

*...through conservation, a continued preservation of history.*



Human life is sustained by basic physical and psychological needs. Like vegetation, our bodies need food and water to remain healthy. However, unlike the living and breathing plants around us, humans have an instinctive desire to explore and discover. This point is at the focus of the Western Maryland Welcome Center design.

Two distinct paths provide access to the new structure, each presenting a unique learning experience. The first, a sustainable path, climbs a gradual slope to its visual anchor – a power-generating wind turbine. Along the route, photovoltaic panels imitate a natural slope as the array harnesses the energy of the sun. Rainwater is captured off of the slope and directed into an underground storage tank. Surplus rainwater is then pumped into grade-level channels radiating from the Center. The channels provide water to a wildflower meadow, which saturates the landscape south of the Welcome Center.

The path pivots around the turbine and begins climbing once again - the earth bermed up to capture geothermal heat from below. The ground is then seamlessly transformed into green roof as the visitor is offered a glimpse into the mechanical workings of the Center below through a break in the photovoltaics. Continuing upslope, the procession culminates in the grand panorama of the valley – a view considerably enhanced by this sustainable extension of the natural landscape. The visit concludes by descending the stair at the western-most point of the Center and passing by the exhibit space where the final piece of sustainable technology is presented. Here, a massive trombe wall aids in passive heating and cooling of the interior space.

The second path, a historical path, delivers the visitor on grade into the Welcome Center. Parting the wildflower meadow, the visitor has the option of passing behind the photovoltaics to access the rest facilities and educational sustainable systems display or proceeding into the exhibit space. With its combination of glass and translucent panel skin, the exhibit space acts as a magnet – pulling one inward. Once through the doors, the main view out is focused on the Baker farm, the southern-most edge of the battlefield and site of the flanking attacks from the Confederates. The story of the Monocacy battle begins to unfold from both sides in a series of translucent maps on the north wall. The concrete floor is pigmented with a map of the region, pinpointing the locations of landmarks.

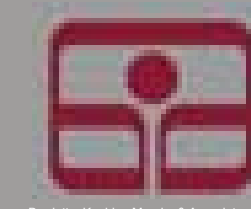
Spatially, the entire room is oriented towards the Baker farm, the only historic structure clearly visible from grade level. Recycled wood content gluelam beams support a dramatic overhang to the west and shade an outdoor picnic area and the glazing. Finally, after absorbing these layers of information, the visitor can ascend the external stair and take in the majestic view. Here, atop the green roof of the exhibit space, the two paths intersect.

The Welcome Center aims to teach visitors about the significance of the Monocacy battle of the Civil War, while simultaneously showcasing sustainable design principles. In the 140 years since that battle which saved the capital from destruction, industrialization and mechanization of the United States has occurred at an incredible pace. Unfortunately, these changes have allowed our society to ignore both its natural environment and history.

While serving the necessary functions of a rest area, the Welcome Center's primary purpose is to educate the visitor and do so with minimal environmental impact. While providing an intriguing glimpse into our nation's past, the Welcome Center also offers a lesson in how to live in tune with nature.

# WESTERN MARYLAND WELCOME CENTER

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Holback +  
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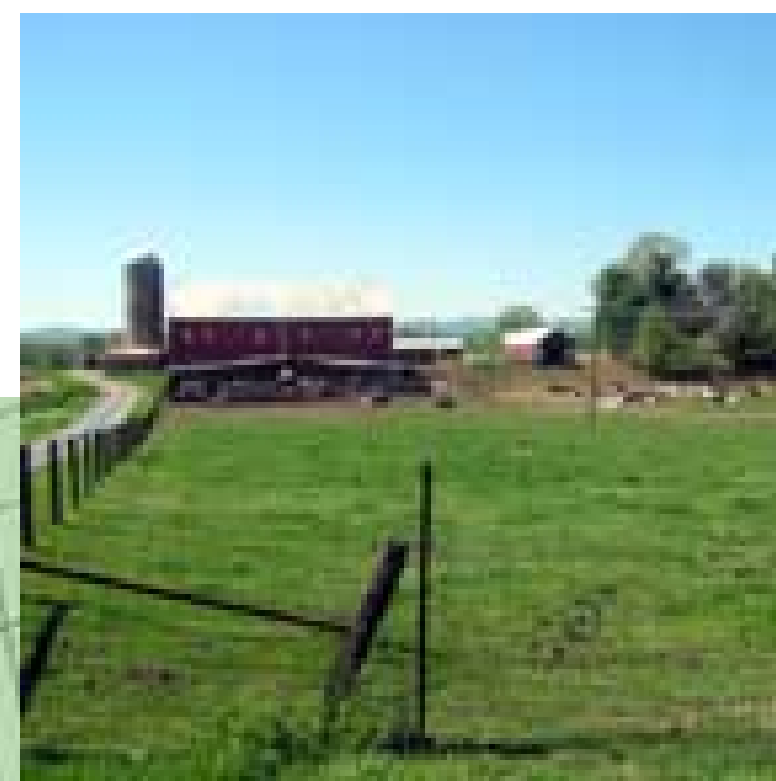
Baker Farm



Worthington Farm House



Thomas Farm



Gambrill Mill



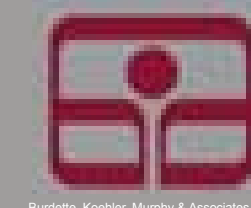
Best Farm



Site plan  
1" = 30"

