

Choosing effective locations for your shade trees

Consider the movement of the sun, and make sure that the shade is *where you want it when you want it*.

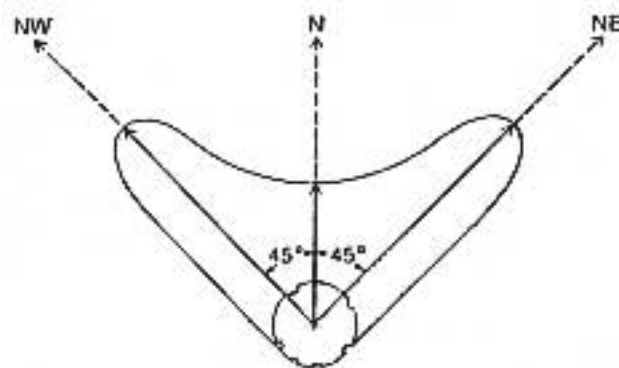
Tree shadow template -

Where does the shade fall?

Use the tree shadow template below to see what direction the shade is being cast by the trees you are planting. This will help you determine where seating should be placed and if the shade will be cast where you want it when you want it (i.e., during peak sun periods).

To determine the tree shadow:

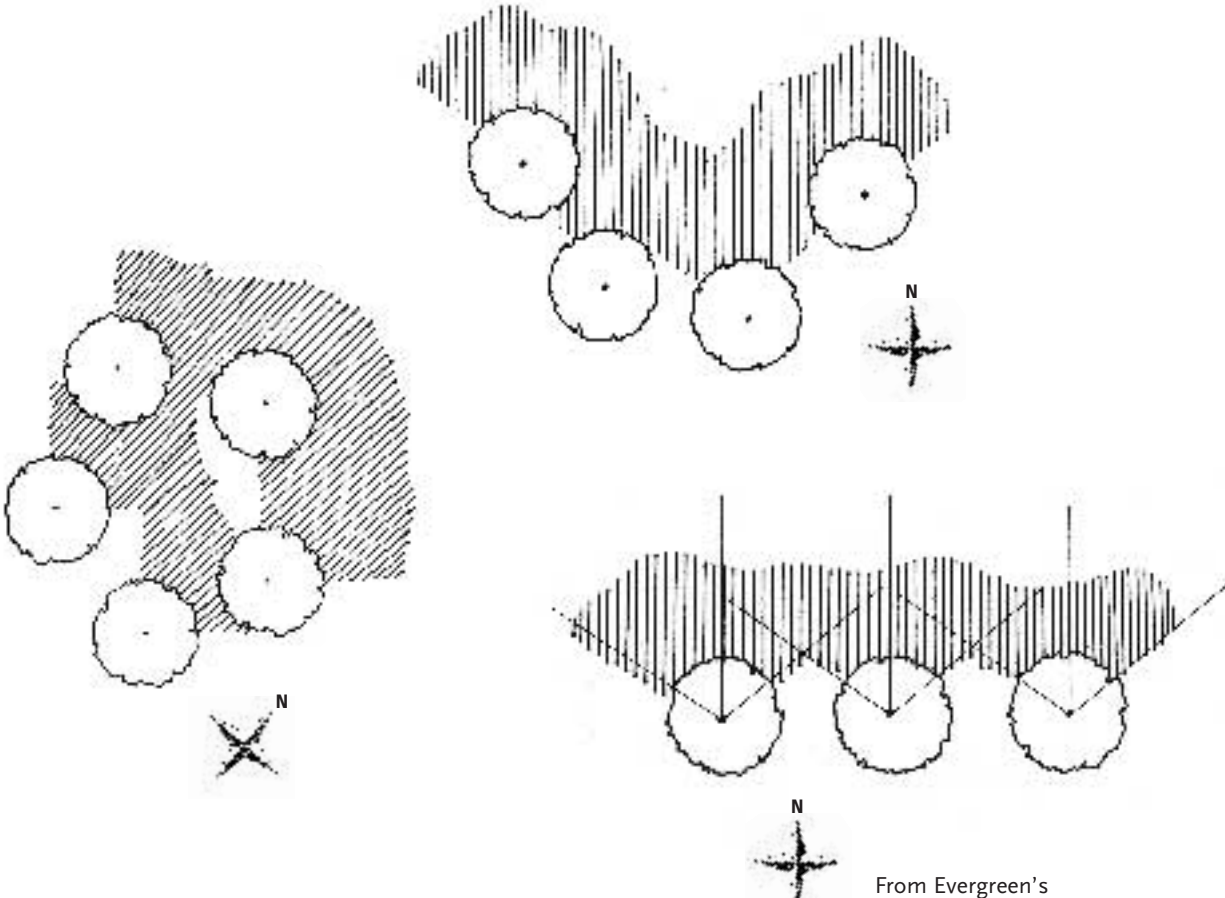
1. Place a circle on your site map to represent the tree.
2. Draw a line from the center of the tree toward North on the map.
3. Place two more lines at a 45° angle from the centre line.
4. The shade from the tree will fall between the 45° angles at noon.



