfortable or unsafe to be forced to walk close to people sitting on or gathering at the bench.

Leave Two Ways Out: Make sure there are two ways in and out of fenced areas. Avoid dead-end entrapment zones.

Note: For Information on **accessibility regulations**, refer to Appendix C.
For information on important **safety considerations**, refer to the 'UGDSB Greening Worksheet #3: Safety Considerations' section in this workbook that can also be found on UGShare.

2f. Review Preliminary Design Concept



Contact the Operations Coordinator

Reviewing your draft design with the Board is essential to ensure your project is properly located, that its components follow Board guidelines and to avoid costly oversights.

3 IMPLEMENTING YOUR PROJECT



This stage requires Board approval

3a. Submit Project Request to Plant Operations

Documents required include:

- **UGDSB Outdoor Alterations and Greening form**
(found on UGShare)
- **Site Plan**
- **Concept and/or CAD drawing**
- **Maintenance & Sustainability Plan** (found on UGShare)



Once you have finalized your project concept, you are ready to submit the required documentation to Plant Operations for approval. The project will be assessed for a number of factors including: impact to summer and winter grounds maintenance, impact to stormwater and sewage systems, compliance with playground safety requirements, conflicts with site amenities and portable placements, appropriateness of the maintenance plan and the need for permit and/or site plan applications. Good communication with the Operations Coordinator prior to this point and careful submission of all required forms will minimize delays at the final approval stage.

3b. Gather Cost Estimates

- **Follow Board purchasing policy # 302**
- **Verify proof of WSIB & Insurance**

After completion of the preliminary design concept, it is time to seek out qualified contractors to provide competitive quotes based on the proposed design concept and installation plan. The Board purchasing policy requires competitive quotes are obtained for any project or purchase exceeding \$2,500 in total value regardless of the funding source (e.g., ministry, school

generated fundraising, donation, etc.). This policy helps ensure the Board is cost effectively spending all money for goods and services in a fair and open manner. Competitive quotes help ensure you are receiving “best value” for your money.

A total of 3 written quotes are to be obtained and submitted to the Board’s Purchasing Department. Don’t hesitate to contact the Board’s Purchasing Department (or the Board Operations Coordinator) to provide guidance in finding qualified contractors to quote the required services for your project. For higher value or more complex work that is estimated to be valued over \$15,000, the Purchasing Department should always be contacted for assistance, as the quoting process may need to follow a more formally documented process.

WSIB / General Liability Insurance Requirement for Contractors:

Project work no matter how small or big, basic or complex, can pose a significant liability risk to the Board. Unfortunately, accidents resulting in personal injury and/or property damage happen in our world daily. In order to minimize such risk, the Board only allows contractors with adequate insurance coverage against such risk to perform work on our sites.

It is a mandatory requirement of the Board that any contractor engaging in any form of work on Board premises is required to have applicable Workplace Safety and Insurance Board coverage (WSIB Clearance Certificate) and a comprehensive policy of public liability and property damage with the minimum coverage amounts required by the Board in the Province of Ontario (Commercial General Liability Insurance). It is important to ask a contractor if they can provide this documentation to the Board at the time of quoting as the contractor cannot be considered for any project work if this requirement cannot be met.

If you have any questions surrounding insurance coverage requirements, please contact the Purchasing Department or Plant Operations.

3c. Proceed with Contactor Selection & Project Installation

- **Ensure all policies and guidelines are followed**

Congratulations! Your project plan has been approved and you can now proceed with finalizing the selection of contractor(s) to complete your project, obtaining the required insurance documentation, requesting a written contract (Board purchase order) to be issued, and scheduling the project installation.

Use of Volunteers

Note: You should review UGDSB’s Volunteers Policy #205 and Volunteer Agreement 205-1 to determine safety and liability requirements before agreeing to allow parents or community members to help with the installation of any project.

Obtaining WSIB / General Liability Insurance Documentation from the Contractor:

It is mandatory to have all required insurance documentation on file at the Board office for the selected contractor prior to commencement of work on site.

To obtain this information, request a Board purchase order to be issued for your project (see section “Request for Purchase Order” below) as the Board Purchasing Department will obtain this documentation from the selected contractor on your behalf. They will ensure required

insurance coverage limits are met, mandatory additional insured wording is included and the certificate is uploaded to the Board insurance database for the selected contractor prior to issuance of the purchase order for your project.

