



III. KIT OF PARTS OVERVIEW

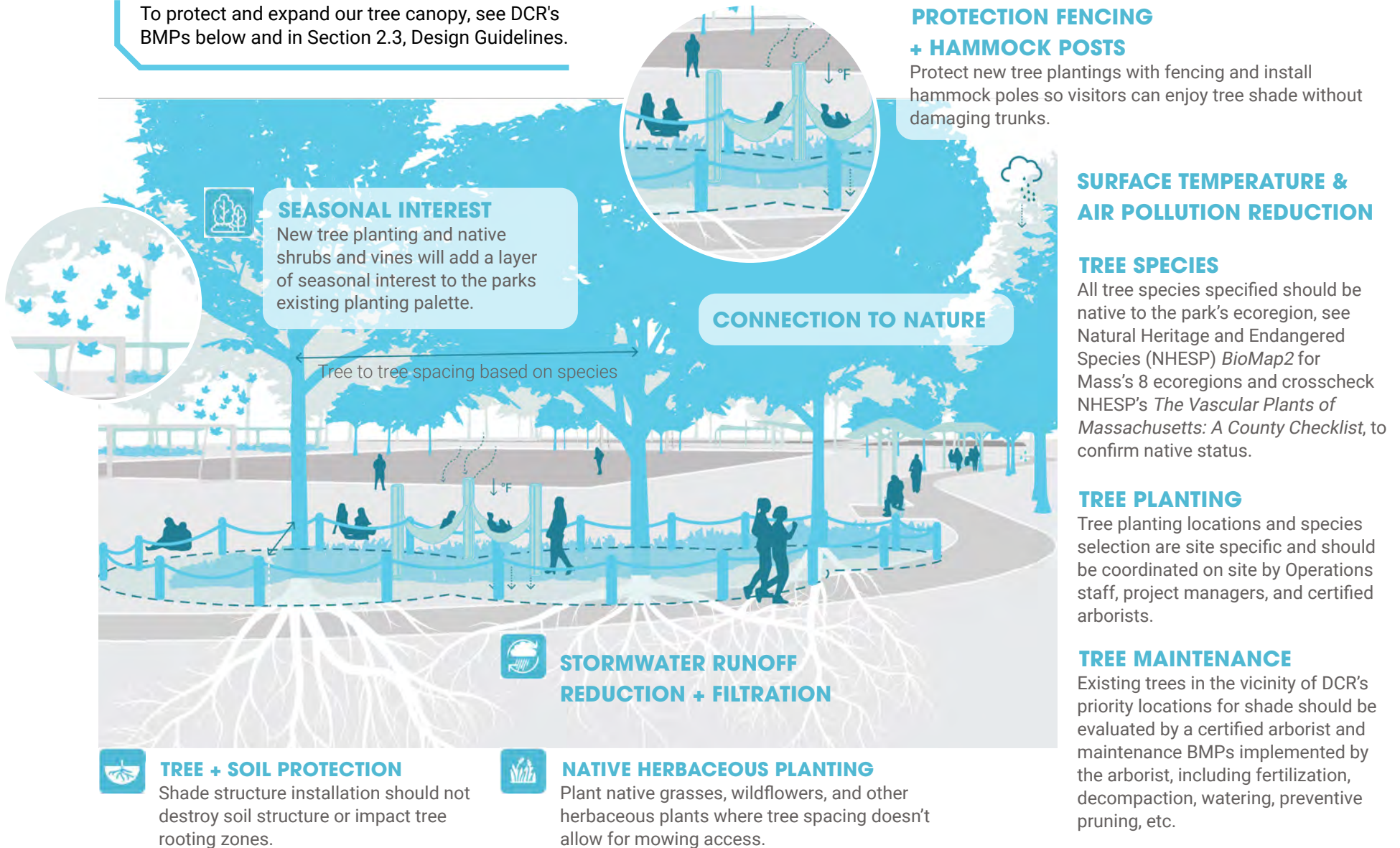
- 3.1 TREE CANOPY*
- 3.2 PAVILION
- 3.3 BENCH SHELTER
- 3.4 CANOPY
- 3.5 AWNING
- 3.6 UMBRELLAS
- 3.7 GAZEBO
- 3.8 PERGOLA
- 3.9 SOLAR CHARGING SHELTER

*See Section 2, Design Guidelines for the importance of native canopy trees, BMPs to protect them and MP to protect them.



3.1 TREE CANOPY

To protect and expand our tree canopy, see DCR's BMPs below and in Section 2.3, Design Guidelines.

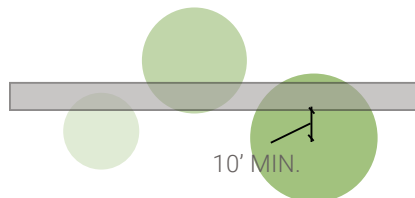


3.1 TREE CANOPY

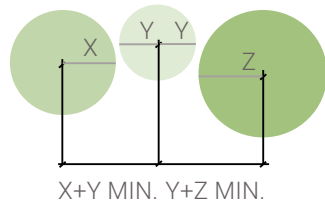
Critical natural resource and priority shade intervention

TREE SPACING:

Min. distance from face of walkway: 10' min.



Min. distance apart= sum of radii of both tree canopies



ADDITIONAL PLANTING CONSIDERATIONS:

- Direction of the sun
- Growth rate of proposed trees
- Soil type/quality
- Provide understory plants for habitat and interest under the proposed shade tree where appropriate.