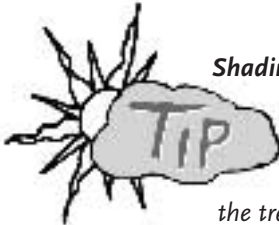
When planning for shade consider these questions...

- ✦ *Where and at what time of day will the shade be cast?*
- ✦ *Where does the shade of neighbouring trees fall? Will this affect the trees you are planting?*
- ✦ *Are there any obstructions overhead? Will your trees grow into these?*
- ✦ *Will the tree's canopy hang over a neighbour's yard?*
- ✦ *Are you choosing nut trees? Check to see if your Board has a policy prohibiting the planting of nut trees because of allergies.*
- ✦ *Are there obstructions underground (i.e., utility pipes or wires)? Refer to your site plan.*

Plant trees in a configuration to maximize shade



From Evergreen's Learning Grounds Guide for Elementary Schools



Shading Hills and Berms
Students love hills and berms and many schools want to plant trees on them. Keep hills under 90 cm with gradual slopes of 20-25% and plant the trees on flat ground at the base of the slope.

Ontario

school ground
GREENING | GUIDE



DESIGNING FOR SHADE
AND ENERGY CONSERVATION



ecoschools

Acknowledgements

This guide is an adaptation of the EcoSchools *School Ground Greening Guide: Designing for Shade and Energy Conservation* published by the Toronto District School Board (TDSB) and Evergreen. The TDSB and Evergreen have donated this resource to the Ontario EcoSchools program as part of their in-kind contribution to the project.

The Government of Canada's Climate Change Action Fund provided major funding for Ontario EcoSchools. Please see back cover for more information on all of the partners involved in the development of the program.

Ontario EcoSchools School Ground Greening: Designing for Shade and Energy Conservation Guide

Project Concept: Heidi Campbell, Toronto District School Board and Evergreen; Richard Christie, Toronto District School Board

Writer: Heidi Campbell, Toronto District School Board and Evergreen

Developers: Krista Long, Evergreen; Maureen Whitehead, Toronto District School Board (retired)

Technical Consultant: Bruce Day, Toronto District School Board

Editors: Eleanor Dudar, Toronto District School Board; Catherine Mahler; Denny Manchee, Evergreen

Adaptation: Catherine Mahler

Illustrations: Samara Newman

Photography: Heidi Campbell; Cam Collyer

Schools in photos: Cassandra PS; Indian Road Crescent Jr PS; Jesse Ketchum PS; Wilkinson PS, all Toronto DSB

Reviewers: Mike Achilles, Toronto DSB; Ron Ballentine, Halton DSB; Edward Cheskey, Waterloo Region DSB;

Richard Christie, Toronto DSB; Bruce Day, Toronto DSB; Judy Gould, Durham DSB; Arlene Higgins-Wright,

York Region DSB; Eva Pathak; David Percival, Toronto DSB; Donna Rice, Toronto DSB; John Scherk, Toronto DSB

© 2004 Toronto District School Board and Evergreen

Ontario schools, school boards, post-secondary institutions and government agencies may reproduce and adapt this publication in whole or in part for educational purposes without special permission from the copyright holders, as long as acknowledgement of the source is provided.

No use of this publication may be made for resale or for any other commercial purposes whatsoever without prior permission in writing from both copyright holders:

Toronto District School Board
Library and Learning Resources
3 Tippett Road
Toronto, ON M3H 2V1
Tel: (416) 397-2595
Fax: (416) 395-8357
Email: curriculumdocs@tdsb.on.ca

Evergreen
355 Adelaide St. West, 5th Floor
Toronto, ON M5V 1S2
Tel: (416) 596-1495
Email: info@evergreen.ca

Every reasonable precaution has been taken to trace the owners of copyrighted material and to make due acknowledgement. Any omission will gladly be rectified in future printings.

Designer: Comet art + design