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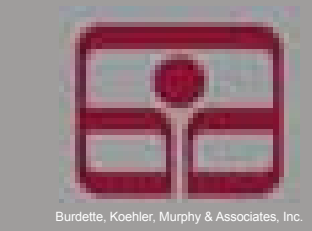


- ① Parking
- ② Gray Water Garden
- ③ Entrance
- ④ Monocacy Battle Interpretative Welcome Center
- ⑤ Outdoor Picnic Area
- ⑥ Restroom Entry and Systems Exhibits
- ⑦ Open to Below
- ⑧ Restrooms
- ⑨ Janitor's Closet
- ⑩ Photovoltaic Array
- ⑪ Geothermal Piping
- ⑫ Wind Turbine
- ⑬ Sustainable Path

First floor plan  
1/8" = 1'-0"

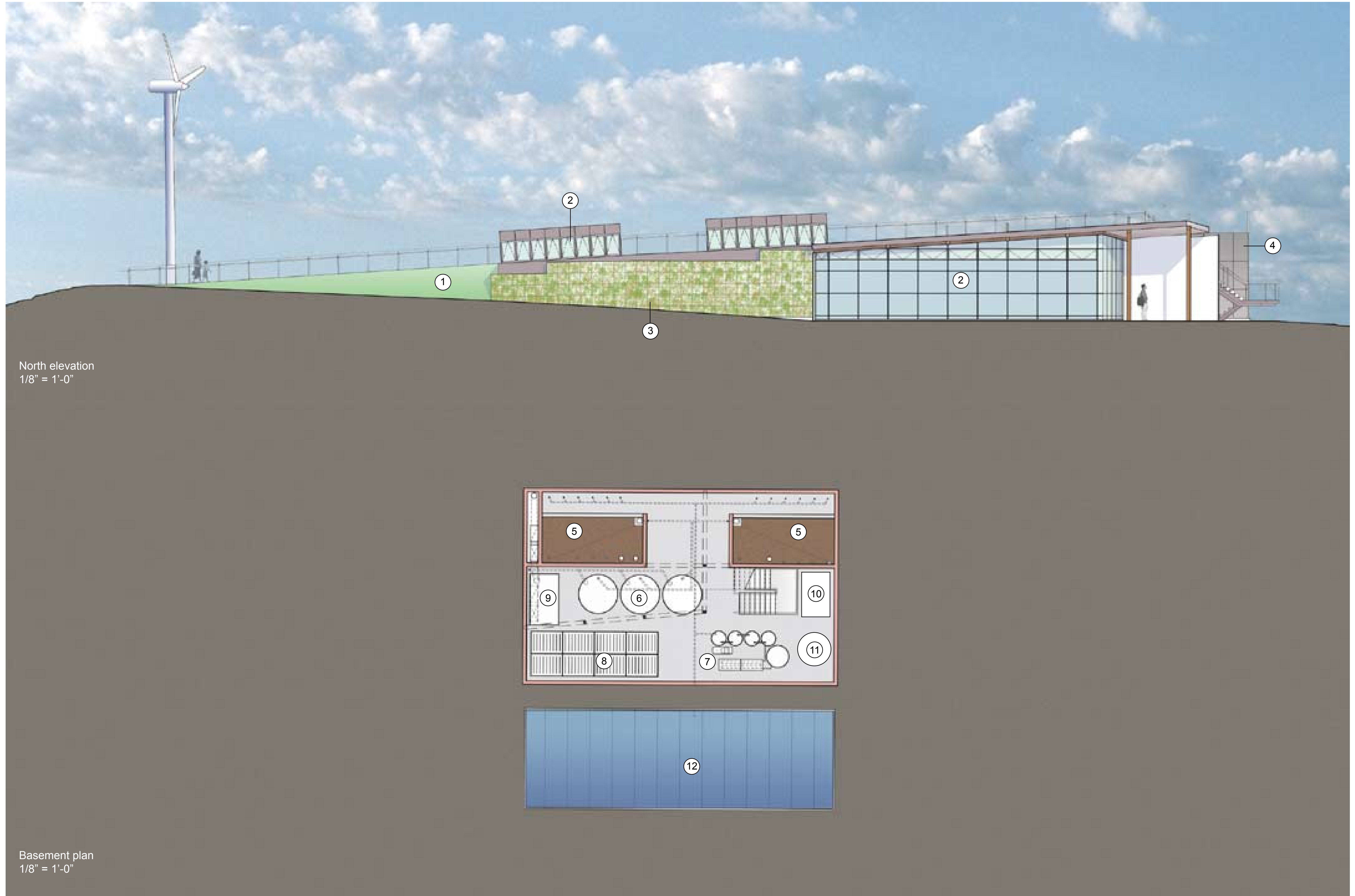
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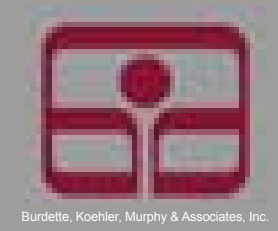




- ① Berm
- ② Kalwall System
- ③ Planted Gabion Wall
- ④ Photovoltaic Panels
- ⑤ Solid Waste Composter
- ⑥ Liquid Nutrient Storage
- ⑦ Water Purification System
- ⑧ Battery Storage
- ⑨ Pellet Boiler
- ⑩ Geothermal Heat Pump
- ⑪ Hot Water Storage
- ⑫ Rainwater Storage

