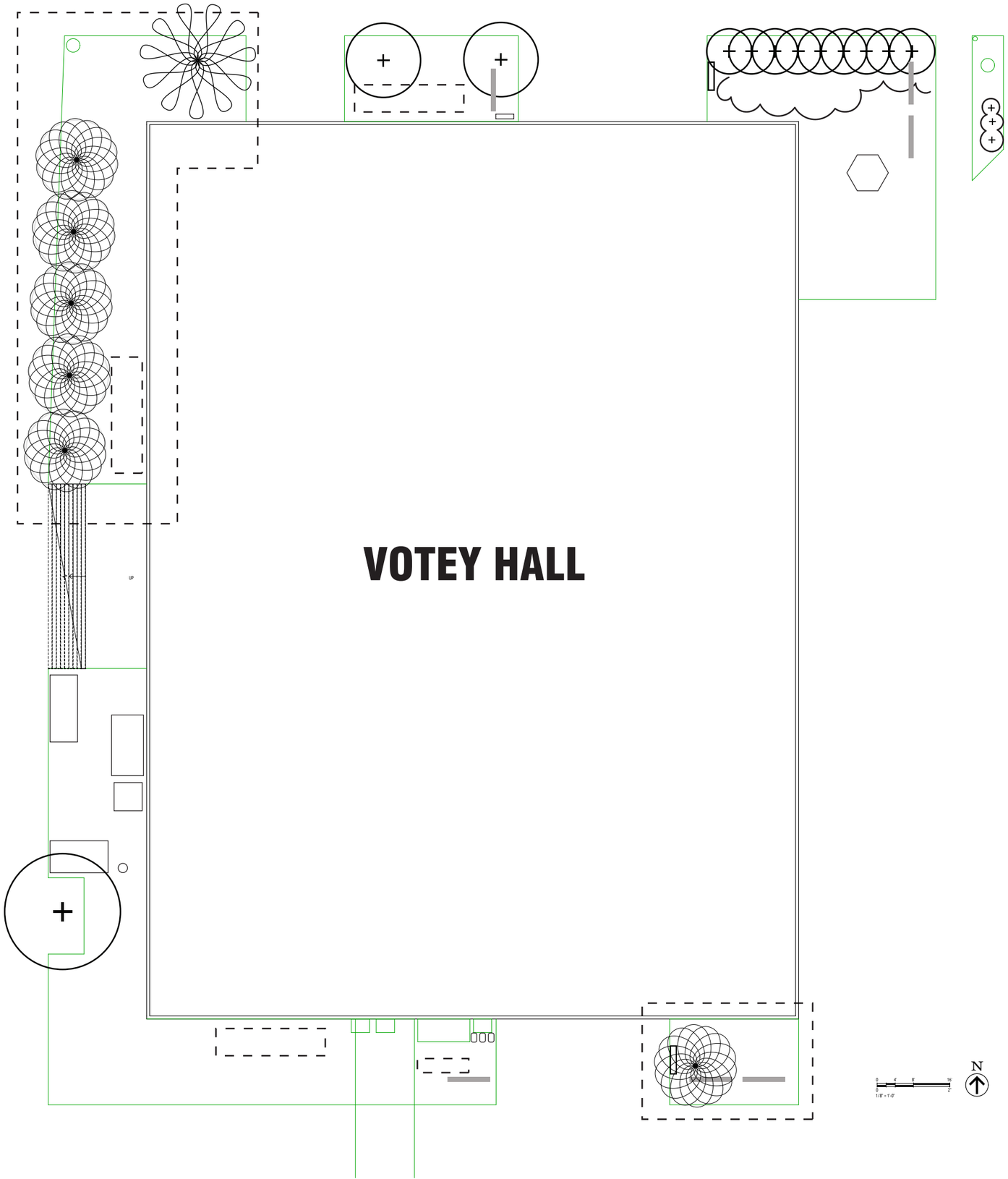


VOTEY NATURALISTIC GARDENS

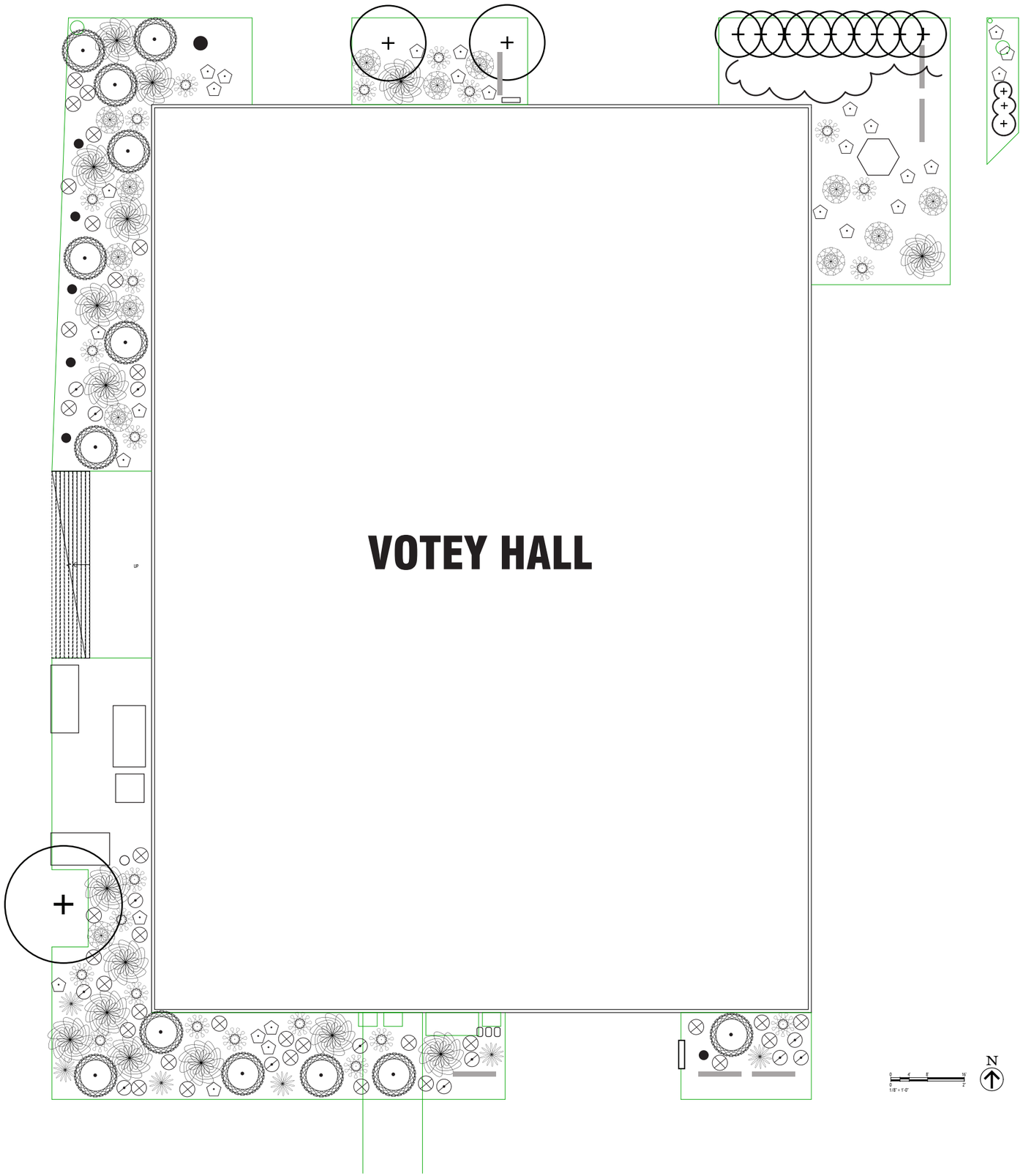
1. Trees, furniture, and hardscape layer

Legend

			Quantity
	Amelanchier laevis	Allegheny serviceberry	6
	Betula alleghaniensis	Yellow birch	1
	Benches		1
	Black Bike Racks		6
	VT slate slabs 1 to 2′ and 2″		3
	Existing sculpture		
+	Existing trees		
	Existing azaleas		
	Stump, concrete, and bridges removal		

Note: After stump removal, the holes will be filled with new soil and mulch, keeping the current appearance. Relocate bike rack in west side.