GENERAL CONDITIONS, MIXED SIZES, GROWTH RATES, FALL COLORS

MIN.
MATURE
HEIGHT
>45'

WHITE BIRCH (*Betula papyrifera*)*
SHAGBARK HICKORY (*Carya ovata*)
TULIP TREE (*Liriodendron tulipifera*)
RED OAK (*Quercus rubra*)

35'-45'

RED MAPLE (*Acer rubrum*)
HACKBERRY (*Celtis occidentalis*)

<35'

BLACK GUM (*Nyssa sylvatica*)

URBAN CONDITIONS, AIR POLLUTION

MIN.
MATURE
HEIGHT
>45'

SCARLET OAK (*Quercus coccinea*)
RED OAK (*Quercus rubra*)

35'-45'

RED MAPLE (*Acer rubrum*)
HACKBERRY (*Celtis occidentalis*)

<35'

BLACK GUM (*Nyssa sylvatica*)

MEDIUM-WET CONDITIONS, LOW, CONSTANTLY WET AREAS

MIN.
MATURE
HEIGHT
>45'

YELLOW BIRCH (*Betula allegheniensis*)
WHITE BIRCH (*Betula papyrifera*)
SWAMP WHITE OAK (*Quercus bicolor*)

35'-45'

RED MAPLE (*Acer rubrum*)
HACKBERRY (*Celtis occidentalis*)

<35'

BLACK GUM (*Nyssa sylvatica*)

DRY-MEDIUM CONDITIONS DROUGHT CONDITIONS

MIN.
MATURE
HEIGHT
>45'

SHAGBARK HICKORY (*Carya ovata*)
WHITE OAK (*Quercus alba*)
SCARLET OAK (*Quercus coccinea*)
RED OAK (*Quercus rubra*)

<35'

BLACK GUM (*Nyssa sylvatica*)
HOP HORNBEAM (*Ostrya virginiana*)

*Note: The species listed are example species; all tree species specified should be native to the park's ecoregion.

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3.2 PAVILION

In large parks, adjacent to grassy fields, consider the placement of a large pavilion for big groups. Size the pavilion and design the accessible route, stormwater runoff, and utilities (water/ power) to meet DCR's climate resilience goals and to protect the natural features of the park. Install a rooftop solar array to power music, devices and electric grills. Coordinate DCR policy for use (first come, first serve or by reservation). Different parks have different pavilion styles including octagonal structures; match existing design elements whenever possible, including roof color and materials.



STORM-WATER MANAGEMENT

Adjacent plant beds provide storage for storm-water recharge, creating a sustainable and attractive rainwater management solution.



SOLAR ENERGY

Provides a comfortable and functional shaded seating area while also promoting sustainability. The solar panels power the charging stations, reducing the need for grid electricity.



SOCIAL GATHERING

Provides a comfortable, shaded space for community gathering. The large footprint allows for a variety of layouts that can support a large range of community events.



ACCESSIBLE TO ALL

Level landings adjacent to pavilion allow for a larger accessible surface and improved user safety.



3.2A RECTANGULAR PAVILION

Picnic / Gathering Space
Large-Scale - Linear

SIZE:

- Small - 20'x30'
- Medium - 30'x48'
- Large - 40'x80'

ROOF OPTION:

- Gable roof

MATERIALS:

- Wood frame
- Shingle roof
- Composite slate

ROOF COLOR:

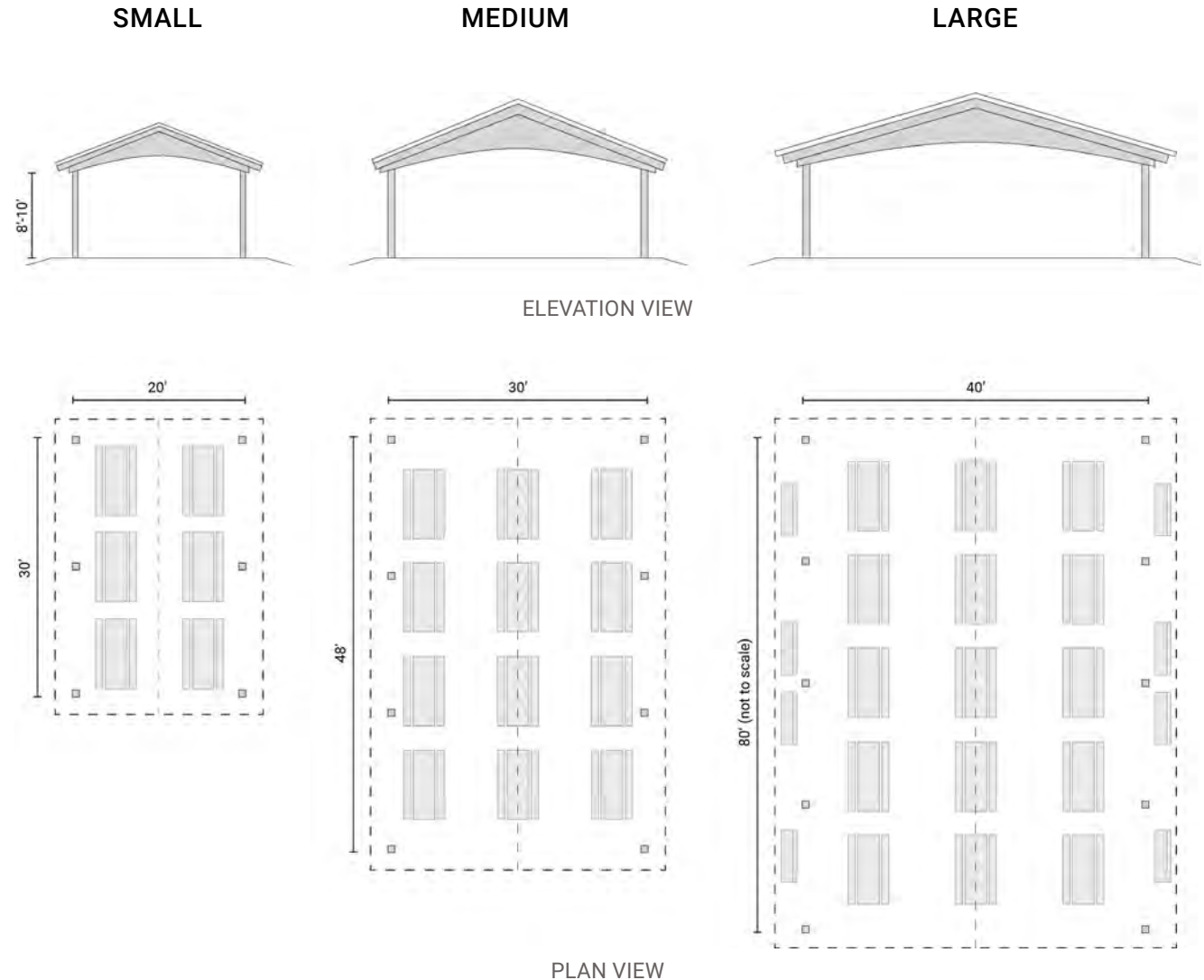
- Matching existing
- Grey-green

ACCESSIBLE SURFACE TREATMENT:

- Concrete
- Permeable pavers
- Stabilized soil

SITE FURNISHINGS:

- DCR standard picnic tables
- DCR perimeter benches



Note: Picnic table and bench arrangement diagrammatic only.
 Place site furnishings to enhance views, allow ease of movement and provide flexibility for event programming.

3.2B OCTAGONAL PAVILION

Picnic / Social Gathering

Large-Scale

No Railings

SIZE:

- 30'-40' Dia.

ROOF OPTION:

- Hip roof
- Tiered roof

MATERIALS:

- Wood frame
- Shingle roof
- Composite slate

ACCESSIBLE SURFACE TREATMENT:

- Concrete
- Permeable pavers
- Stabilized soil

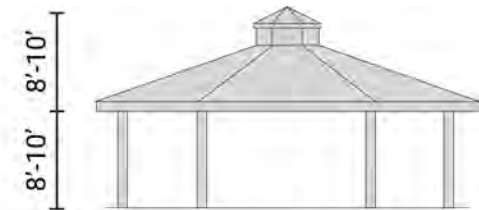
SITE FURNISHINGS:

- May incorporate DCR standard tables and/or perimeter benches, as appropriate

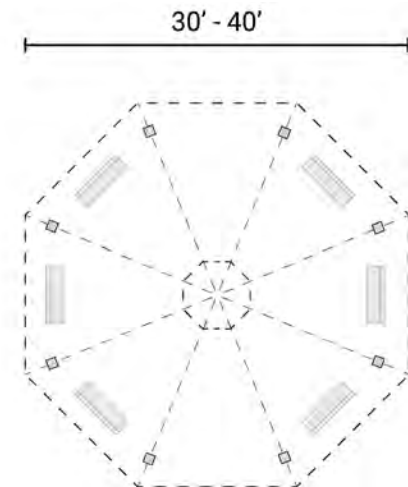
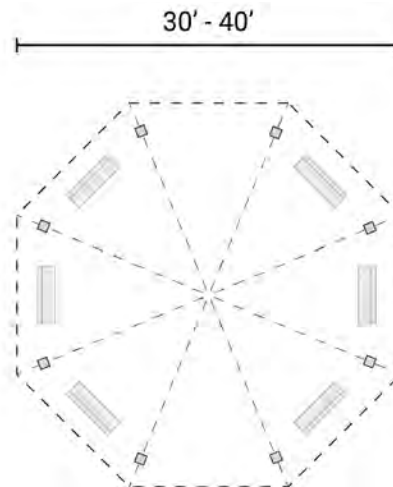
HIP ROOF



TIERED ROOF



ELEVATION VIEW



PLAN VIEW

Note: Bench arrangement diagrammatic only. Place site furnishings to enhance views, allow ease of movement and provide flexibility for event programming.

3.3 BENCH SHELTER

Bench shelters are part of iconic DCR parkways and parks like the Esplanade. Be careful to place shelters where they do not block views or informal recreation like pick up soccer or frisbee. Again, several variations exist, be careful to match existing, including roof colors and materials.



SEASONAL INTEREST

New tree planting increases shade opportunities as well as adding to the seasonal interest of the park.



SOCIAL GATHERING

Gives users the opportunity to socialize while enjoying a small shaded area.



ACCESSIBLE TO ALL

Companion spaces are provided next to benches, providing accessible and inclusive seating for all.

3.3 BENCH SHELTER

*Walkway-adjacent covered
seating/trailheads
Small-scale*

ROOF OPTION:

- Hip roof
- Gable roof

MATERIALS:

- Wood frame
- Shingle roof
- Composite slate

ROOF COLOR:

- Matching existing
- Grey-green

ACCESSIBLE SURFACE TREATMENT:

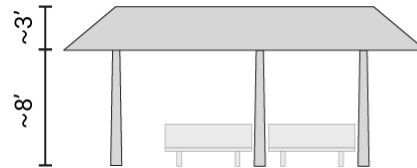
- Concrete
- Permeable pavers
- Stabilized soil

SITE FURNISHINGS:

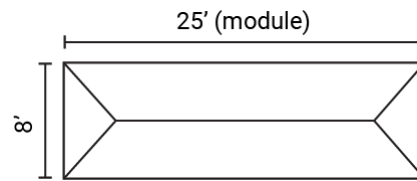
- DCR standard benches

ROOF OPTIONS:

HIP ROOF

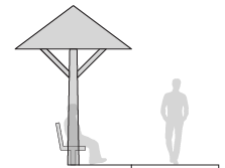
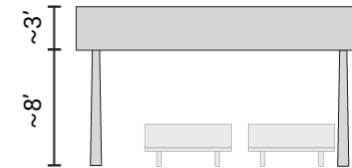


ELEVATION VIEW

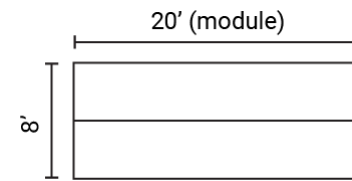


PLAN VIEW

GABLE ROOF

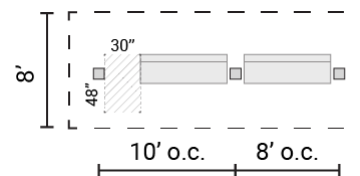


SIDE ELEVATION



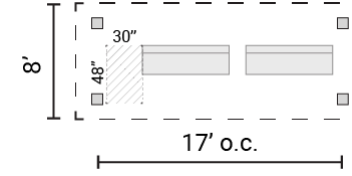
COLUMN OPTIONS:

CENTER POST



PLAN VIEW

CORNER POST



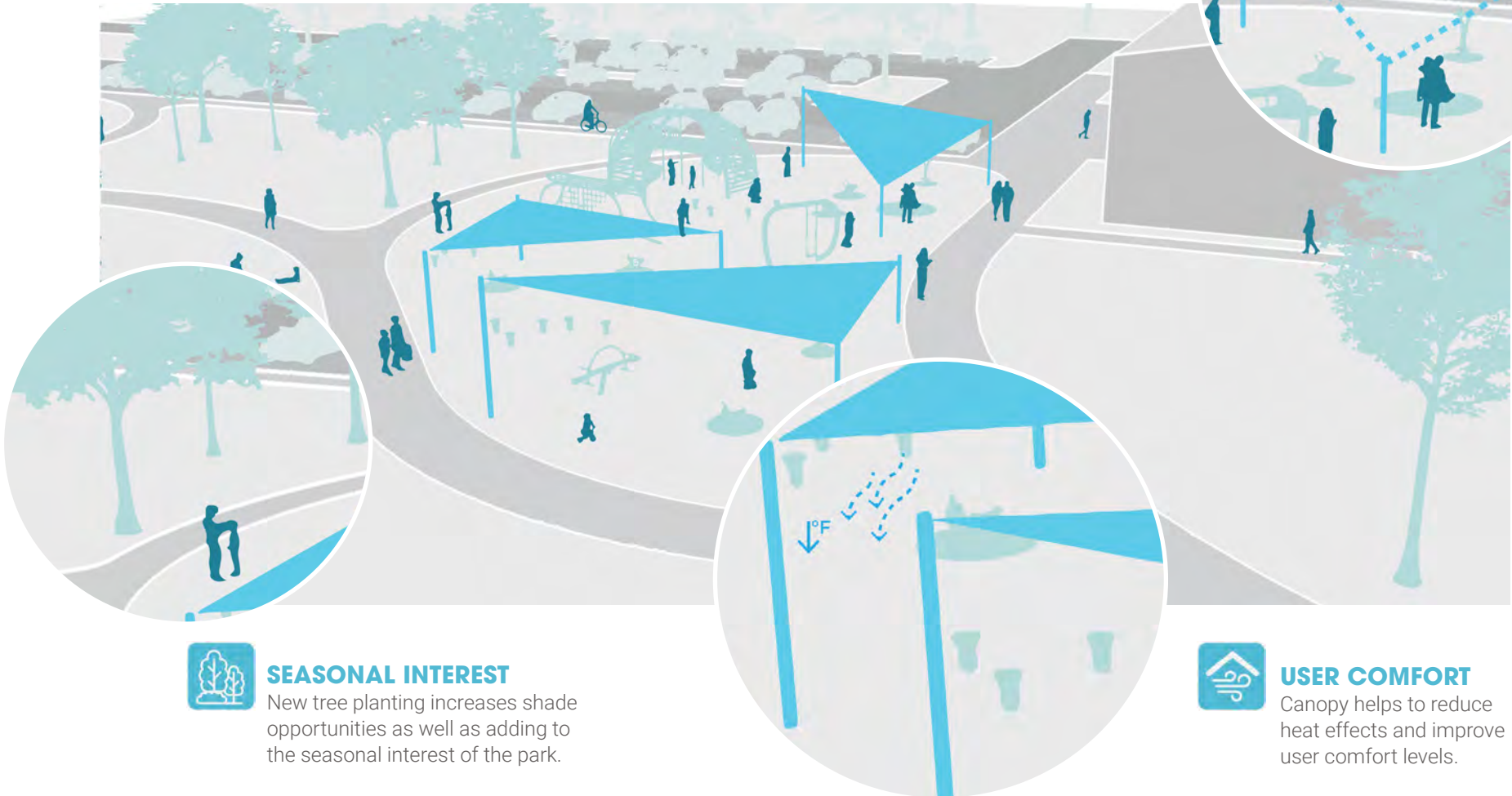
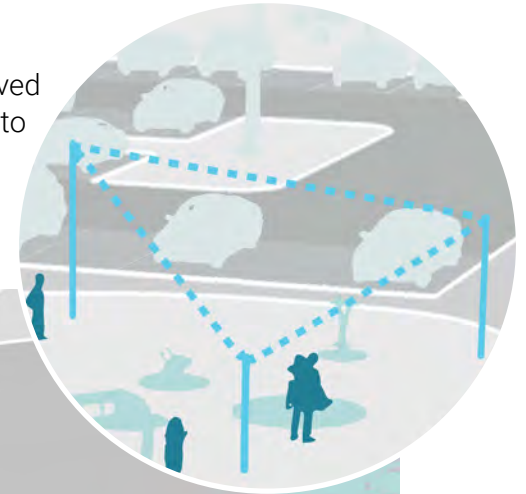
3.4 CANOPY

Fabric canopies offer seasonal, lightweight structures available in different geometries and sizes. Use may be most appropriate in areas like recreational fields, playgrounds, or fitness areas where the character will not conflict with more traditional structures. Canopies may not be durable at oceanfront parks with high winds; consult Ops staff.



SEASONAL

Canopy can be removed in the winter months to increase solar gain.



SEASONAL INTEREST

New tree planting increases shade opportunities as well as adding to the seasonal interest of the park.



USER COMFORT

Canopy helps to reduce heat effects and improve user comfort levels.