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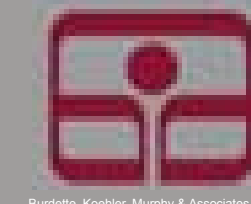
- ① Photovoltaic Array
- ② Solar Hot Water Array Beyond
- ③ Trombe Wall Behind Glass
- ④ Gabion Wall
- ⑤ Wind Turbine
- ⑥ Sustainable Path
- ⑦ Interpretative Panels
- ⑧ Green Roof Overlook
- ⑨ Sun Shade

South elevation  
1/8" = 1'-0"

Roof plan  
1/8" = 1'-0"

# WESTERN MARYLAND WELCOME CENTER

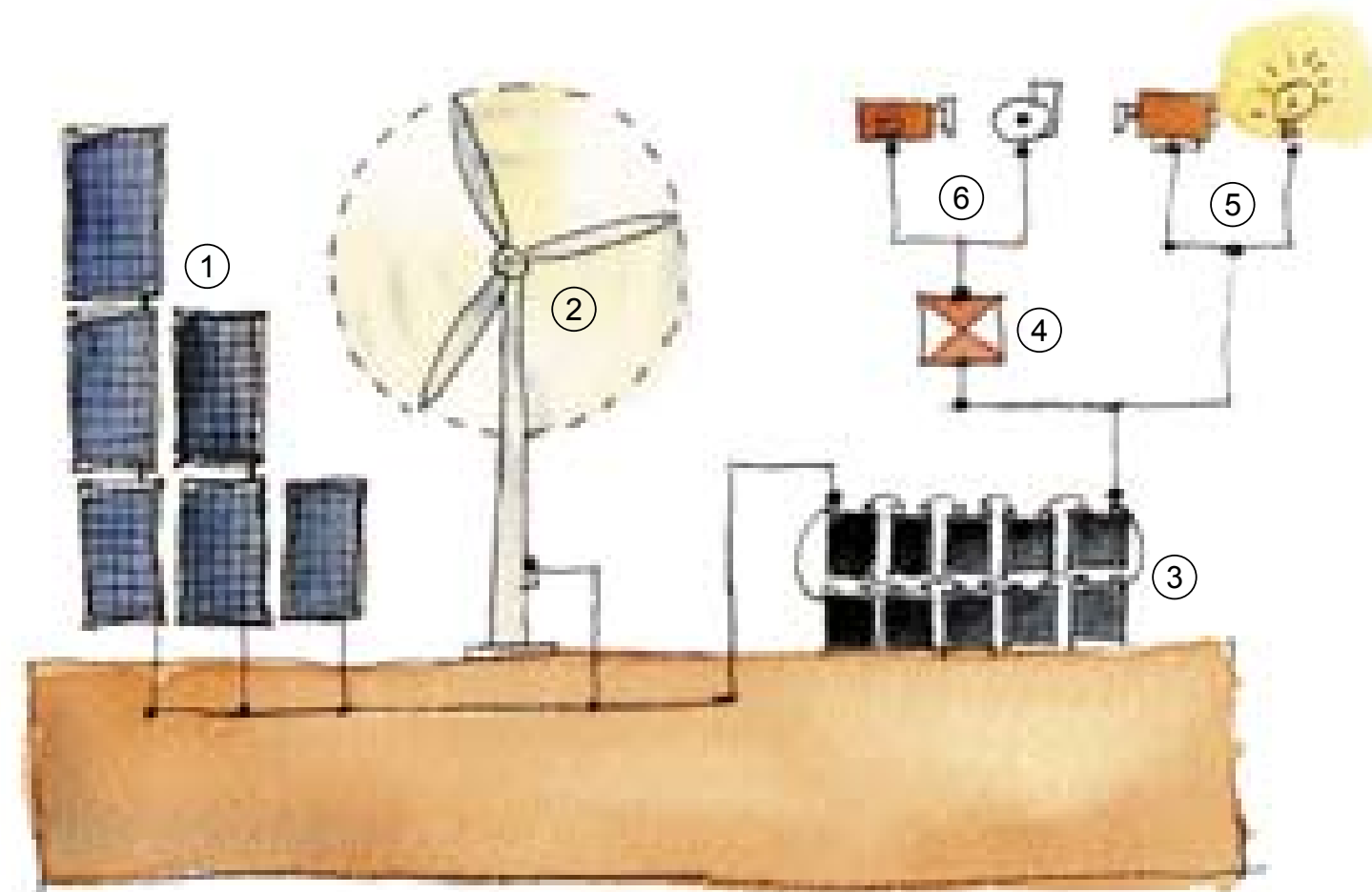
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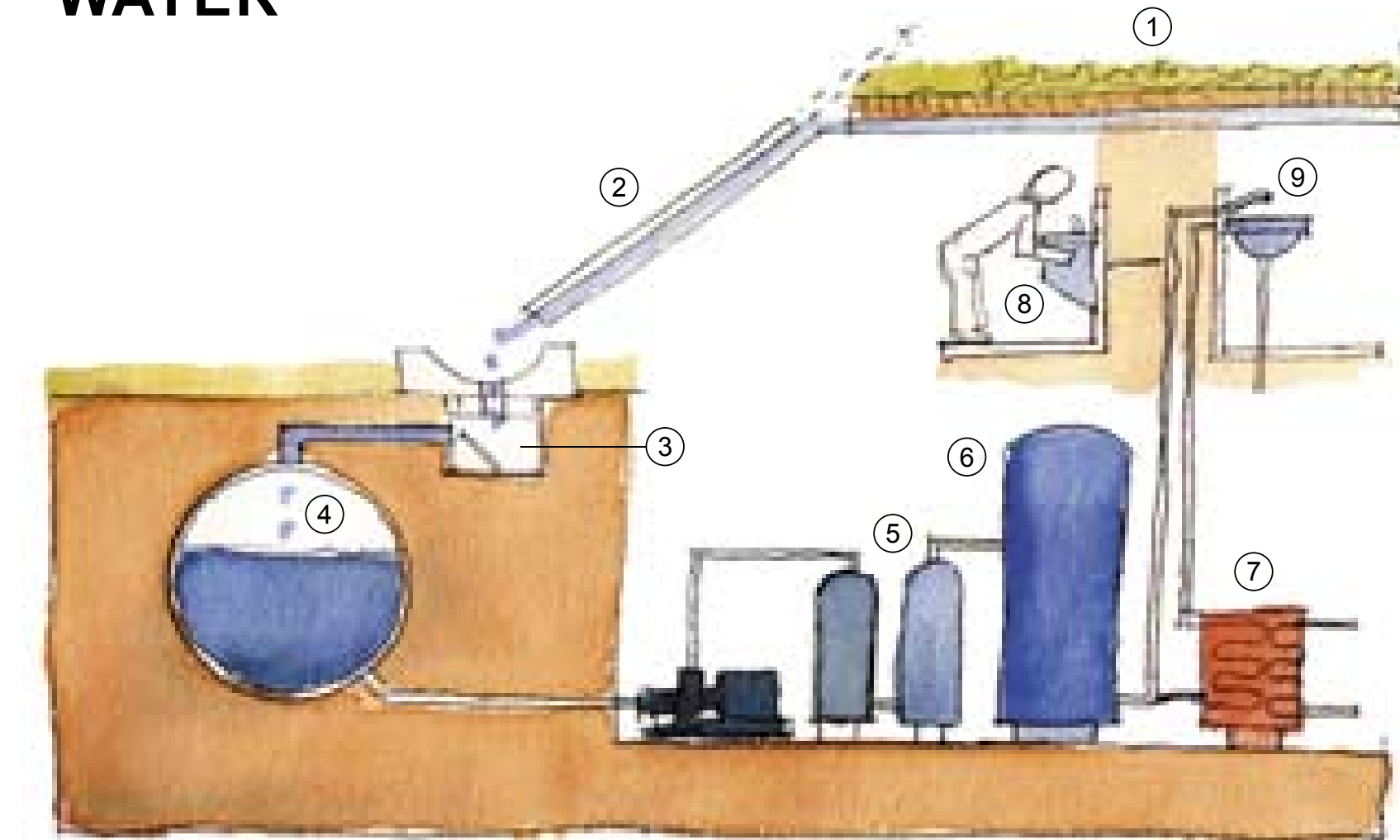