Design: Fortino Acosta
Students: Erin Camire, Robert Gibson, Brendan Phalen, Toyib Aremu, Nathan Reeder
Project sponsored by Sustainable Campus Fund



VOTEY NATURALISTIC GARDENS

2. Shrub layer

Legend

			Quantity
	Ilex verticillata	Winterberry	16
	Cornus sericea	Redwood	12
	Pinus mugo 'Enci'	Dwarf Enci Mugo	6
	Rhododendron catawbiense	Azalea 'English Roseum'	13
	Aralia racemosa	American spinkenard	23
	Symphyotrichum novae-angliae	New England aster	33
	Fothergilla gardenii	Dwarf fothergilla	15
	Pycnanthemum muticum	Blunt mountain mint	26

Design: Fortino Acosta
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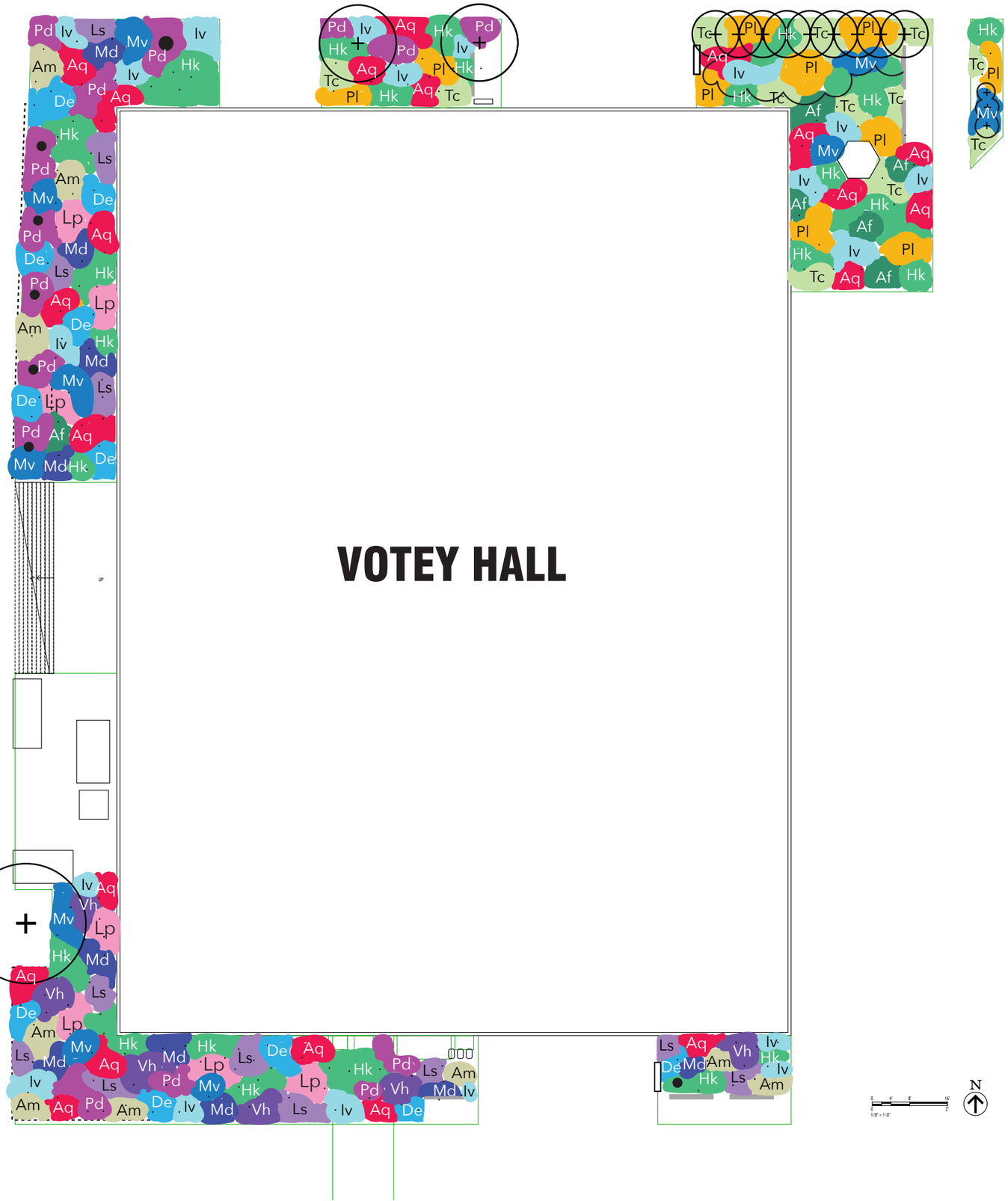