3.4 CANOPY

Lightweight fabric structure

Seasonal applications

Playground / active fitness

SIZE:

- Small/medium/large

ROOF OPTION:

- Fabric

MATERIALS:

- Metal frame

COLOR:

- Match existing
- Off white
- Add DCR logo where appropriate

POSSIBLE MANUFACTURERS:

- USA SHADE
- Shade Systems Inc.
- Polygon
- Apollo Sunguard



SHADE SAILS

(Credit: USA SHADE)



MULTI-SIDED FRAME

(Foss Park; Credit: DCR)



SINGLE-POST / CANTILEVER

(Magazine Beach; Credit: DCR)

3.5 AWNING

Awnings can provide shade for visitor queuing, interpretive programs, or staff break areas. Choose options to complement building facades. Consult Office of Cultural Resources before mounting on historic structures, which include many maintenance facilities.



COVERED STORAGE

Awning provides some protection from the elements for maintenance equipment.



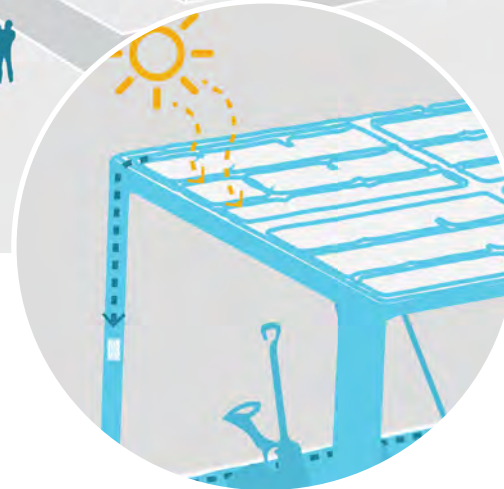
EXISTING STRUCTURES

Underutilized existing awning structures can be evaluated and reprogrammed to better serve the park's shade needs.



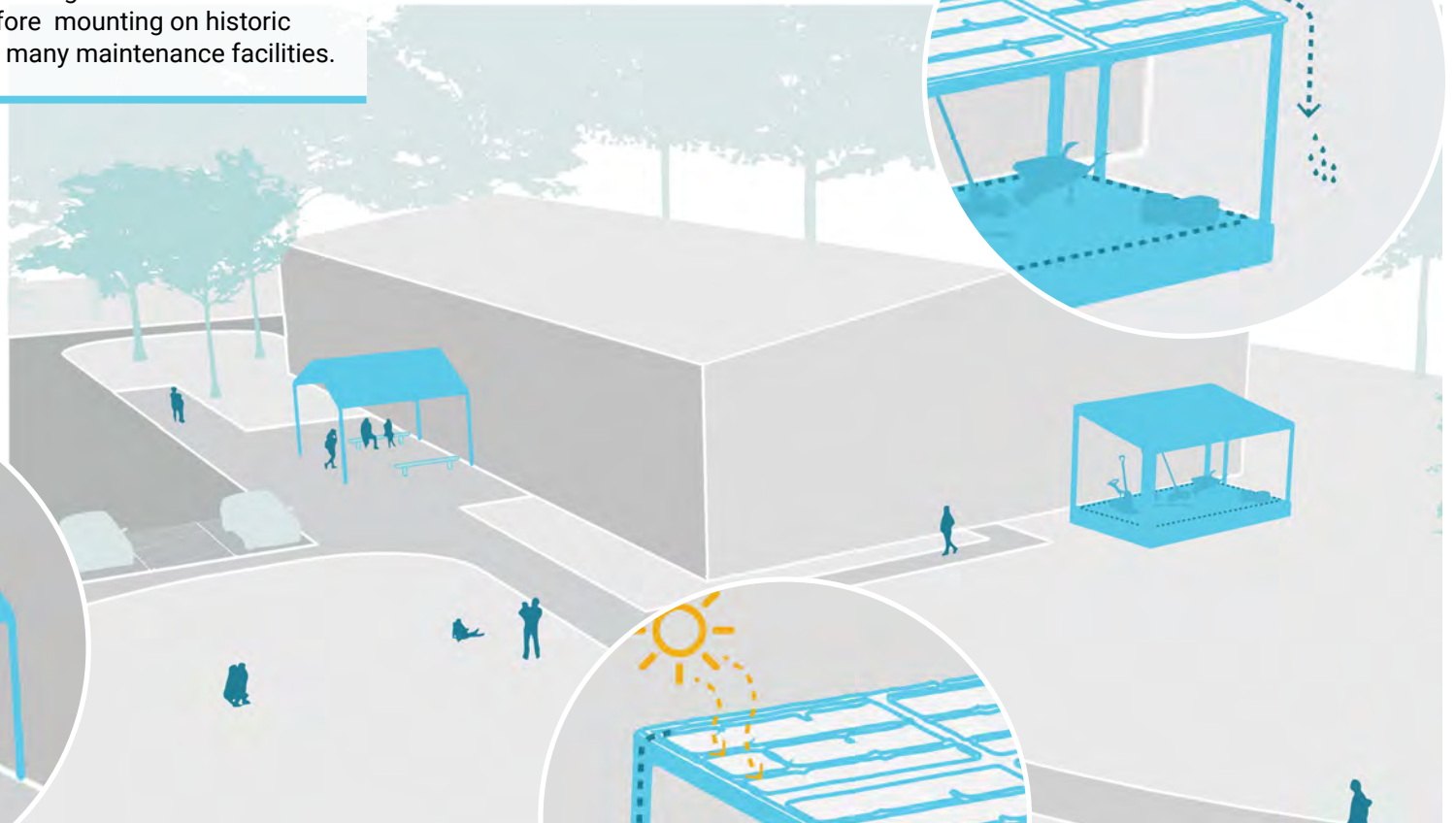
SOCIAL GATHERING

Utilizing an existing awning structure creates an opportunity for socialization at building entries.



SOLAR ENERGY

The addition of solar charging to awnings can be used for various maintenance team needs.



