

*Andlinger Center for Energy and the Environment*

*The Courtyard Tradition  
At Princeton University*

*The system of building around true quadrangles or courts has been little practiced and is but just beginning to be understood or appreciated in this country, and the failure to adopt it as the fundamental idea in our American Universities has resulted in the dissipation of good architectural effect and in a senseless waste of space and money. It is worth while to plan for many quadrangles for each will develop a character of its own. These are out-door rooms, with the sky for the ceiling, which, when the sides are once completed, can never be disfigured by later additions.*

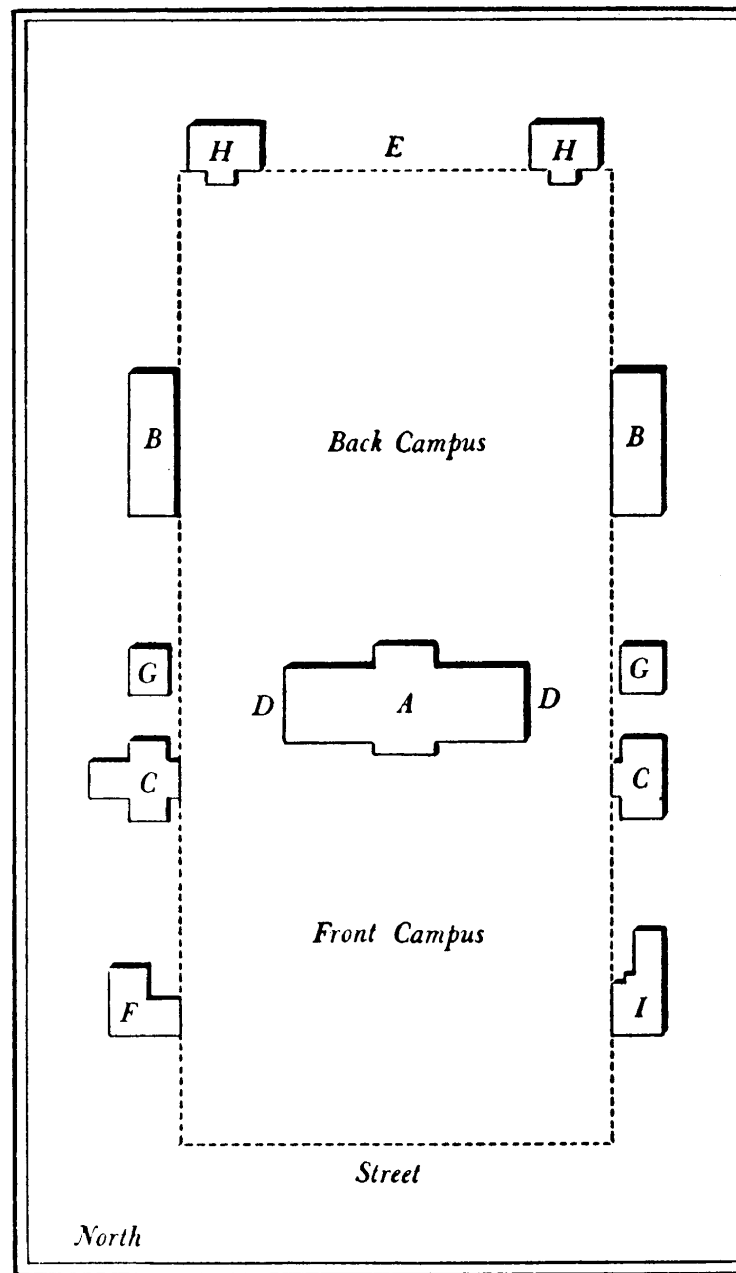
*New Buildings for Washington University, St. Louis, Cope and Stewardson, 1900*