VOTEY NATURALISTIC GARDENS

3. Groundcover layer

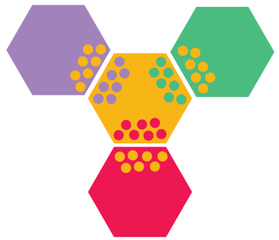
Legend

			Quantity
Md	*Monarda Didyma Purple Rooster*	Bee balm	10 bubbles (5 plants xm2)
Vh	*Verbena hastata*	American vervain	6 bubbles (7 plants x m2)
Am	*Achillea millefolium*	Yarrow	9 bubbles (5 plants x m2)
Af	*Athyrium filix femina*	Lady in Red	5 bubbles (1 plant x m2)
Hk	*Hosta* 'Krossa Regal'	Hosta 'Krossa Regal'	25 bubbles (3 plants x m2)
De	*Delphinium exaltatum*	Tall larkspur	11 bubbles (3 plants x m2)
Aq	*Aquilegia canadensis*	Columbine	21 bubbles (5 plants x m2)
Lp	*Lupinus perennis*	Lupinus	7 bubbles (7 plants x m2)
Mv	*Mertensia virginica*	Virginia bluebells	10 bubbles (7 plants x m2)
Pd	*Phlox divaricata*	May breeze	15 bubbles (7 plants x m2)
Tc	*Tiarella cordifolia*	Foam flower	12 bubbles (11 plants x m2)
Iv	*Iris versicolor*	Blue flag	19 bubbles (5 plants x m2)
Pl	*Polygonatum latifolium*	Solomon seal	10 bubbles (5 plants x m2)
Ls	*Lobelia siphilitica*	Great blue lobelia	12 bubbles (7 plants x m2)

Bubbles: ~5 m2 (54 ft2)

Plan representation:

Planting example:



Design: Fortino Acosta
Students: Erin Camire, Robert Gibson, Brendan Phalen, Toyib Aremu, Nathan Reeder
Project sponsored by Sustainable Campus Fund

NEW NATURALISTIC GARDENS

BY ROBERT GIBSON, ERIN CAMIRE & NATHAN REEDER

FACULTY MENTOR | FORTINO ACOSTA

University of Vermont

University of Vermont

General Goal

- Collaborate on the design process of **13,210 square feet of new naturalistic gardens** on Campus.

- **Interdisciplinary initiative** promoted by people from four different colleges, Grounds staff & Landscape, Mobility, Sustainability Committee.

- This project will involve designing gardens that beautify campus while creating a haven for wildlife. This will be achieved by thoughtfully **integrating native plants communities** into the landscape design. By working collaboratively with students, this project will create a plan that is not only aesthetically pleasing but also functional, sustainable, and requires minimal maintenance in the long run, contributing on making the necessary changes at UVM to address the climate and biodiversity crisis.