3.5 AWNING

Enhancement to existing structure/building

Entry / exit gathering areas

Maintenance / staff areas

MATERIALS:

- Galvanized steel
- Fabric: 100% solution-dyed woven, UV resistant fabrics

COLOR:

- Match existing
- Off white
- Add DCR logo where appropriate

MOUNTING OPTIONS:

- Wall
- Soffit
- Roof
- Freestanding



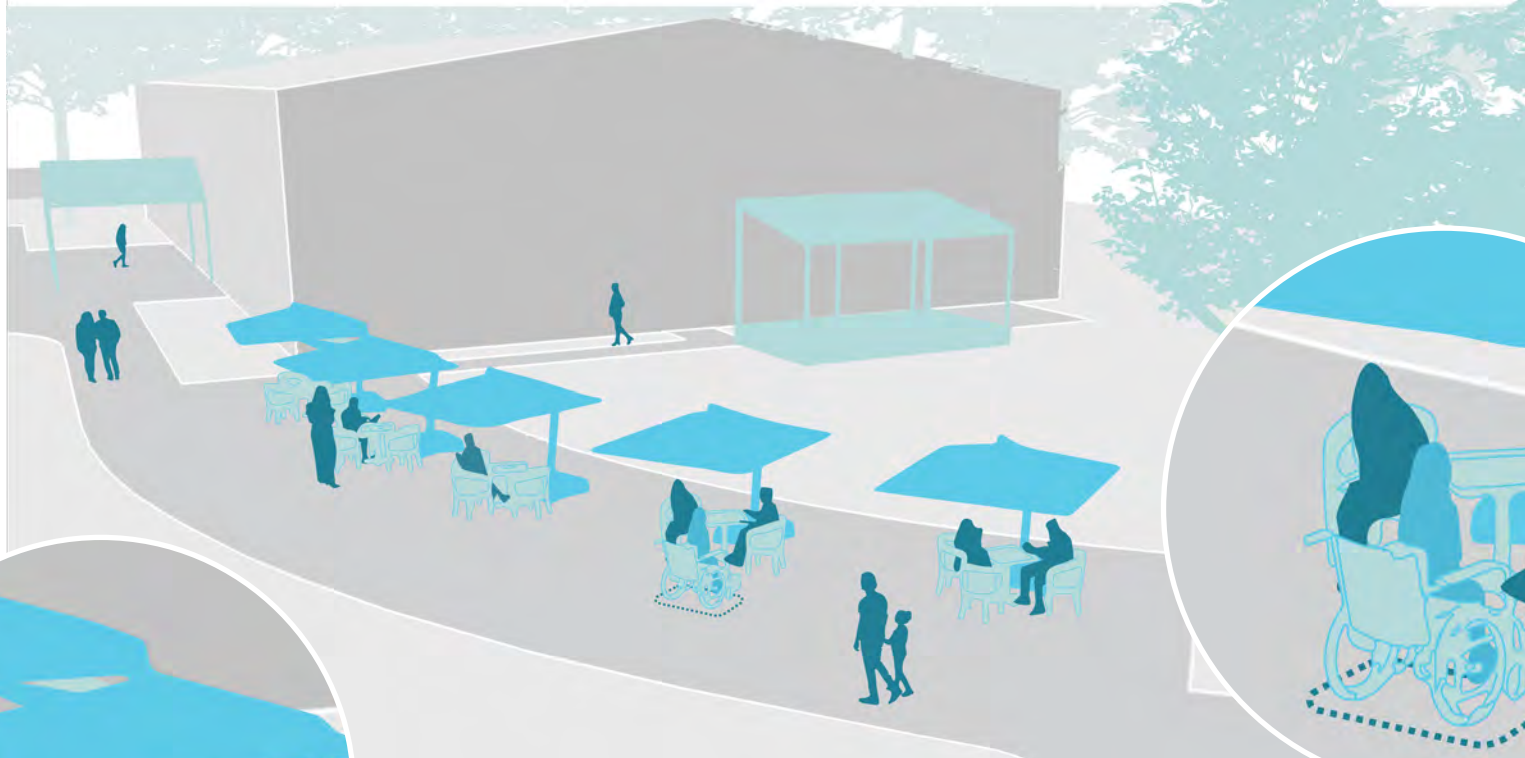
Credit: Pvilion



Source: Google Map

3.6 UMBRELLAS

Umbrellas offer a means to provide angled shade.
Coordinate color selection with park site furnishings.



USER COMFORT

Improves user visual comfort by controlling glare and reducing contrast ratios. Shade lowers thermal sensation, increasing thermal comfort from Spring through Fall.



ACCESSIBLE TO ALL

The umbrella shade structure is designed to be accessible to everyone. The structure can be configured for any location allowing gathering for users of all abilities.

3.6 UMBRELLAS

Flexible/adaptable shade intervention

MATERIALS:

- Fabric: UV, water resistant acrylic
- Stainless steel

COLOR:

- Match existing
- Off white
- Add DCR logo where appropriate



UMBRELLA – GRAINGER (COMMERCIAL GRADE)
ITEM 49XM70
MFR. MODEL 98382031

- 7.5 ft width
- 8.8 ft height base to top of umbrella.
- 6.3 ft height base to bottom of umbrella ribs.
- Fabric is UV, water resistant acrylic.
- Has a pressure release vent.
- Cost of umbrella is \$452 plus shipping and tax.
- Note that the base and the table in the link are not included with the umbrella



UMBRELLA BASE – HOME DEPOT
MODEL # CRL070
STORE SKU # 1008084592

- This base is 70 lb weight and can be bolted down to the deck.
- Stainless steel
- Cost of base is \$423 plus shipping and tax

3.7 GAZEBO

A centerpiece or focal point of a park. Smaller than the typical octagon pavilion, a Gazebo provides a similar flexible gathering space along an accessible route. Gazebos should have utilities (water/power) where possible to accommodate a wide variety of uses. Coordinate DCR policy for use (first come, first serve or by reservation).



SOLAR ENERGY

Provides a comfortable and functional shaded seating area while also promoting sustainability. The solar panels power the charging stations, reducing the need for grid electricity.



AIR FLOW

Tiered roof on larger structures for increased air flow.



SOCIAL GATHERING

Provides a comfortable, shaded space for community gathering. The large footprint allows for a variety of layouts that can support a large range of community events. Open floor plan for operational flexibility.