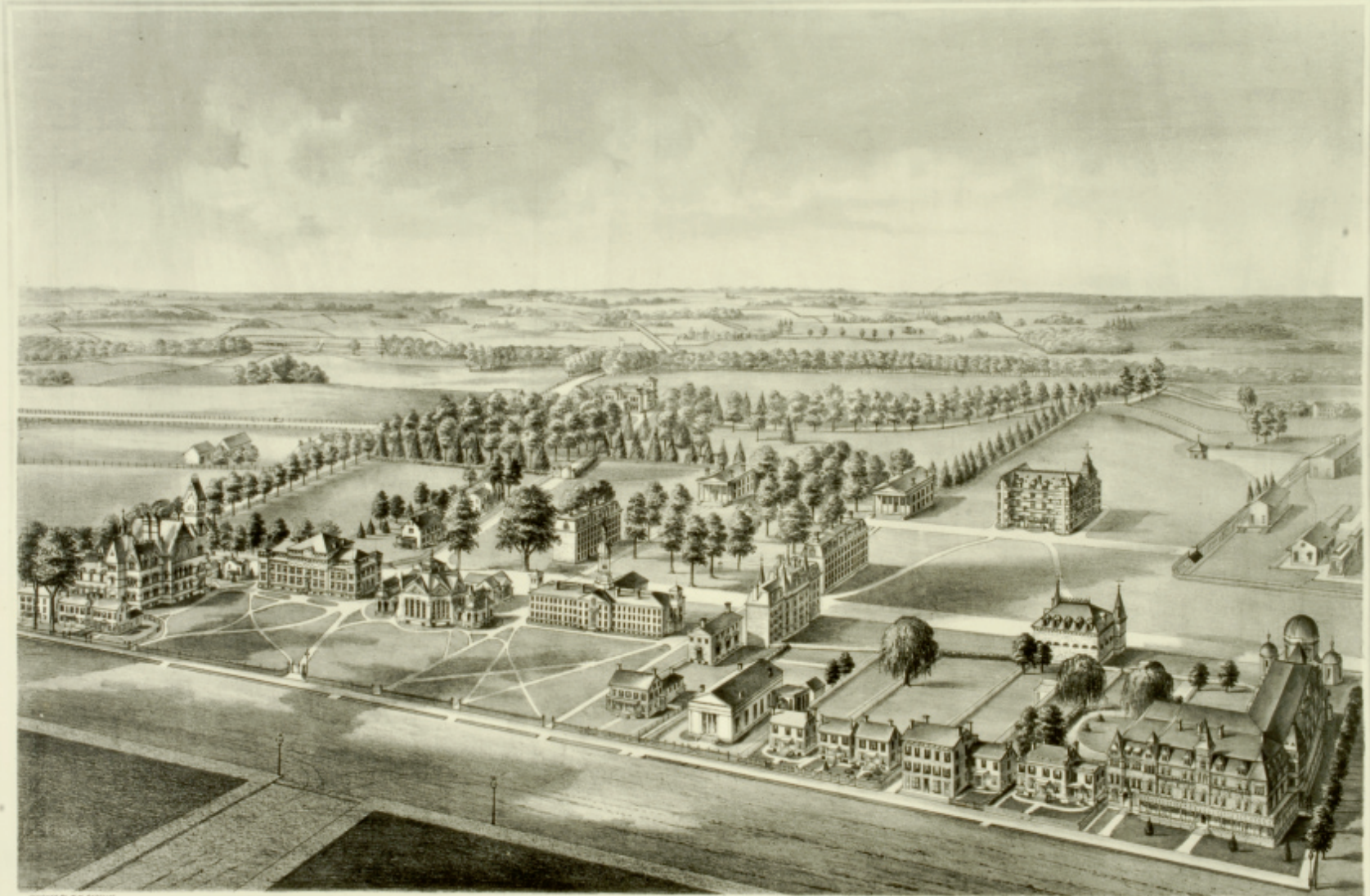
## Illustrative Plan: 2016



# ENTER INTO A GARDEN







DESIGNED BY W. B. RICHMOND

DICKERSON HALL.

WIDE HALL.  
EAST COLLEGE.  
CHapel.  
LIBRARY.

BARBAR HALL.

ELIZ HALL.  
WEST COLLEGE.  
NEWTON HALL.  
PHILADELPHIA HALL.  
PRESIDENT'S DWELLING.

FIRST PRESBYTERIAN CHURCH.

WATER WORKS.  
NEW GYMNASIUM.  
STADIUM.

W. W. GERRIT.  
OBSERVATORY.  
COLLEGE HOTEL.

PUBLISHED BY C. D. HODGKIN, PRINCETON, N. J.

# PRINCETON COLLEGE, PRINCETON, N. J.

Princeton, 1875

SUSTAINABLE INNOVATION  
UNIVERSITY OF WASHINGTON, SEATTLE 2016



Olmstead  
Berkeley 1865



*It is curious that Princeton should thus far be the only university, so handicapped by the defiant individualism of a lighthearted past, to realize that architecture and aesthetic organization are not matters of predilection, but are fundamental necessities.*

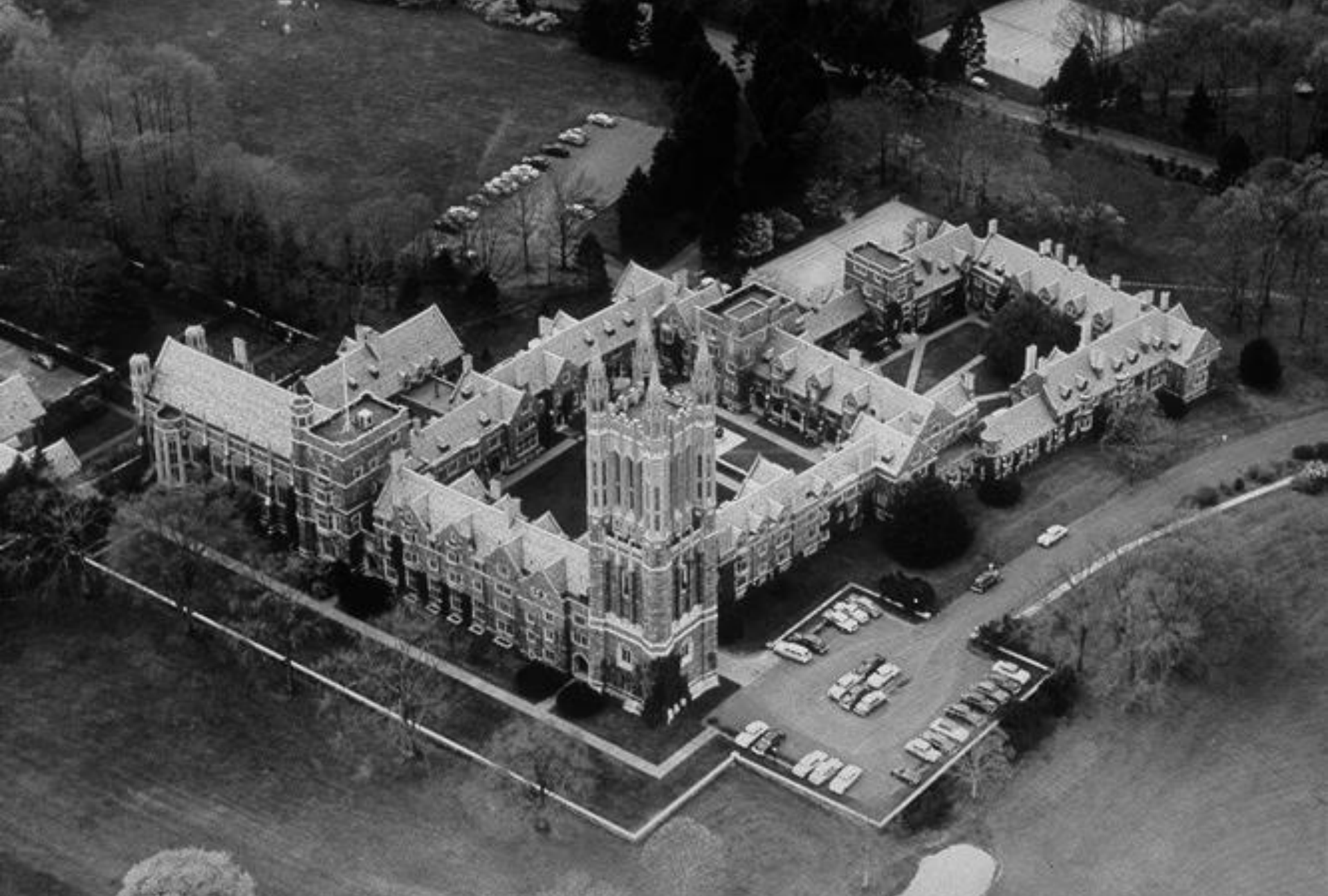
*The nondescript Reunion hall on the other, to the wildly and improbably Romanesque Alexander, the Kubla-Khan fantasies of Witherspoon, the party-colored Renaissance of Brown and the Art building, and finally to the varied yet always beautiful works of the new Gothic dispensation.*

*Certain psychological principles were laid down at once, and theses may be interesting. First of all, a university was conceived as a place where the community life and spirit were supreme, the rest secondary.*