## ELECTRICAL



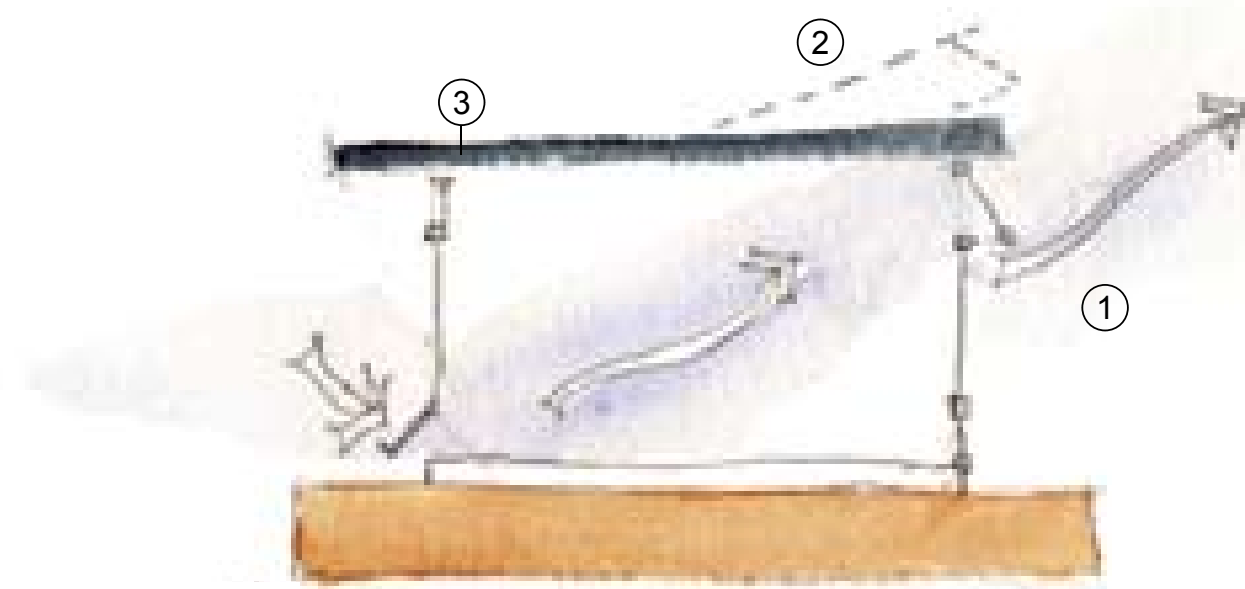
- 1 Photovoltaic-PV - 22 Watts
- 2 Wind Turbine - 2.5 Watts
- 3 Battery Storage
- 4 Inverter
- 5 DC - Lights and Motors
- 6 AC - Motors and Equipment