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Justification

- **Underused lawn spaces** like in small areas or in remote and steep sites, are more difficult to maintain than a more naturalistic garden.
- Lawn care requires **high maintenance**, labor time, and use of products.
- Naturalistic gardens have more **biodiversity benefits** by including native species that provide shelter and food to beneficial wildlife.
- The project will help us to **involve students in the design and monitoring processes** that can be replicated in other challenging areas on campus.

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Design Brief

- Design an access with a **high positive environmental impact** that complements the attraction of the buildings.
- Intervene in the landscape in a **coherent, functional, aesthetic, and sustainable** way to generate new and positive impressions of space.
- Use native plants that strengthen the unique **character of the place**.
- Quantify the **maintenance reduction**.
- Guide other students to **collaborate** during the design and monitoring processes.

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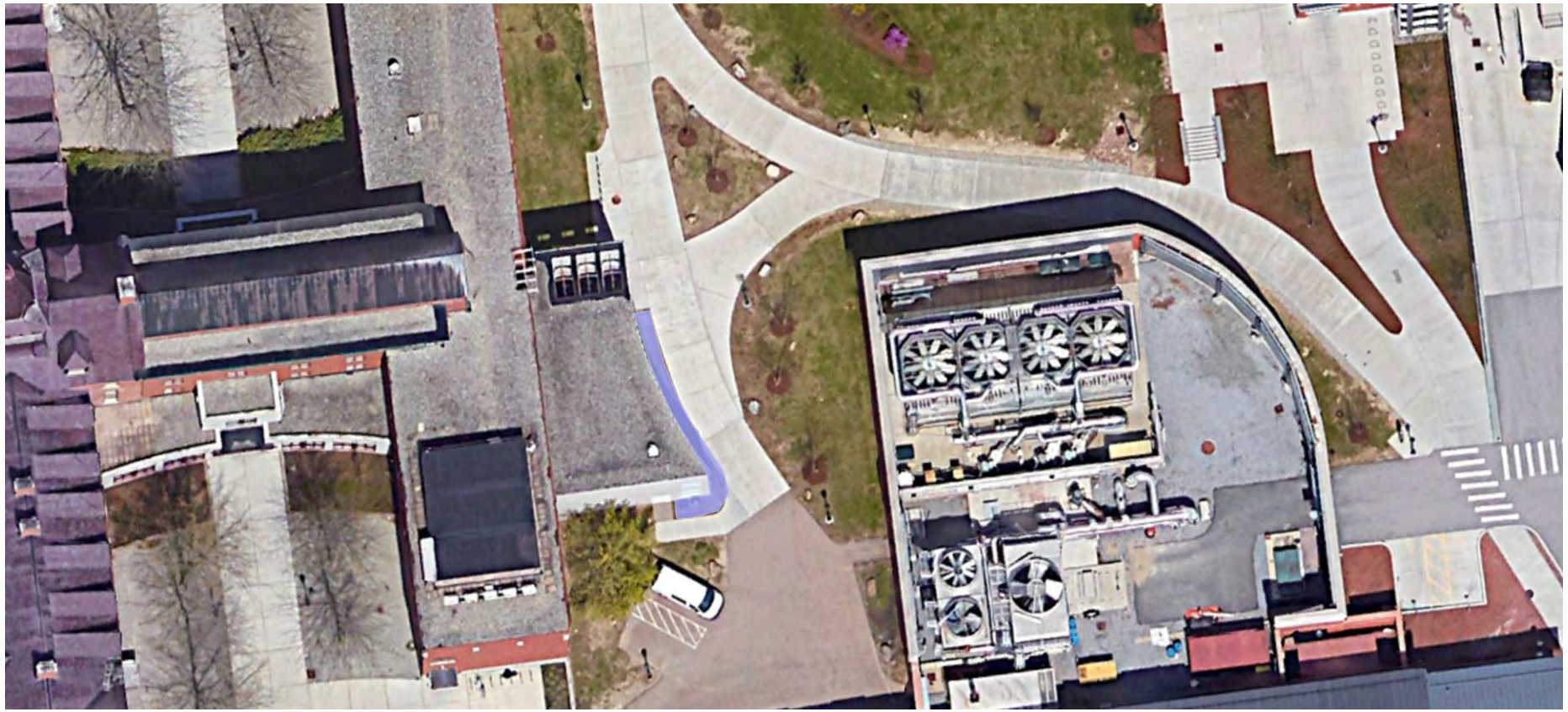