*What the committee on Grounds and Buildings and the Supervising Architect are trying to do is just to express in adequate architectural form the lofty ideals of character, education and scholarship put forward by President Wilson, Dean Fine and Dean West...*

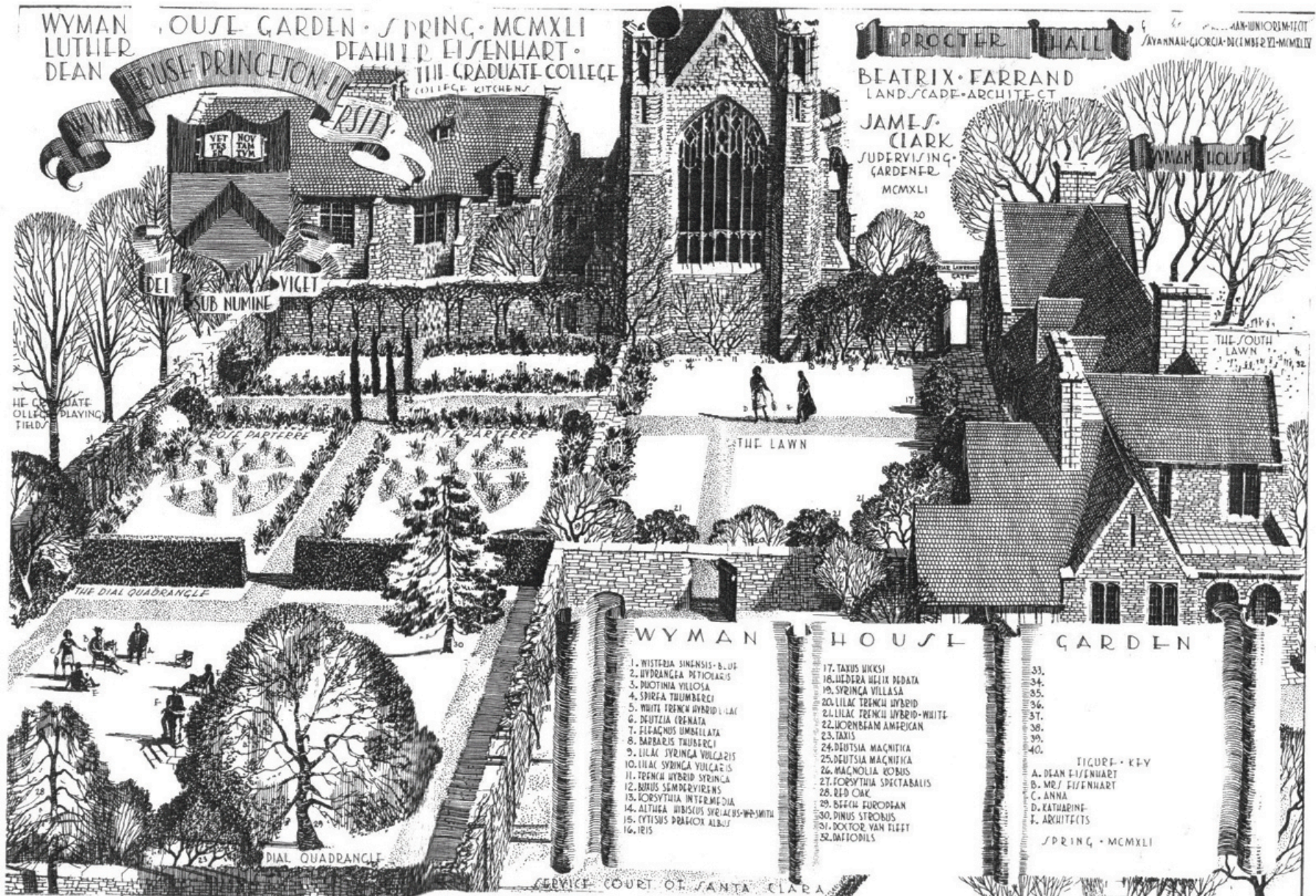


Cram Plan, 1908



Graduate College

1913-26, Ralph Adams Cram and Beatrix Farrand



Graduate College

1913-26, Ralph Adams Cram and Beatrix Farrand



McCosh Court

IIT  
Mies Van der Rohe,  
1941



Engineering Quad,  
Voorhes, Walker Smith  
and Haines, 1962





Robertson Hall, Yamasaki,  
1965



Butler College, Cobb, 2009