If you choose not to have a formal Board purchase order issued for your project (only applicable to work under \$2,500, as otherwise purchase orders are required), you will need to obtain the following documentation from the selected contractor and forward them to the Project Coordinator for review and upload into the Board insurance database:

- Valid WSIB Clearance Certificate
- Current Commercial Liability Insurance Certificate naming the Upper Grand DSB as an Additional Insured

Request for Purchase Order:

A copy of the quote from the selected contractor is to be provided to your Office Coordinator to have a requisition entered into our ordering system (SDS).

The Board Purchasing Department will review the quote and include all relevant project details, add standard Board clauses (e.g., vehicles operating on Board premises, number of contractors allowed at one time on school site) and other pertinent contract information regarding the project on the purchase order and issue to the selected contractor.

NOTE - It is good practice for even smaller component purchases and simple grounds work to have a formal Purchase Order issued by the Board Purchasing department. A purchase order provides another level of liability protection to the Board as it forms a written agreement and requires compliance with the Board's terms and conditions.

4 MAINTAINING YOUR PROJECT

4a. After Project is Completed



This stage requires Board approval

- **Site visit by Operations Coordinator or playground inspector for final approval**
- **Follow maintenance and upkeep schedules**
- **Ensure funding is allocated for yearly maintenance**



Before your new project is open for use by your school community, it must be inspected by the Board or certified inspector. Maintenance of your project will have been incorporated into the design and planning process. Be aware that naturalized playscapes are more involved from a maintenance point of view. A well planned and organized maintenance strategy will protect your investment of energy, resources, time and money. For the first year, any new plantings will need careful tending and watering. Subsequent maintenance activities tend to be seasonal, so be sure to have volunteers (and funding) in place for annual spring clean-ups and fall winding-down procedures.

UGDSB GREENING WORKSHEET #1: Maintenance and Sustainability Plan

Please complete the following chart to outline your plans to maintain your project or structure. Write N/A if the section is not applicable to you. Completing this chart early on in the process may be advantageous to keeping design plans simple to strive for easiest maintenance. The Board recommends reserving 10% of the cost of the project for maintenance each year.

Action	Indicate who will do the maintenance, (P/VP, teachers, students, volunteers, etc.) and specify if resources (tools etc.) and/or school funding is required.
Daily Inspection/ Walkthrough and Documentation	
Ongoing Repair or Cleanup	
Watering/Weeding/ Mulching	
Trimming/Pruning and Replacing of Damaged or Dead Plants	
Maintaining Trails and Pathways	
Annual Spring Cleanup/ Fall Closing	
Summer Maintenance	
Other	

Note: The school is responsible to set aside a yearly budget to cover the costs of ongoing maintenance of the project. If the project is no longer maintained to a level acceptable to the UGDSB, then the area will be restored to the previous condition or to a new acceptable condition determined through consultation with the Principal.

UGDSB GREENING WORKSHEET #2: Educational Goals & Curriculum Links

The educational, social and mental & physical well-being benefits of hands-on, outdoor learning on green school grounds is well documented. Teachers are encouraged to expand their classrooms into the outdoor environment for enriched teaching and learning opportunities.

When planning and designing your school ground project, thought should be given to how the finished product will be used to promote educational goals and link to curriculum expectations. In addition, the school should plan how to communicate these ideas to all staff members and provide them with professional learning to help them to maximize the benefits for all students.

Briefly explain how will your project supports the following (if applicable):

Educational or Curriculum Links	
Developmental needs: e.g., physical, social, cognitive and emotional	
Inquiry-based learning	
Health and Physical Fitness	
Subject-specific curriculum expectations	
Play/recreational/social value	
Other	

Briefly explain how staff will be informed on how to maximize the benefits of your project. (Teachers would be supported in learning about curriculum connections and encouraged to take their classes outdoors for integrated learning in all subject areas.)

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Curriculum Resources: to help teachers extend classroom learning outside, resources can be found on the staff UGshare site under: Environment – Go Green! – ‘Take your Student outside!’