## WATER



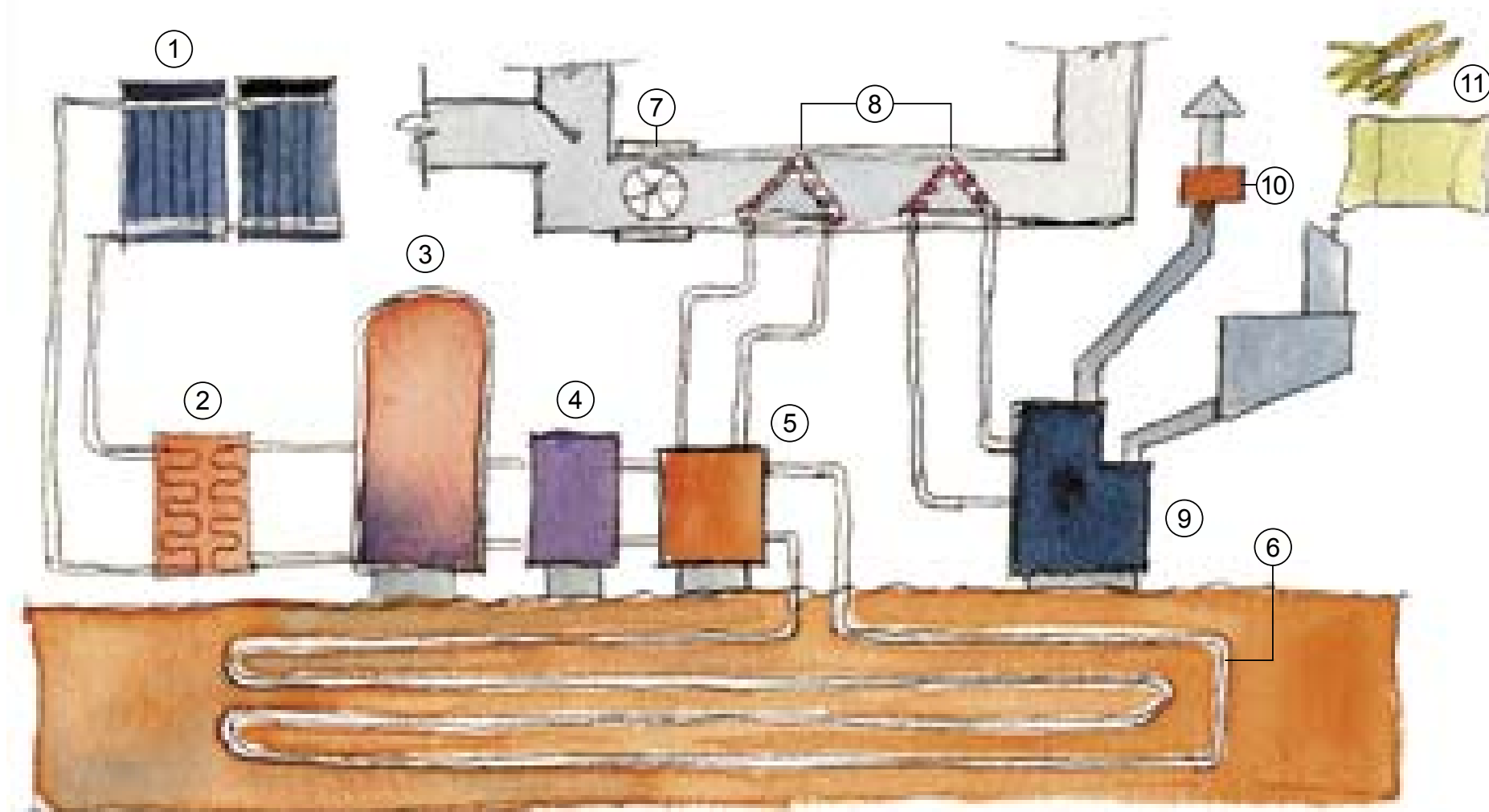
- 1 Green Roof
- 2 Rain Runnel
- 3 Strainer
- 4 Storage Tank - 15,000 Gal.
- 5 Filtration System
- 6 Portable Water Storage
- 7 Hot Water Heat Exchange/ Solar
- 8 Water Fountain
- 9 Low Flow Sink with Sensor