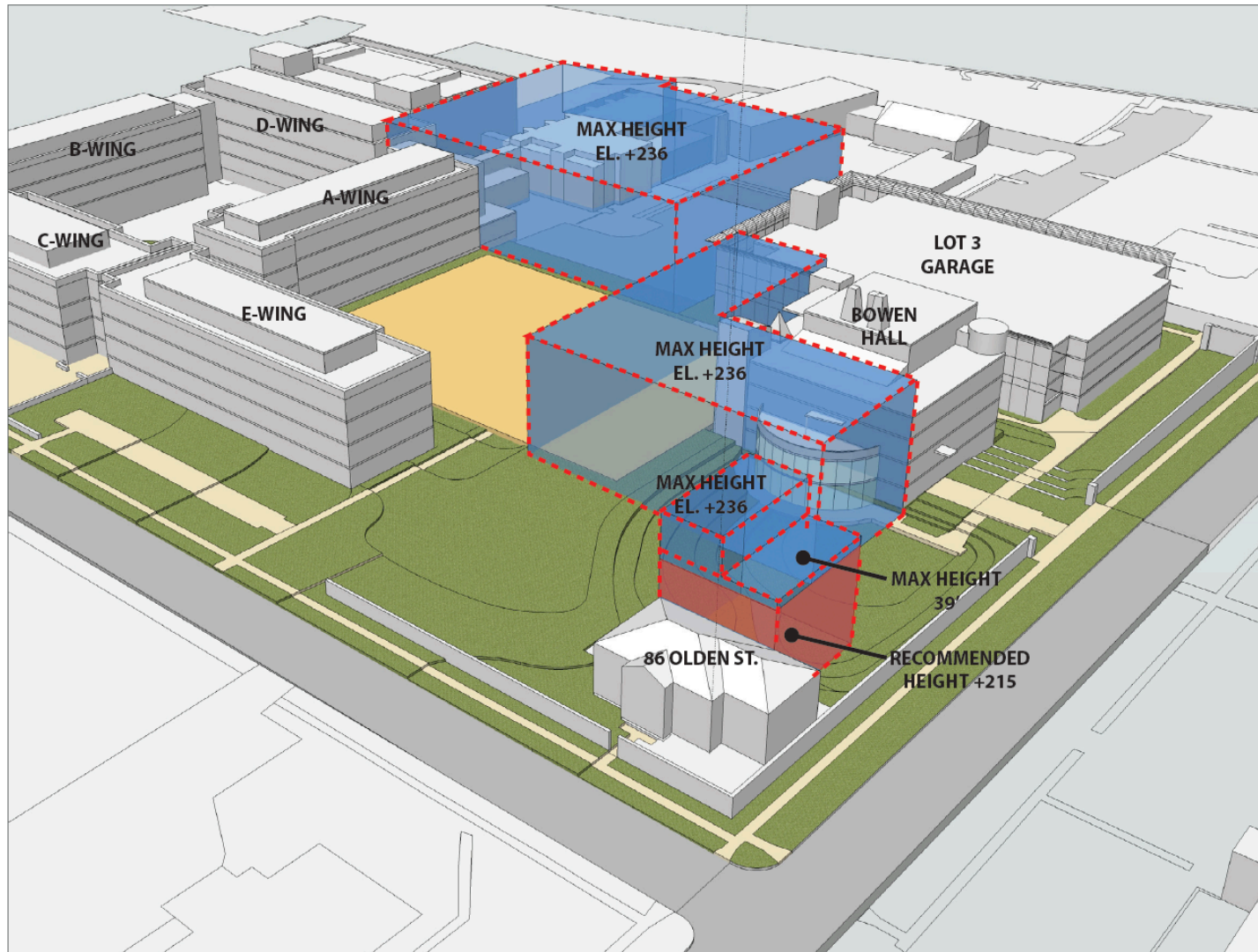


Butler College, Cobb, 2009



University Field, 1876

## Recommended Pathways & Landscape Structure





## Sustainable Design

*Passive design – earth tempered building mass*

*Operable windows for natural ventilation*

*Interior glazed partitions for daylight penetration*

*Storm water and condensate harvesting*

*Green roof and on site storm water management*

*Displaced air in lecture hall*

*High performance envelope*

*Lighting controls*

*Radiant panel system in non-lab areas*

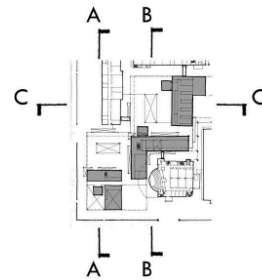
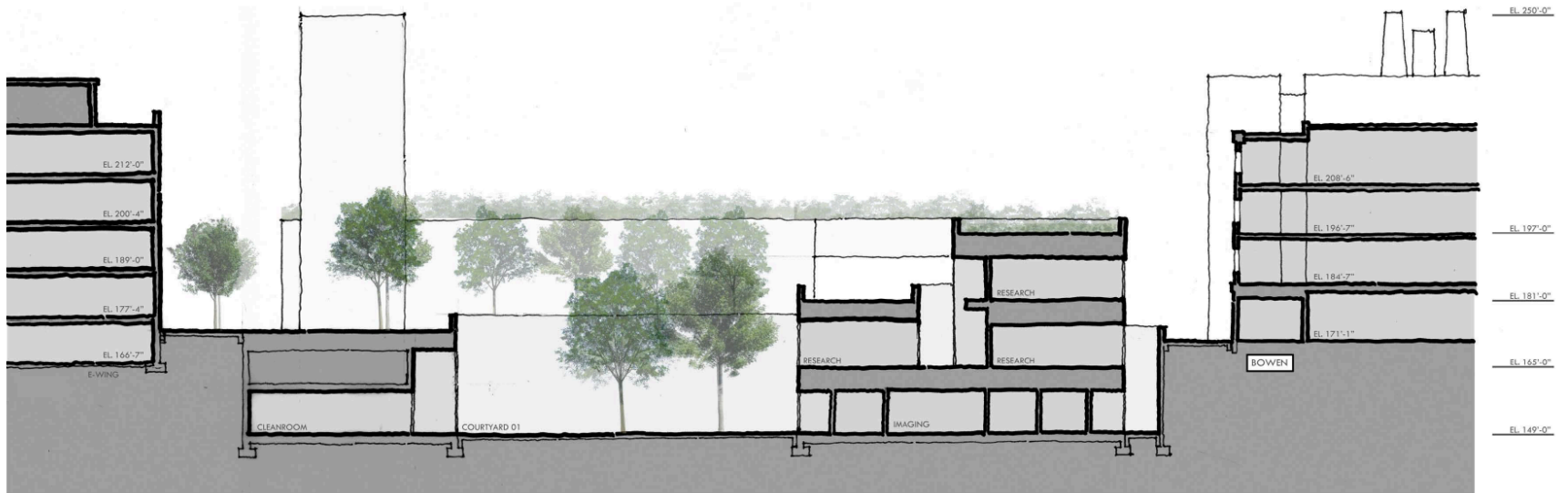
*Shower facilities for bicycle commuters*