UGDSB GREENING WORKSHEET #3: Safety Considerations

When designing projects for a school yard, there are a number of safety factors to be taken into consideration.

Briefly explain how you have taken the following into consideration

Safety Considerations	
Surfacing (slips and falls)	
Fall Heights	
Materials	
Sight Lines	
Added supervision needs	
School specific playground rules	
Daily inspection for safety concerns (damage, refuse, repair)	
Pinch Points & Entrapment	

The following legislation pertaining to safety needs to be reviewed when undertaking a school ground project:

May include but not limited to:

- Ophea Ontario Physical Education Safety Guidelines
- OSBIE Playgrounds Standards
- CAN/CSA-Z614-14 Children's Play Spaces and Equipment Standards
- Accessibility for Ontarians with Disabilities Act (AODA)
- Integrated Accessibility Standards Regulation, Ont. Reg. 191/11 (Outdoor Play Spaces)
- CAN/CSA-Z614 Annex H Guidebook (Children's play spaces and equipment that are accessible to persons with disabilities)
- The Ontario Building Code

UGDSB SCHOOL GROUND GREENING RESOURCES AND FORMS (ON UGSHARE)

1. School Ground Greening Planning Chart
2. Outdoor Alterations and Greening form
3. Maintenance and Sustainability Plan worksheet
4. Guidelines for Smaller School Ground Projects not requiring a Greening Form



ONLINE RESOURCES

This workbook is not meant to be the exclusive resource for your greening project. Please deepen your understanding of the school ground greening process and research creative ideas by investigating the following excellent online resources:

- **Evergreen:** *All Hands in the Dirt: A Guide to Designing and Creating Natural School Grounds*
- **Evergreen:** *Designing for Shade on Your School Ground*
- **Evergreen:** *Grounds for Action: Promoting Physical Activity through School Ground Greening in Canada*
- **Evergreen:** *The Learning Grounds Guide for Schools*
- **Greater Essex County District School Board:** *School Ground Greening Workbook*
- **Halton District School Board:** *Guidelines for School Ground Greening*
- **Ontario EcoSchools:** *School Ground Greening: Designing for Shade and Energy Conservation Guide*
- **Waterloo Region Shade Work Group:** *Shade Audit Information Guide + Tool: A Guide for Creating Shady Outdoor Spaces*
- **TDSB and Evergreen:** *Landscape and Child Development: A Design Guide for Early Years-Kindergarten Play learning Environments* (Second Edition 2013)
- **TD FEF & Focus on Forests:** *Building Outdoor Classrooms: a guide for successful fundraising*

ONLINE FUNDING SOURCES OR GRANTS

1. EcoSchools Funding Opportunities Website
2. TD Friends of the Environment
3. Toyota Evergreen Learning Grounds Grant
4. UGDSB 'Green Up Your School Grant' (on UGshare)



Appendix A

UGDSB GUIDELINES AND SPECIFICATIONS

The following design and technical guidelines are based on best practices to offer additional background based on successful projects. These guidelines do not override any legislative or technical code or standards.

TREE PLANTING GUIDELINES

Species Selection

Native species are recommended on school grounds for a number of reasons. Not only are native species hardier for the tough growing conditions found in school grounds, but planting native species of trees, shrubs, and wildflowers:

- Replaces natural communities that have been destroyed in urban centres.
- Provides an educational resource on school grounds.



There may be rare instances where a non-native species may be selected to address a particular condition. In these cases, it is suggested that you:

- i. Ensure that the non-native is non-invasive and that it will not spread into nearby natural habitats (e.g., Norway maple, Periwinkle, Goutweed, Lily of the Valley);
- ii. Use non-natives in a separate garden from native species.
- iii. In areas around buildings or access routes, select columnar or dwarf species that are cultivars of native species or non-invasive non-native species (i.e., pyramidal oak) so that maintenance does not become a problem.

Select species that do not have thorns, berries, or other fruit or nuts to reduce the likelihood of throwing objects, or increased maintenance requirements. Species should be low-pollinating, have no toxic fruit and not be a noxious weed. Additional consideration should be taken for allergy related species along with species that attract increased amount of bees and wasps. Species should have limited debris which falls and may cause health and safety concerns or excessive clean-up requirements.