## PASSIVE COOLING



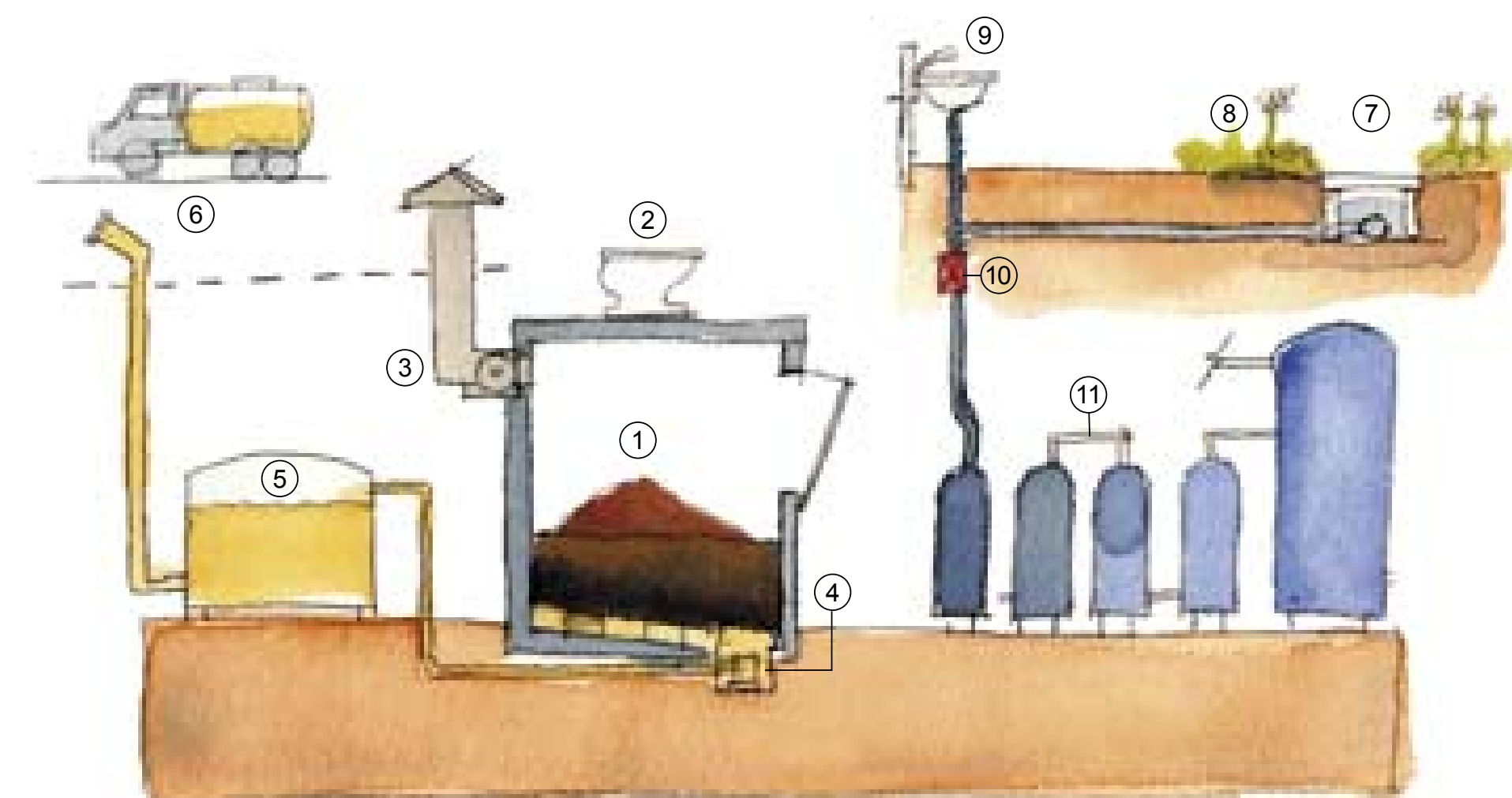
- 1 Operable Windows - Cross Ventilation
- 2 Vented Light Monitors
- 3 Green Roof

## HVAC



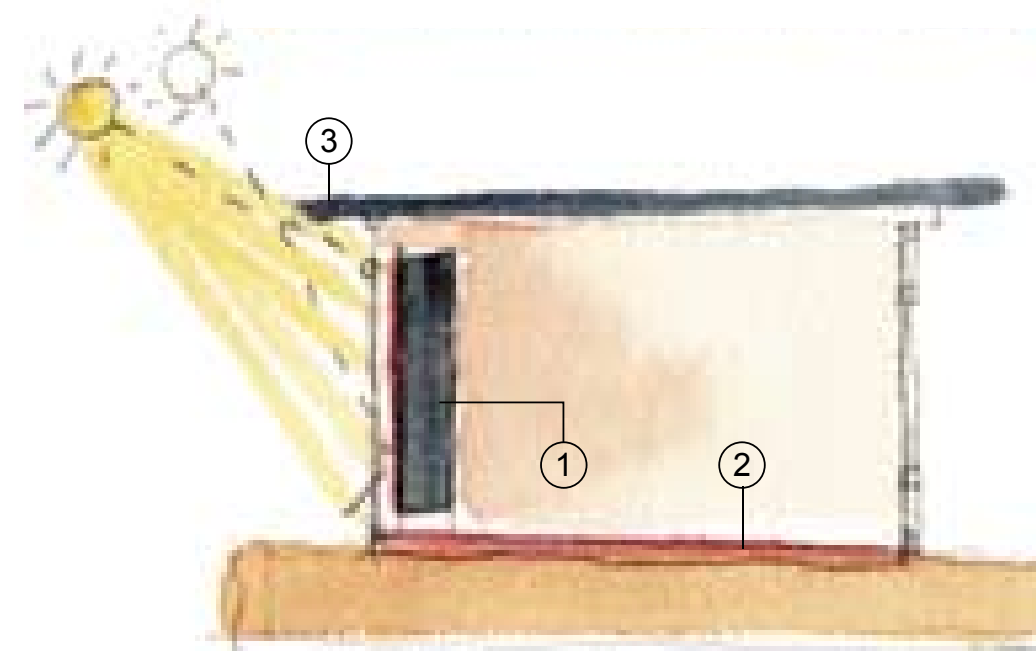
- 1 Hydronic Solar Collector
- 2 Heat Exchanger
- 3 Hot Water Storage
- 4 Heat Pump - 4 Ton
- 5 Condenser
- 6 Geothermal Loop - Horizontal
- 7 Air Handling Unit
- 8 Transfer Coils
- 9 High Efficiency Pellet Stove (Backup)
- 10 Catalytic Flue
- 11 Biomass Pellet Fuel