*Cascading air flow from offices to laboratories*

*Heat recovery systems*

*Variable frequency drives*

*Ultra low fixtures*



**Andlinger Center for Energy and the Environment**  
Princeton University

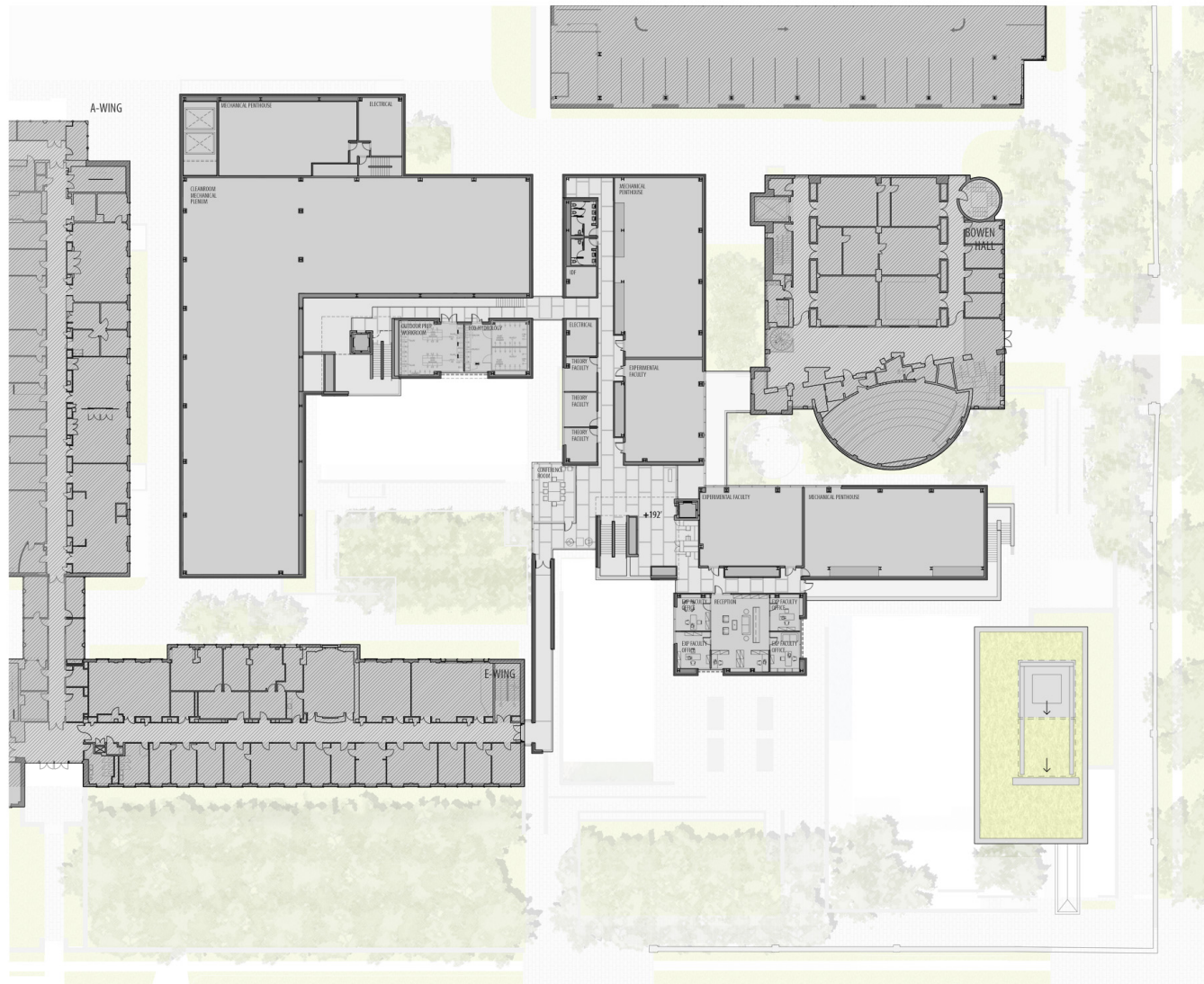
## SECTION B

Tod Williams Billie Tsien Architects  
5/21/2009

Scale: 1/16" = 1'-0"  
0 8' 16' 32'

SUSTAINABLE INNOVATION  
UNIVERSITY OF WASHINGTON, SEATTLE 2016





Andlinger Center for Energy and the Environment  
Princeton University

**200 LEVEL**

Tod Williams Billie Tsien Architects  
7/15/2010

Scale: 1/16" = 1'-0"  
0 16' 32' 64' N



Andlinger Center for Energy and the Environment  
Princeton University

## SECTION D

Todd Williams Billie Tsien Architects

Scale: 1/8" = 1'-0"

0 8' 16' 32'