Bushes/shrubs should only be placed in areas where line of sight issues are not a concern.

Tree Placement

Increasingly, as shade becomes a higher priority on school grounds, we need to address proper tree location and planting distances from built objects and sports fields. Such placement guidelines must be met, as they ensure student safety, keep fire routes open, and allow essential maintenance, such as snow removal or snow storage areas, to occur while giving the tree the best chance to grow. A large shade tree requires a very generous soil zone for the best chance of growth (an optimum 30 m³ of soil). Avoid planting trees in areas of potential building or parking lot expansion or portable installation or access routes. Avoid planting on septic beds.

In the following guidelines, distances are measured as a radius:

Planting of trees should not be located in close proximity to buildings, walkways, etc. as follows:

- 2 m from a bench, seating stone or rock
- 2 m from fence or asphalt area and walkways
- 7 m from a building
- 7m fence of an adjacent residential neighbour
- 7 m from a running track; no trees should be planted inside track area
- 5-7 m from other trees
- 6 m from soccer and football boundary lines
- 6 m from a fire hydrant
- 7 m from a flag pole
- 3m from aboveground or underground utilities

If trees are being planted in areas where there is a threat of salt damage, the following provisions are recommended:

- Choose salt-tolerant species.
- Routine watering of the soil to flush the accumulated salts
- Plant trees in a large planting bed with a border.

With any planting beds, it is best to use smaller varieties of trees, such as Amelanchier or prunus, and special attention to watering is required. Most species of tree will not do well in a raised planter.

Tree Size Selection

Guidelines for the size of trees help to ensure their survival and the success of your project. Especially in the following areas, it is recommended that trees meet minimum size requirements to protect against vandalism:

- Active play areas (asphalt play areas, edges of sports fields, high traffic or compacted soil areas, near play structures)
- Meet and greet areas (drop-off and pick-up locations)
- Small and large seating areas (benches, armour rock seating areas.)

Deciduous Trees

Trees should be a minimum of 70 mm caliber (trunk width), and measure 2.1 to 2.7 m (7 to 9 feet) to the lowest branches.

Coniferous Trees

Trees should be a minimum of 2.5 m (8 feet) tall.

Tree Protection Guidelines

Where there is concern for the life of the tree due to vandalism or damage to the bark, the tree trunk could be protected with the following materials:

- A temporary wire-mesh caging (1.5 metres) secured with 4 galvanized t-bars around the trunk of the tree.
- Orange or black plastic snow fencing wrapped loosely around the trunk and secured with clips.

Staking Trees

The process of staking trees has become a debate amongst arborists. Lee Reich in *Fine Gardening* states: “Staking a tree that does not need it can do more harm than good. Movement of the trunk helps strengthen it by thickening it and giving it taper from bottom to top. Trunk movement also stimulates root growth. So although staked trees might grow taller faster than their unstaked counterparts, their trunks are weaker and their root systems are less developed.”

In some situations, however, staking is still recommended: trees that are exposed to strong winds; trees that are in open sites and tall trees with small root balls. Done properly, staking trees will support the trunk in a vertical position until the roots are well established. Stakes should be removed after one to two years or after signs of growth in the crown.

Note: For details on the proper protection or staking of trees, refer to Evergreen’s guidelines as outlined in Halton District School Board’s *Guidelines for School Ground Greening*.

Avoiding Soil Compaction

Soil compaction is a problem that needs to be considered with new tree plantings, as this will easily kill the tree in heavily trafficked areas, such as kindergarten yards. Design considerations include separating traffic from plantings, selecting compaction-tolerant tree species and mulching a wide area (minimum 5 foot) under the tree with 6 to 10 inches of wood-chip mulch to distribute the compactive forces over a larger area.