Site 1

Lafayette Hall Entrance

Total Area | 1210 square feet

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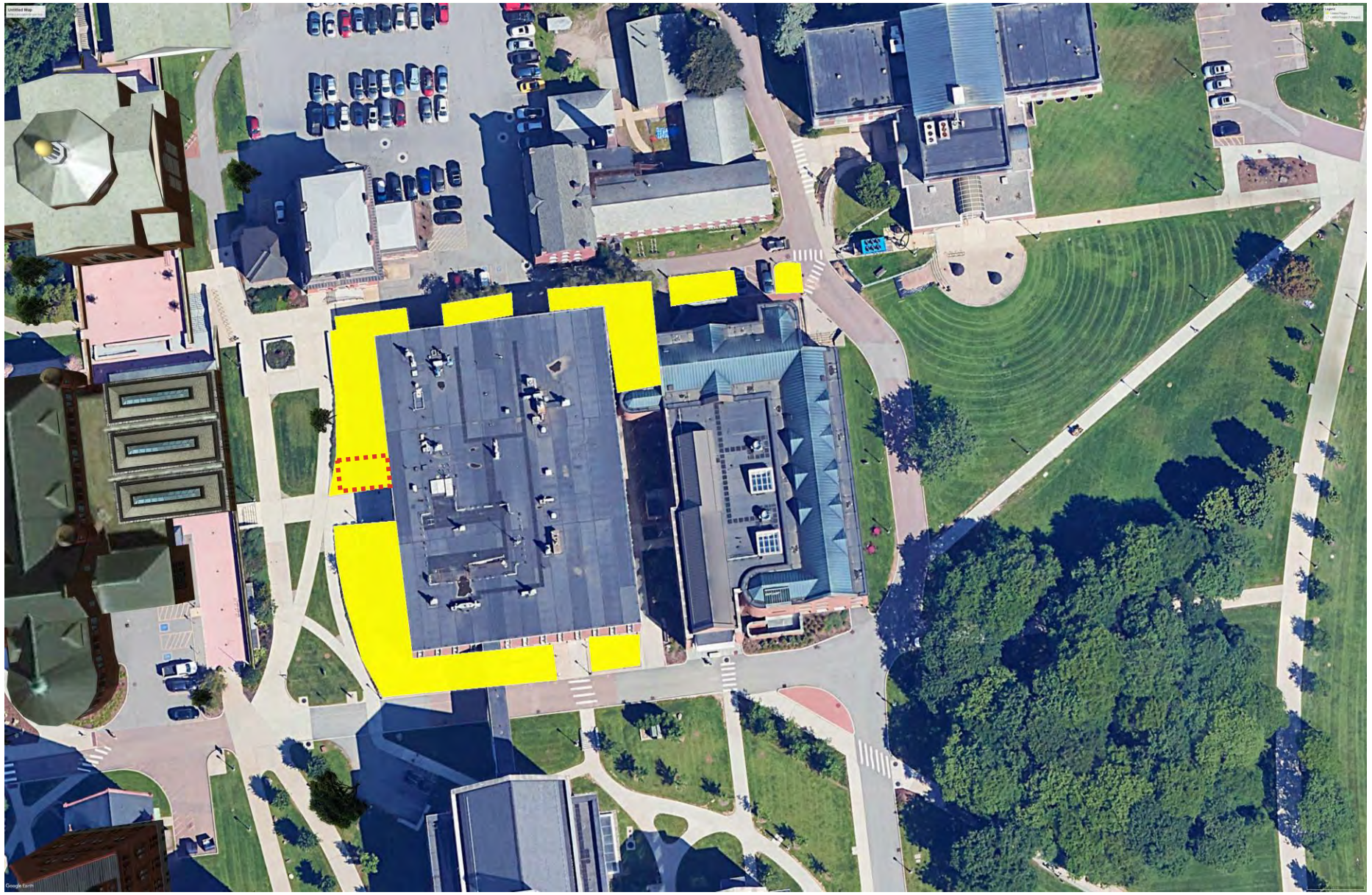
Sites identification

Lafayette Hall Entrance
Area | 1210 square feet
Conditions | Compact soils, bare spots, poor image and biodiversity performance.