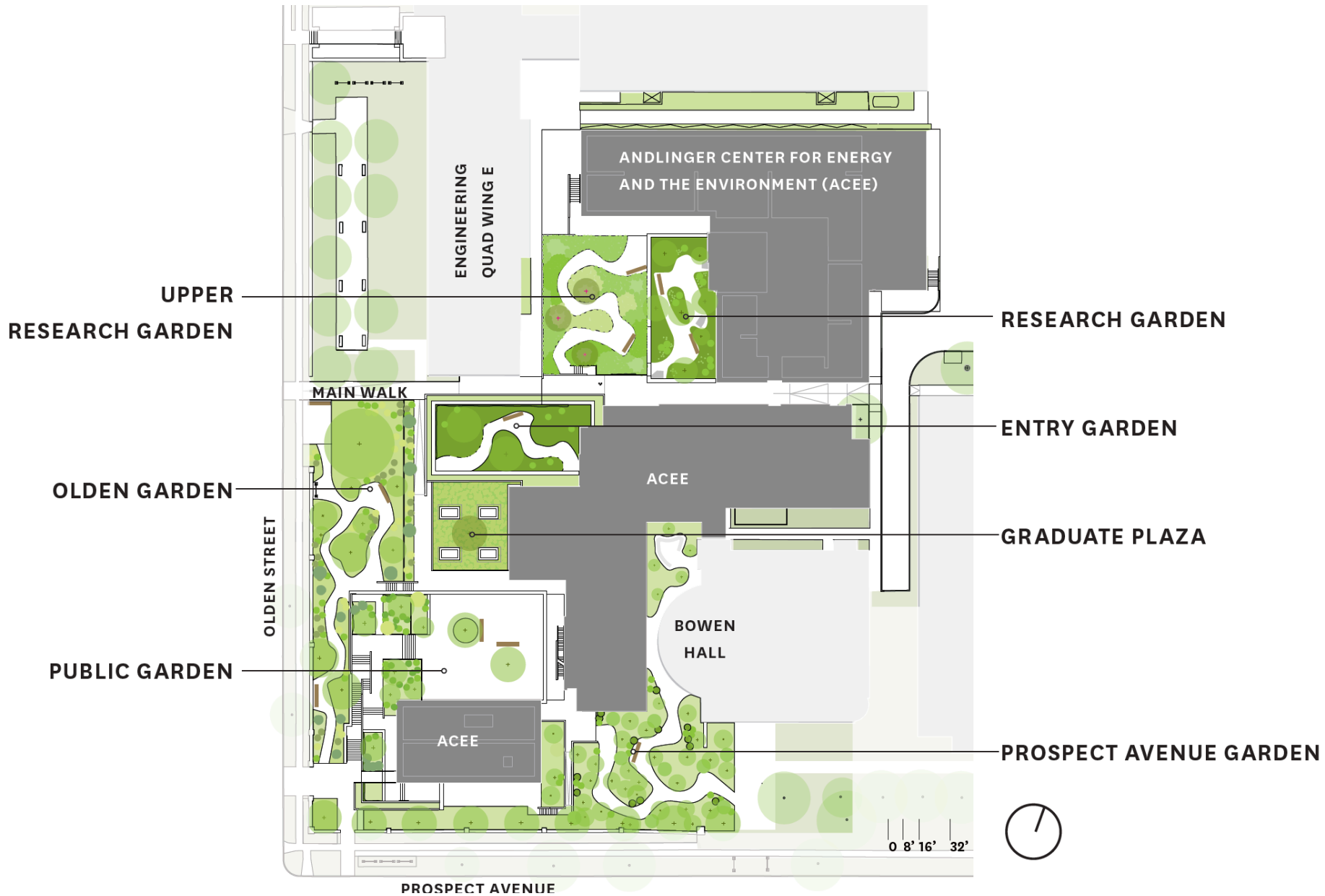








20151116 A 0796 © www.AerialPhotosofNJ.com

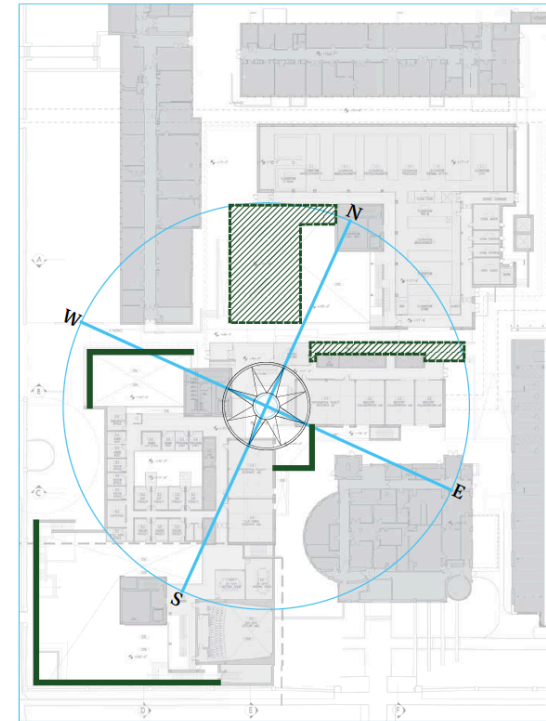


# Courtyard Planting

narrative experience of the solar aspect ratio and horticultural character

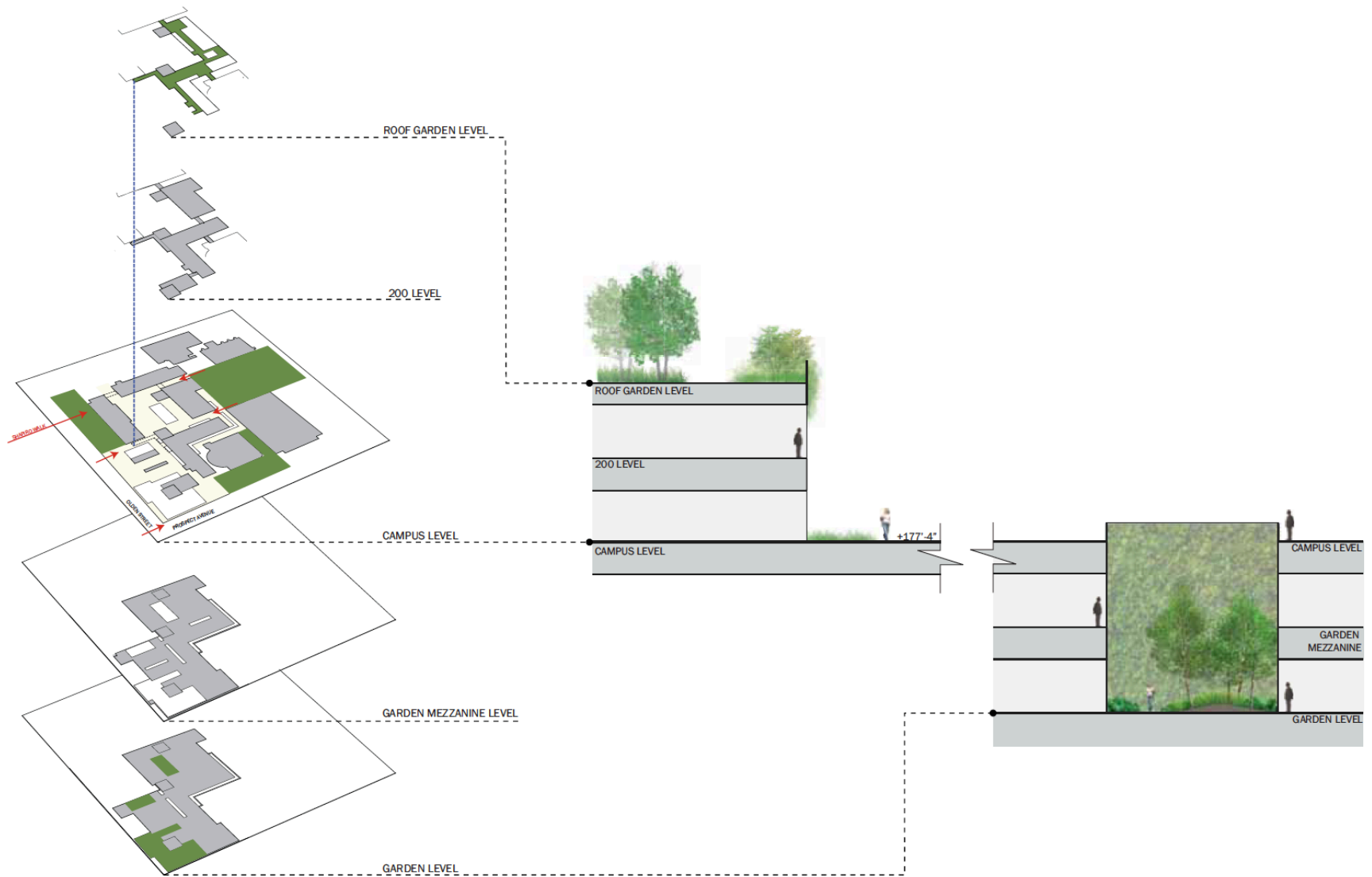


MICHAEL VAN VALKENBURGH ASSOCIATES



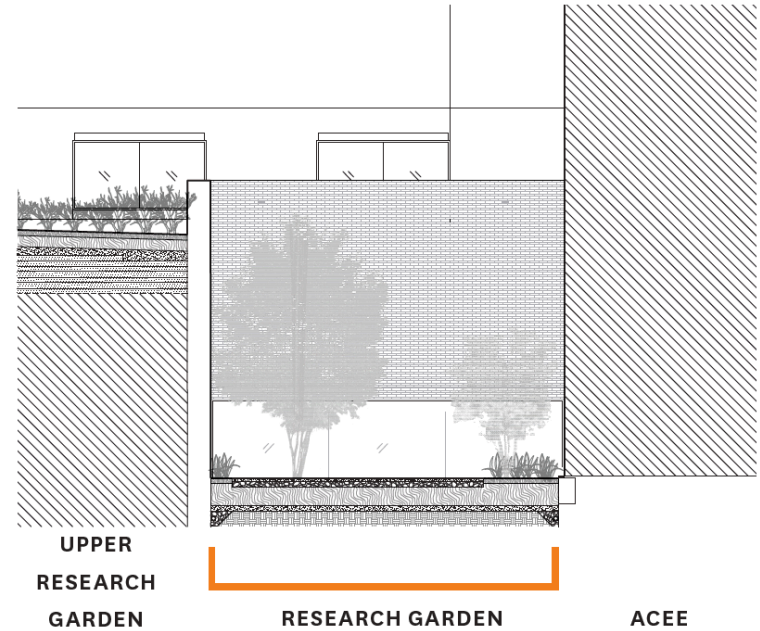
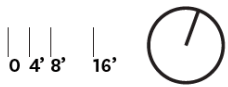
key plan