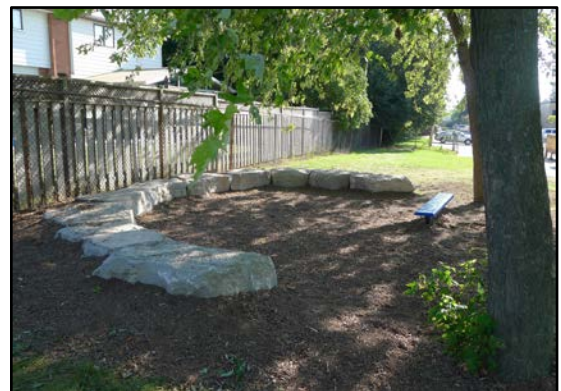
Use and Placement of Logs and Rocks

Logs

- Do not use logs that come from areas of termite populations
- Do not use logs from old or sick trees that have been felled. These logs attract wasps, rot quickly, and can spread any disease to other trees on your grounds.
- Use logs from hardy tree sources, such as maple or oak, to ensure longevity.
- Fasten or trench any large logs that could pose a risk to student safety.
- Do not place unsecured logs any closer than 1.5 metres apart to avoid students jumping from one to the other.

Rocks

- Armour stone has been used successfully on school grounds for informal seating. The following are guidelines for placement:
- Ensure height is comfortable for students to sit on (no higher than 18 inches.) (Playground Standards.) This becomes a designated “play surface” with various requirements.
- Place rocks either right against each other or leave 1.5 to 2 metres between them to avoid students jumping from one to the other.
- Rocks that are placed directly adjacent to each other should meet at the same height and form a flat platform and should not have pinch zones.



Berms/Hills

Hills should be low and gradual (i.e., slightly less than a metre with a gradual run.) Some berms are hard to maintain, run a high risk of wear (turning into dirt mounds), and may pose grass cutting problems. Also consider effects that a berm could have on drainage.

Pathway Material and Widths

All paths on school grounds should be built with accessibility in mind. The exception may be natural trails of woodchips through wooded or natural habitat areas. In these cases, adhere to the minimum widths for accessibility and use mulch (fine or shredded wood chips) for easier mobility.

- Materials should be non-slip asphalt, concrete, or stone dust.
- Minimum width should be 1524 mm (60 inches) for single use. This size should be doubled for two wheelchairs to pass. For single use only, a passing space should be provided every 30 metres. This space will increase the width of the path in those areas to 185 centimetres.
- Headroom of at least 2032 mm (80 inches) must be provided along the entire length of the path.

Water Features

There has been concern expressed over standing water in our jurisdiction from both a student safety perspective and as a breeding ground for the West Nile Virus. Therefore no permanent open, standing water features can be approved in a design submission. However, feel free to be creative in encouraging water activities where materials can be set up on a temporary basis to allow water play when needed.

Structures and Other Built Objects

Some wooden structures, such as gazebos, lattice, play equipment, etc. can cause concern for vandalism as well as safety concerns. All structures and built objects must be approved by Plant Operations and CAD drawings of structures may be necessary when submitting documentation to the Board. Be aware that some wooden structures require consultant and permit costs and ensure that funding has been allocated for this purpose in the project budget.



Appendix B

GUIDELINES FOR SMALLER SCHOOL GROUND PROJECTS NOT REQUIRING A GREENING FORM

PROCEDURE FOR: BENCHES, LOG SEATING, COMPOSTERS, VEGETABLE GARDENS, STOCK TANKS OR CONTAINERS, NO MOW ZONES, POLLINATOR GARDENS, SANDBOXES (unless it's excavated), A FEW SCATTERED ARMOUR ROCKS FOR SEATING, BIRDFEEDERS, NESTING BOXES OR BAT BOXES, ETC.



1 STEP ONE: Go to UGshare to review your school's site map, and to carefully review the one-page information guideline for your specific project

On UGshare, find your school's site plan to ensure your project does not impede grounds maintenance, snowploughs, septic beds, or is inadvertently put in the location of a future portable site. (If your school's map is not up to date or you have some questions, please contact the Operations Department for assistance.) Also review the helpful one page 'Guidelines for Smaller School Ground Projects' for your specific initiative.

2 STEP TWO:

If needed, contact the Purchasing Department for help sourcing the item. Any purchase over \$2,500 requires three written quotes. Note: It is good practice to use a P.O. to purchase even smaller items, to be covered by the Board's terms and conditions.