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Sitting Area +
Bike racks

Site 2

Votey Hall Perimeter

Total Area | 12,000 square feet

University of Vermont

Site 2

Votey Hall Perimeter

Total Area | 12,000 square feet
Conditions | Bare soils, trees were removed, poor image and biodiversity performance.

Plant Palette

Lafayette Hall Entrance

Baptisia australis (Shrub, Mar-Jul),
Asclepias tuberosa (Perennial, Jun-Oct),
Helenium 'Dunkle Pracht' (Perennial, Jun-Sep),
Solidago spp. 'Fireworks' (Perennial, Aug-Nov),
Iris versicolor (Perennial, May-Jun),
Lobelia cardinalis (Perennial, May-Oct) ,
Agastache foeniculum (Perennial, Jun-Sep),
Calamagrostis x acutiflora Karl Foerster (Grass, Jun-Nov),
Echinacea purpurea 'White swan' (Perennial, Jul-Sep),
Veronicastrum virginicum 'Album' (Perennial, Jul-Sep),
Monarda Didyma Purple Rooster (Perennial, Jun-Aug),
Rudbeckia hirta (Perennial June-Sept),
Symphyotrichum novae-angliae (Perennial, Jul-Oct),
Geranium maculatum (Groundcover, Mar-Jul)

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Plant Palette

Votey Hall

Ilex verticillata (Shrub, Apr-Jul),
Aralia racemosa (Shrub, Jun-Aug),
Athyrium filix femina 'Lady in Red' (Fern, April-Nov),
Hosta 'Krossa Regal' (Perennial, Jun-Aug),
Delphinium exaltum (Perennial, Jul-Sept),
Aquilegia canadensis (Perennial, Feb-Jul),
Helleborus spp. Wedding Bells (Perennial, March-April),
Mertensia virginica (Groundcover, Mar-Apr),
Asarum canadense (Groundcover, Apr-Jun),
Phlox divaricata Blue moon (Groundcover, April-May),
Tiarella cordifolia (Groundcover, May-Jun)

Budget

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Concept	Price per unit	Quantity	Final cost
Plants (1 gallon)	$35	240 (1-3 gallon)	$8,400
Plants (Plugs)	$1.75	6,735 (plugs)	$11,787
Small Trees	$150	12	$1800
Vermont slate slabs	$120	6 square feet	$720
Biochar	$150	1 bag	$150
Mulch (3 inches)	$75	12 cubic yards	$900
Garden website (signage substitute)	$15	80 hours with 7.6% benefit rate	$1,292
Student wages for design process	$15	80 hours with 7.6% benefit rate x 3	$3,874

Total funding request: $28, 923

$2.2 per square foot

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Student Engagement & Support

- There will be student **involvement in designing the naturalistic gardens** and researching the impacts of adding naturalistic gardens.
- The gardens can be utilized as a **living laboratory** to learn about biodiverse plant communities and wildlife biodiversity.
- In addition, research will take place on the impact on **landscape maintenance** and **people's perception**.
- Research of the impact naturalistic gardens can quantity benefits to **student's health**, **pollinator populations**, and **water conservation**.

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Chronogram

06/30
- Planting design drawings.
- Detailed cost list and suppliers.

06/2024-Baseline monitoring

Summer/Fall 2024 Grounds Installation

From installation-06/2026 - Future monitoring
- Monitor wildlife presence.
- Monitor maintenance activities.
- Monitor the university community's perception.

Two-years Volunteer Student Support
- Water or weeding if necessary.
- Pruning season on early March
- Monitor wildlife presence.

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Thanks!