LANDSCAPE IN SECTION



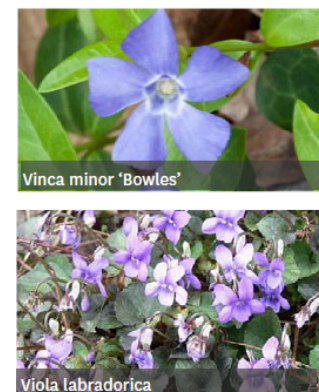
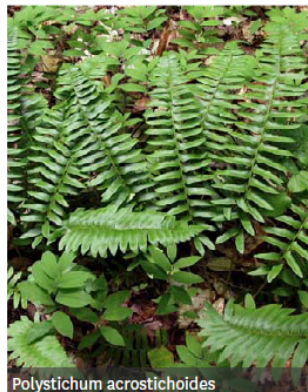
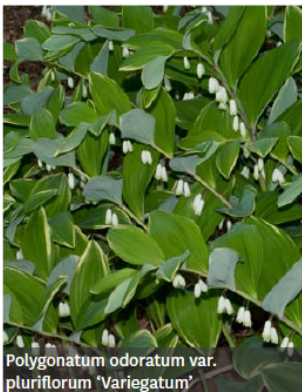
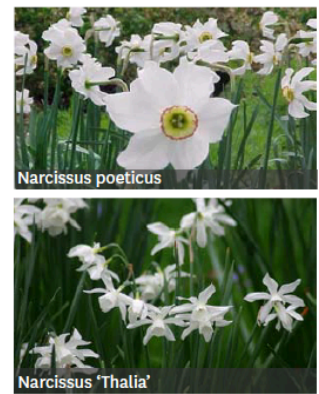
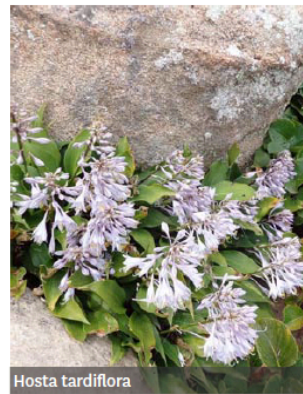
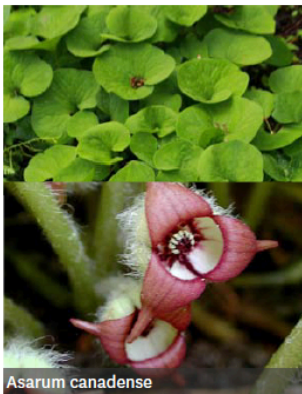
# Design Details

## The Seven Gardens: Research Garden

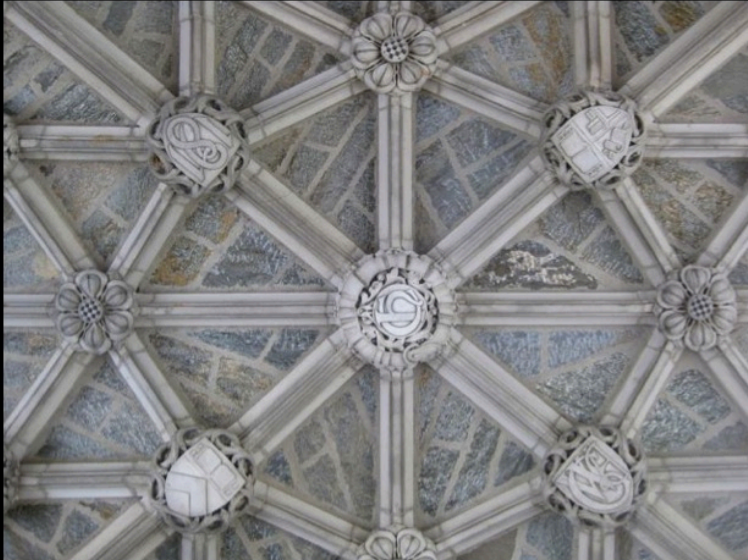


Plant Names	January	February	March	April	May	June	July	August	September	October	November	December
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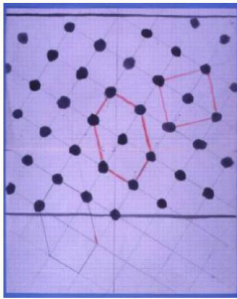
Asarum canadense  
Carex pensylvanica  
Hosta tardiflora  
Lobelia cardinalis  
Narcissus poeticus  
Narcissus 'Thalia'  
Polygonatum odoratum var. pluriflorum 'Variegatum'  
Polystichum acrostichoides  
Smilacina racemosa  
Tiarella cordifolia  
Vinca minor 'Bowles'  
Viola labradorica



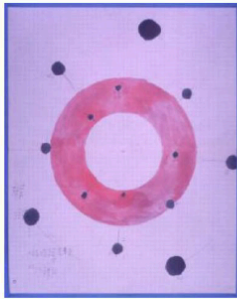
## Research Garden



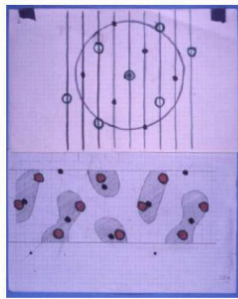




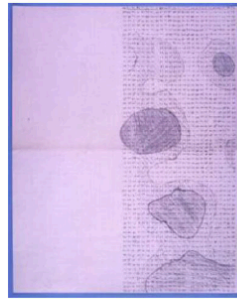
parastichy diagram  
1960  
King's College Cambridge  
P.N. Furbank (Copyright)