3.7 GAZEBO

Elevated, oriented for performance

With railings

SIZE:

- Small - 12'-18' dia.
- Large - 24'-30' dia.

SHAPE:

- Hexagon
- Octagon

ROOF OPTION:

- Hip roof: for small size
- Tiered roof: for large size

MATERIALS:

- Wood frame
- Shingle roof
- Composite slate

ACCESSIBLE SURFACE TREATMENT:

- Concrete
- Permeable pavers
- Stabilized soil

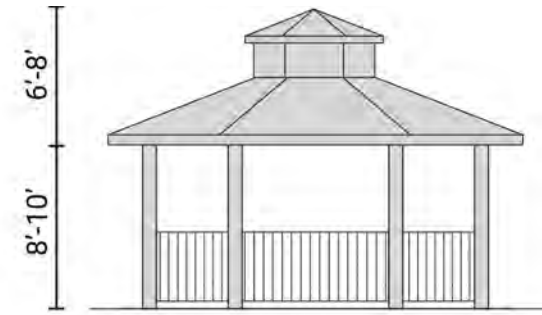
SITE FURNISHINGS:

*Not included for program flexibility

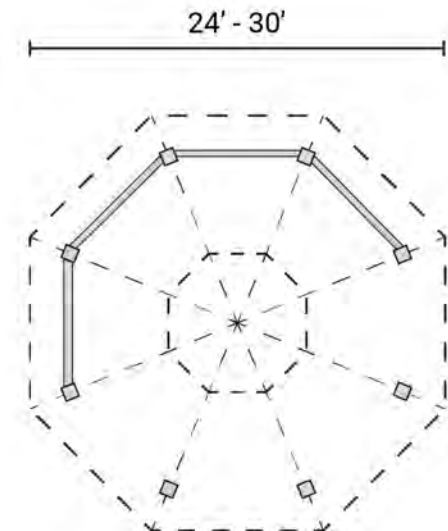
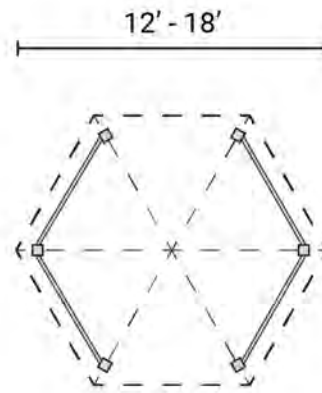
SMALL



LARGE



ELEVATION VIEW



PLAN VIEW

3.8 PERGOLA

Pergolas are typically custom elements for smaller scale parks, although large-scale pergolas are located at Mary Jeanette Murray Bathhouse at Nantasket Beach Reservation and Holyoke Heritage Park.



SEASONAL INTEREST

New tree planting and native shrubs and vines will add a layer of seasonal interest to the parks existing planting palette.



USER COMFORT

Overhead structure and vegetation help reduce heat effects and improve user comfort levels.



ACCESSIBLE TO ALL

Companion spaces are provided next to benches, providing accessible and inclusive seating for all.

3.8 PERGOLA

Dappled shade

Seating or walkway in garden setting

Integrated planting element

SIZE:

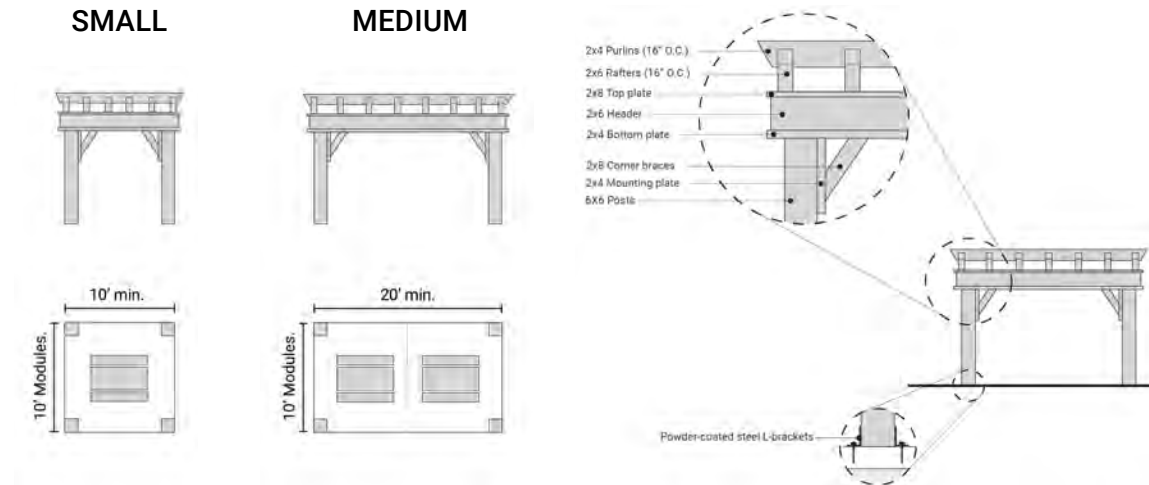
- Small
- Medium

ROOF OPTION:

- Flat roof

MATERIALS:

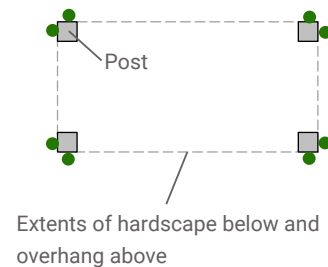
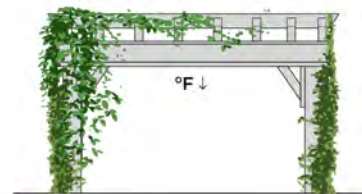
- Wood frame



CO-BENEFIT:

PERGOLA + AT GRADE PLANTING

- Nature-based solution providing habitat and food source for pollinators



Deciduous, native to Massachusetts,
Fast-growing, attract wildlife

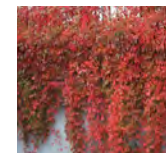
EXAMPLE SPECIES:

WOODBINE
(*Clematis virginiana*)