## WASTE SEPARATION



- 1 Composting Vault
- 2 Composting Toilet
- 3 Exhaust Fan - 24 Hour
- 4 Fluid Separator
- 5 Liquid Nutrient Tank
- 6 Agriculture Use Pick-up
- 7 Gray Water Leech Trench
- 8 Wildflower Meadow
- 9 Lavatory Sink - Gray Water
- 10 Backup Diverter
- 11 Gray Water Filtration Backup For Low Rain Periods

## PASSIVE HEATING



- 1 Trombe Wall
- 2 Thermal Mass Floor
- 3 Seasonal Sun Shade



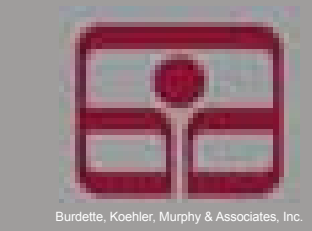


- ① Photovoltaic Panel Array
- ② Sun Shade
- ③ Non-pervious Paver
- ④ Interpretive Panel
- ⑤ Roof Garden Planting
- ⑥ Recycled Gluelam Wood Beam
- ⑦ Stone Gabion (Trombe Wall)
- ⑧ Nanogel Insulated Kalwall
- ⑨ Wheat Board / Bamboo Millwork
- ⑩ Green Roof
- ⑪ Recycled Barn Columns

Welcome Center section  
3/4" = 1'-0"

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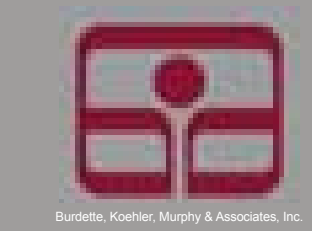


-  Gray Water Wildflower Garden
-  River Rock
-  Rain Water
-  Battery Power Storage
-  Recycled Content Insulation
-  Solar Hydronic Array
-  Green Wall Gabion
-  Waterless/ Foam Flow Toilet
-  Low-Flow Automatic Faucet
-  High Recycle Content CMU
-  Pine Bark Composting Mulch

Toilet room section  
3/4" = 1'-0"