3 STEP THREE: Call before you dig!

Any breaching of the surface layer (even benches need securing) requires that you call before you dig to locate underground wires. Request your free locate online <http://www.on1call.com/> or call 1-800-400-2255

4 STEP FOUR: Consider the maintenance plan for your project and put funding and resources in place before you begin.



Appendix C

SUMMARY OF ACCESSIBILITY REQUIREMENTS

A regulation has come into effect that impacts schools:

Accessibility for Ontarians with Disabilities Act, 2005

ONTARIO REGULATION 191/11, INTEGRATED ACCESSIBILITY STANDARDS

Outdoor Play Spaces - Section 80.18 - 80.20 applies to:

“newly constructed and redeveloped outdoor play spaces includes play equipment, such as swings, or features such as logs, rocks, sand or water, where the equipment or features are designed and placed to provide play opportunities and experiences for children and caregivers”.

When constructing new or redeveloping existing outdoor play spaces, obligated organizations, shall:

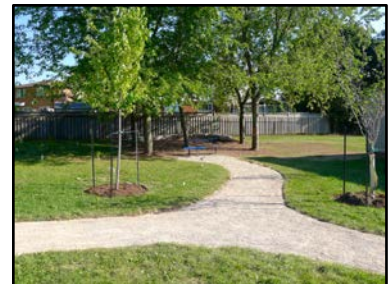
(s. 80.19)

- a. consult on the needs of children and caregivers with various disabilities
- s. 80.20
- a. incorporate accessibility features such as, but not limited to, sensory and active play components for children and caregivers with various disabilities;
- b. ensure that outdoor play spaces have a ground surface that is firm, stable and has impact attenuating properties for injury prevention and sufficient clearance to provide children and caregivers with various disabilities the ability to move through, in and around the outdoor play space

Exterior paths of travel that serve a functional purpose shall:

(s. 80.23)

1. have a minimum clear width of 1,524 mm
2. the surface must be firm and stable
3. the surface must be slip resistant.



Note: The Board is recommending engineered wood fiber as accessible surfacing for play structures.

For further information on accessibility requirements, please refer to the following resources:

Integrated Accessibility Standards Regulation, Ont. Reg. 191/11 (Outdoor Play Spaces section)
<http://www.ontario.ca/laws/regulation/110191>

CAN/CSA-Z614 Annex H Guidebook (Children’s Play Spaces and Equipment that are Accessible to Persons with Disabilities)

<http://lin.ca/sites/default/files/attachments/AnnexHGuide2014final.pdf>

A Guide to the Integrated Accessibility Standards Regulation

<http://www.mcsc.gov.on.ca/documents/en/mcsc/accessibility/CombinedEnglishDocumentsIASR-02%20FINAL-s.pdf>

Pathways to Recreation: Learning about Ontario’s Accessibility Standard for the Design of Public Spaces Guidebook

http://www.prontario.org/index.php/ci_id/9179.htm

Appendix D

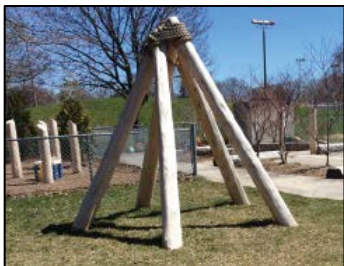
BEST PRACTICES FOR A KINDERGARTEN YARD

A Kindergarten yard should provide a creative and imaginative learning environment. The Ministry document: ***The Kindergarten Program, 2016*** states: “*The learning environment extends to the outdoors. A growing body of research suggests that connecting to the natural world contributes to children’s mental, physical, emotional, and spiritual health and well-being (Louv, 2005). The learning that takes place in classroom experiences can be explored in the “extended classroom” that nature provides.*” (p. 34)

It is important to incorporate a variety of features within an outdoor learning environment. Variety within your plan will help to contribute to multiple forms of learning and play, all while providing meaningful activities and opportunities for every student.

Suggestions for a Kindergarten yard include:

- Mulched surfaces
- Large caliper trees for shade
- Storage bunker
- Sand Play (always a must)
- Stump seating
- Play Table
- Log benches
- FDK Kitchen / Mud Kitchen
- Play Posts
- Corduroy bridge
- Stage
- Wood Teepee
- Shade Sails
- Loose parts



Appreciation is given to the members of the UGDSB School Ground Greening Committee for their contributions and support in the creation of this School Ground Greening Workbook.



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