White blooms, attracts
pollinators, twines to climb
(may need trellis to climb
efficiently)

VIRGINIA CREEPER
(*Parthenocissus quinquefolia*)

Blue berries, attracts birds,
tendrils with discs (can
destroy climbing surface)



Source: Internet

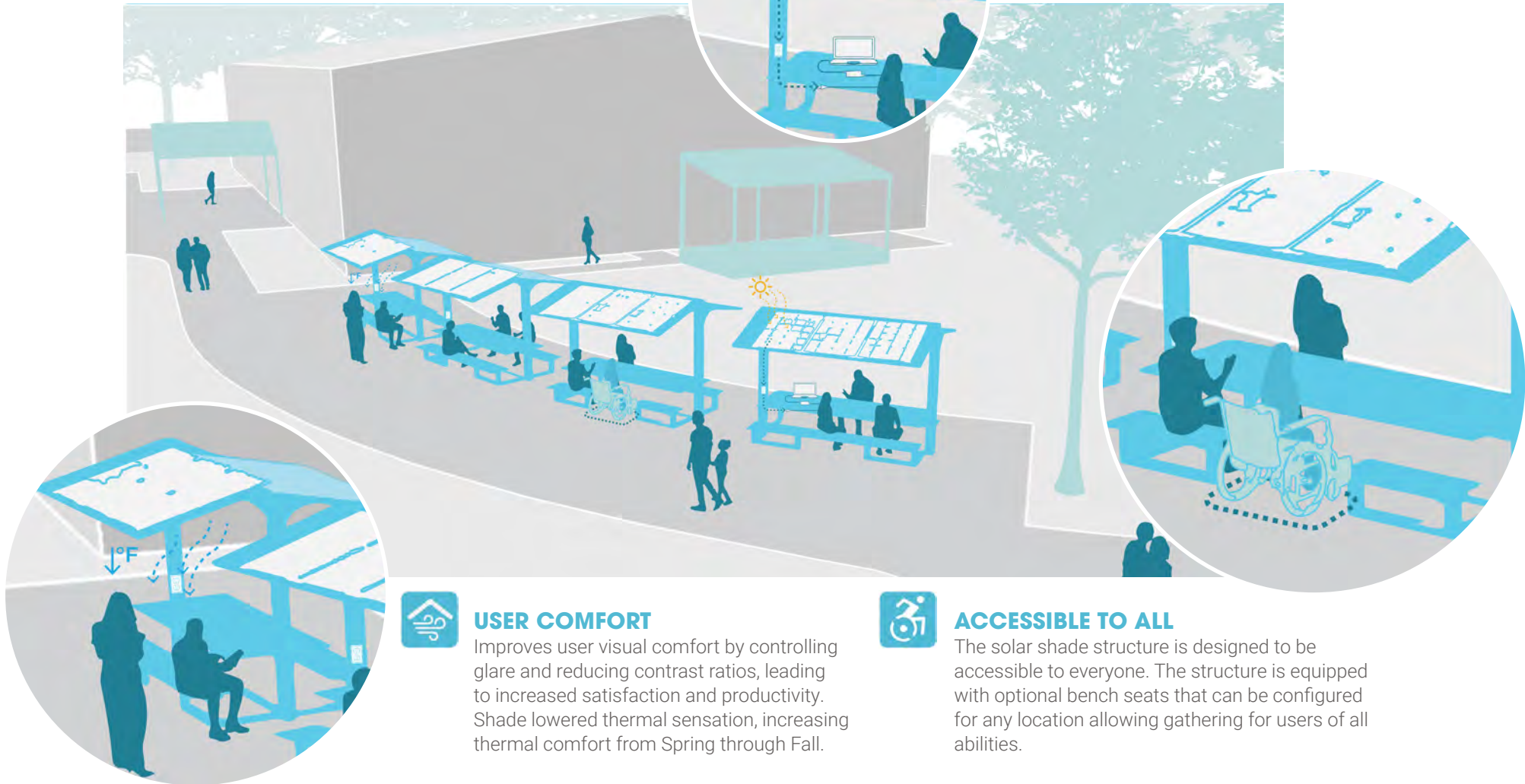
3.9 SOLAR CHARGING SHELTER

Offering convenient charging and power, shade shelters with solar arrays may inspire gatherings like classes, camps, or remote work as well as picnicking.



SOLAR ENERGY

Provides a comfortable and functional shaded seating while also promoting sustainability. The solar panels power the charging stations, reducing the need for grid electricity.



USER COMFORT

Improves user visual comfort by controlling glare and reducing contrast ratios, leading to increased satisfaction and productivity. Shade lowered thermal sensation, increasing thermal comfort from Spring through Fall.



ACCESSIBLE TO ALL

The solar shade structure is designed to be accessible to everyone. The structure is equipped with optional bench seats that can be configured for any location allowing gathering for users of all abilities.

3.9 SOLAR CHARGING SHELTER

PRODUCT SPECIFICATION

Solar charging shelters shall be the Haven by Spotlight Solar, www.spotlightsolar.com, or approved equal.

- Finishes shall be as follows:
- Table Top – Recycled Solid Surface Acrylic
- Bench – Thermally Modified Ash
- Frame – Powder-coat Aluminum
- Bench layout shall provide an ADA space on one side of the table.
- Color shall be selected by owner from the full range of color options, including custom.
- Lighting option to be determined by Owner based on site specific conditions.
- Order of Magnitude Cost: \$28,000 (varies based on final accessory selections)

Installation Notes

- Self-assembly from shipped parts (Max weight 150lbs)
- Forklift required for offload
- Accessible, durable ground plane surface for placement
- No footings or ground mounting required

Operations and Maintenance Notes

- Re-sealing of wood bench surface as needed
- Buffing of table top surface for any markings /graffiti
- 15+ year expected battery life (6 year warranty)

DCR Reference Projects

- Melnea A. Cass Recreational Complex



Figure 3.9. Solar charging shelters at Melnea A.Cass Recreational Complex (Credit: DCR)