



#### 4.7 Energy conservation: site

Buffers established with appropriate plants in the correct locations can yield annual energy savings of 10 to 40 percent. The key design issues are to manage for shade and wind.

##### Managing shade

- For cooling, maximize shade on west and east walls and roof.
- Trees planted to the southeast, south, or southwest will only shade a building in the summer if they extend out over the roof. These trees should be deciduous and pruned up to allow winter sun into windows.
- Plan for maximum shade at warmest part of year and minimum shade at coldest (see section 5.6).
- Consider the plantings final height and form, branching density, and the leaf-on and -off periods.

##### Managing wind

- For heating, locate a dense evergreen windbreak 2 to 4 tree heights upwind of the building.
- For heating, a windbreak should not be pruned up. Stagger planting rows to prevent gaps in case a tree dies.
- If drifting snow is an issue, locate another windbreak upwind of the first windbreak (see section 5.7).
- For cooling, maintain an open understory to allow for ventilation by summer breezes (which are from a different direction than winter winds - see diagram).

#### 4.7 References

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