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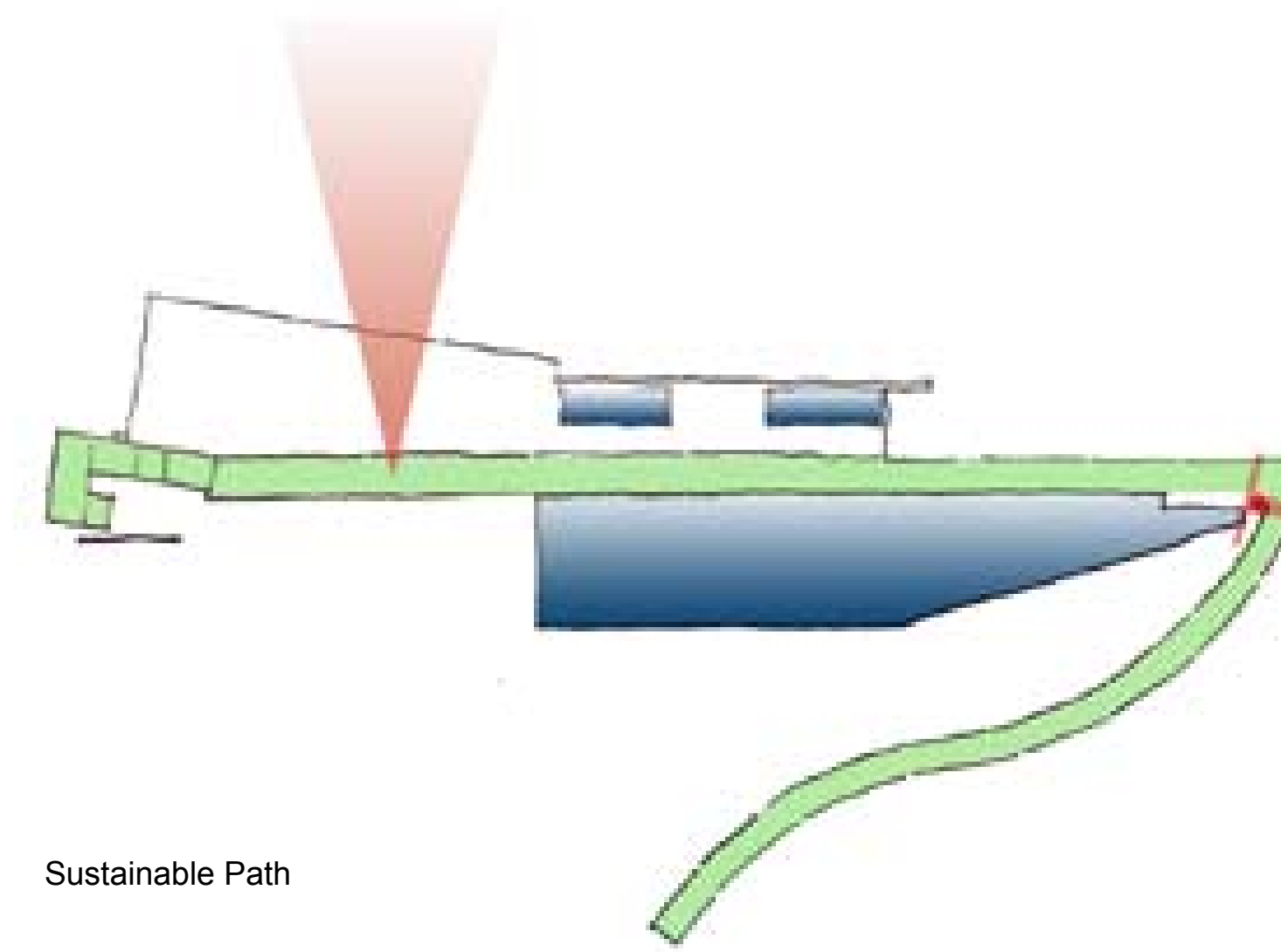
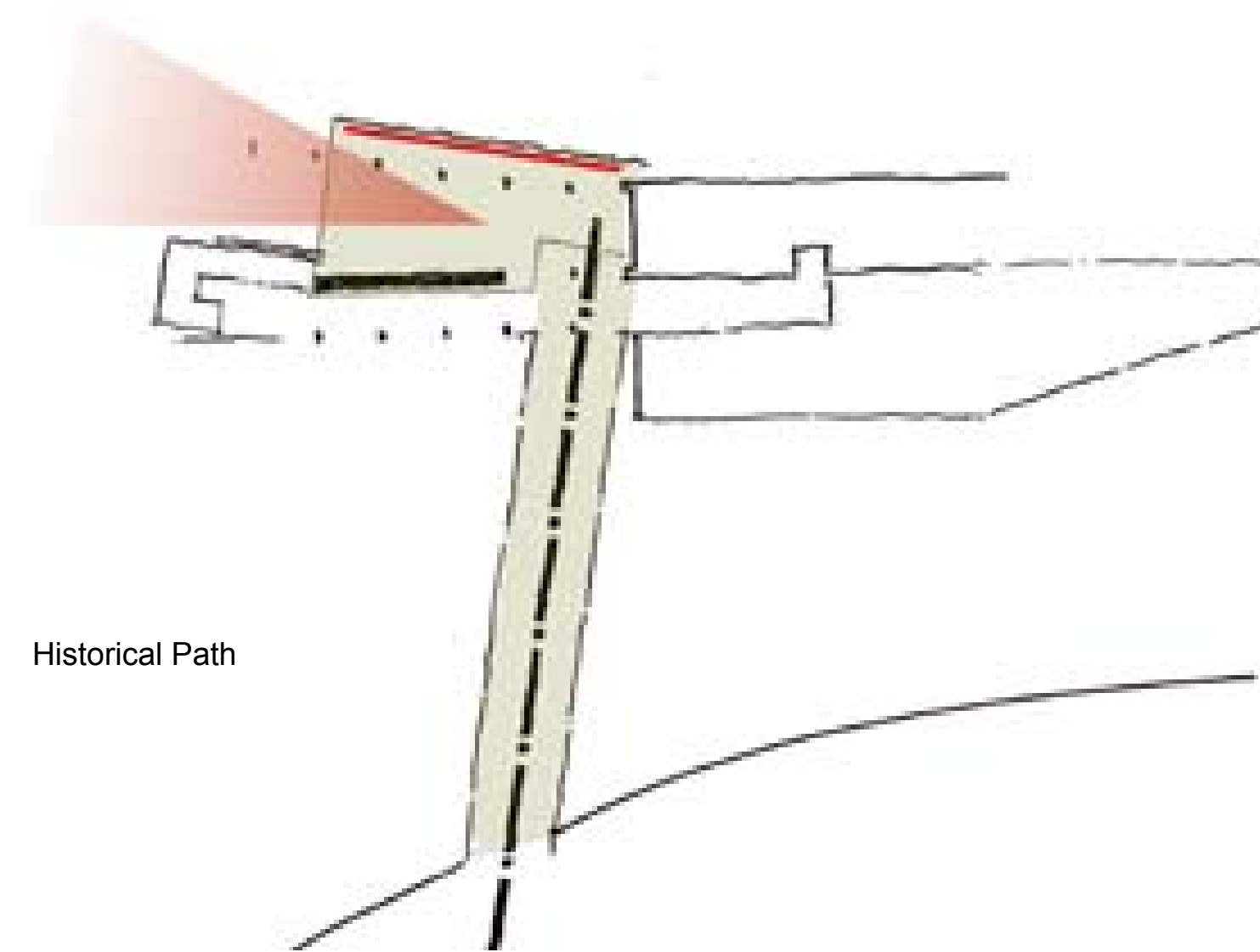
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**SITE'S HISTORY**

The exhibit space establishes a connection to the region by a map etched on the floor and focused views of the Monocacy Battle site. The North facing wall incorporates battle diagrams etched onto translucent panels, organized in a chronological fashion. The space incorporates green design components such as a trombe wall with bench, natural ventilation, controlled use of natural light, recycled columns and other sustainable materials.

**SUSTAINABILITY**

The site and building are designed as a cohesive didactic tool. There are numerous displays that tell the story and purpose of the systems. Upon entering, visitors are welcomed by exterior photovoltaic panels and a trombe wall defining the project's south facing walls. An elevated walkway displays a green roof system and affords a vantage point to appreciate the historic battle site due north.