

DOWNTOWN URBAN FORM PROJECT
DRAFT Sustainability Standards, August 29, 2007
High Rise Districts (Evans Churchill, Van Buren, Bio-Tech)
Mid Rise Districts

Benchmark Comfort Standards

- SET 100° F for typical, shaded pedestrian areas such as sidewalks
- SET 95° F for "cool island" locations (pocket parks, building entrances etc.)

Shading – Ground Level

Shade is measured at solar noon on the summer solstice

Shade from trees and 50% open shade fabric is considered as full shade

- 75% of the sidewalk area measured from the building to curb is to be shaded at solar noon on the summer solstice. A minimum of 50% of this area is to be shaded with trees, perforated metal or trellis type shading. Shade cast from adjacent buildings can be counted towards the total.
- 50% of accessible open space area located on private property is to be shaded. Shade from adjacent buildings or structures can be counted towards the total. A minimum of 25% of the shaded area is to be trees or trellis vines.
- 50% of surface parking lots to be covered by shade structures or tree canopy (after 5 years)
- 100% of ground surface at building entrances
- Shade over road intersections and mid-block crossings over major streets

Shading – Building Walls Addressing Streets and Publicly Accessible Spaces Less than 90' in Height

50% Perforated metal or open weave material is considered as full shade for the following:

- 50% of the south facing wall surface is to be shaded at solar noon on the summer solstice.

Shading – Roofs

- 50% of habitable roof areas (including parking decks) are to be shaded at solar noon on the summer solstice. 25% of the shaded area is to be trees or trellis vines.
- Roof shade can take the form of photo voltaic panels.

Water Features

- Accessible open spaces such as courtyards or plazas will include a water feature.
- Water features will be designed to optimize thermal comfort by wetting large surface, introducing moisture into the air through sprays or intermittent jets. Large quantities of flowing water are discouraged.
- Water features to be located in semi-enclosed areas to contain cool air.

Ground Cover

- 30% of publicly accessible plaza areas larger than 5,000 sf to be continuously planted ground cover (grass, vines etc.)

Paving

- Street parking areas and street tree planting zones will be paved with permeable concrete or interlocking pavers with a minimum open area of 12%. Paving material to achieve a minimum SRI of 35.
- Sidewalks and plaza areas to be sand set, pre-cast concrete pavers (2" thick, 5,000 psi) with a minimum SRI of 35.
- Traffic areas of streets to be rubberized asphalt with light colored aggregate. (Minimum SRI?)

Roofing Material

| Roof Type | Slope | SRI |
|-------------------|-------|-----|
| Low sloped roof | >2:12 | 78 |
| Steep-sloped roof | <2:12 | 29 |

- Use roofing material having an SRI equal to or greater than the values in the table above for a minimum of 75% of the roof surface. A vegetative roof can be used in lieu of an SRI roof.
- Note trellis shading requirement above.

Wall Materials

Wall materials to be light colored materials with smooth surfaces with the ability emit heat to the surrounding environment. (High levels of reflectivity and emissivity).

Wall materials below 90': 50% minimum light colored, smooth, high mass materials with convective "rain screen" air space or open, well ventilated area behind with a minimum reflective index of .4. High mass examples include 4" nominal brick, 2" nominal high density concrete and 2" nominal stone

Recommended wall materials above 90': Light colored, smooth textured, low mass or thin, high density materials such as metal panels with convective "rain screen" air space to release any accumulated heat in order to reduce surface temperature.

Green Walls

- Green walls are encouraged to reduce excessive radiant heat accumulation in pedestrian areas receiving excessive sunlight.

Shading Materials

- Where possible, shading materials for trellises and canopies to be made of low mass, non conductive materials. When used, metal is to be coated with a light colored, infrared reflective paint. Large shading surfaces such as shade cloth to be 50% open to encourage evening cooling.