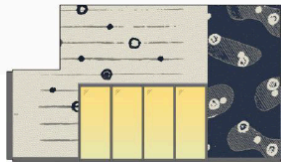
daisy ring diagram  
1960  
King's College Cambridge  
P.N. Furbank (Copyright)



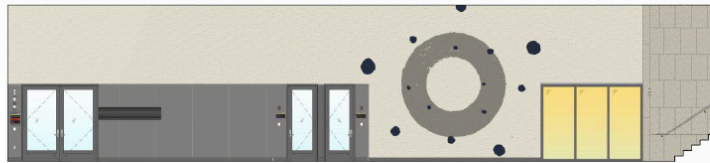
real & fourier space diagram  
1960  
King's College Cambridge  
P.N. Furbank (Copyright)



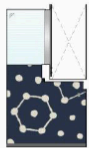
contour plot diagram  
1960  
King's College Cambridge  
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12 CORRIDOR - LOBBY - NORTH



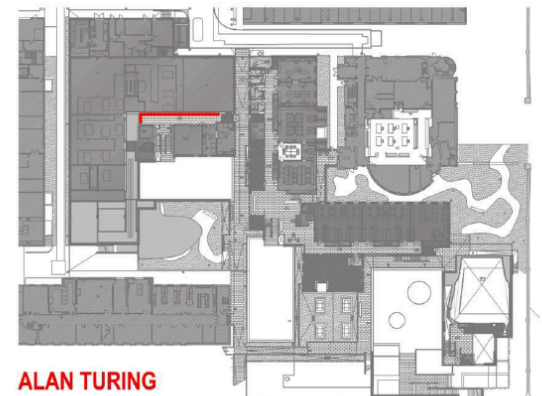
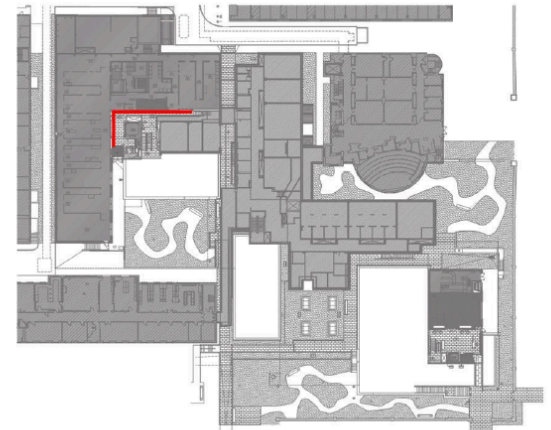
11 CORRIDOR - EAST



13 CORRIDOR - NORTH



17 CORRIDOR - EAST

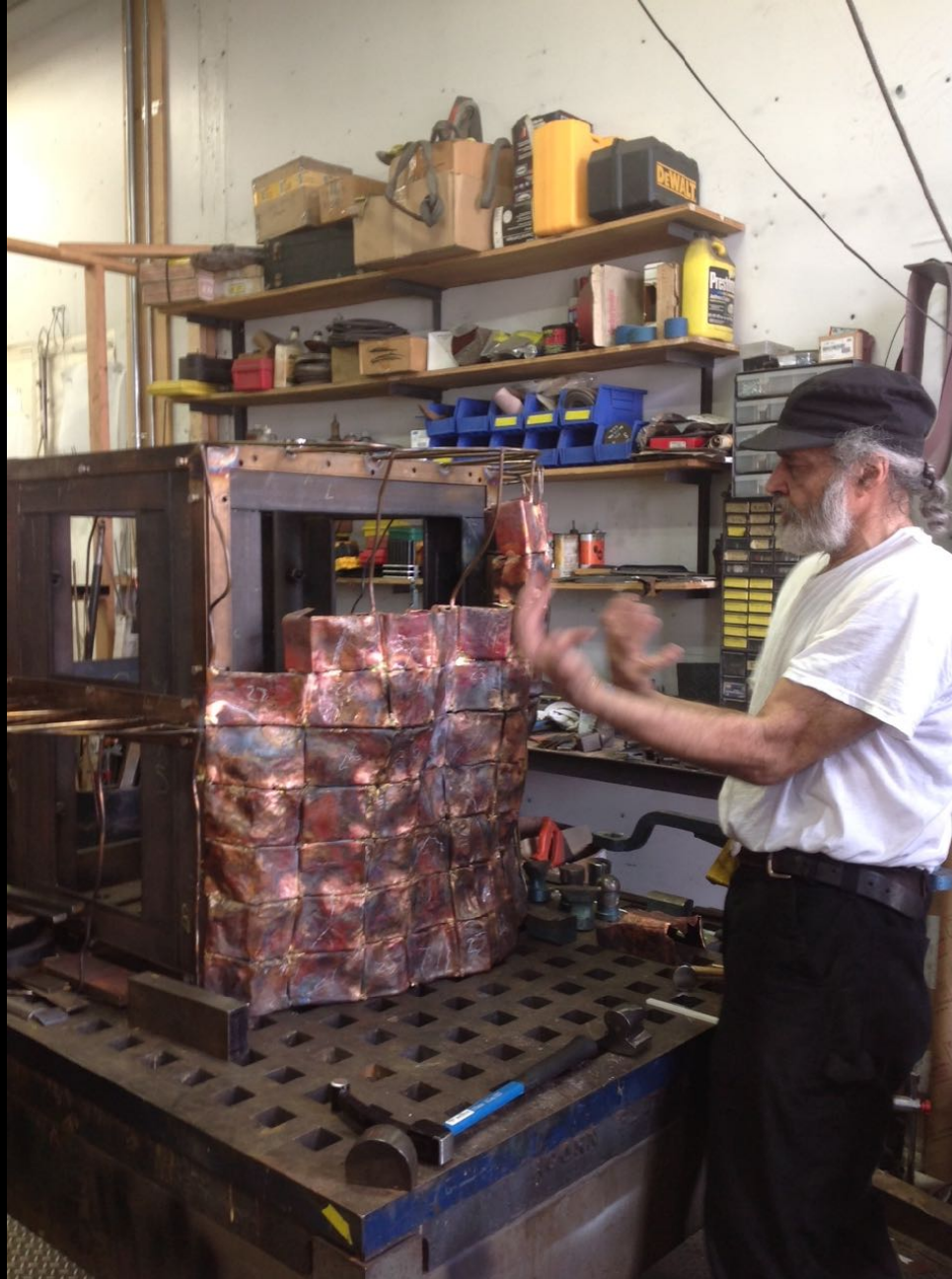


**ALAN TURING**  
Cleanroom & Industry Collaboration



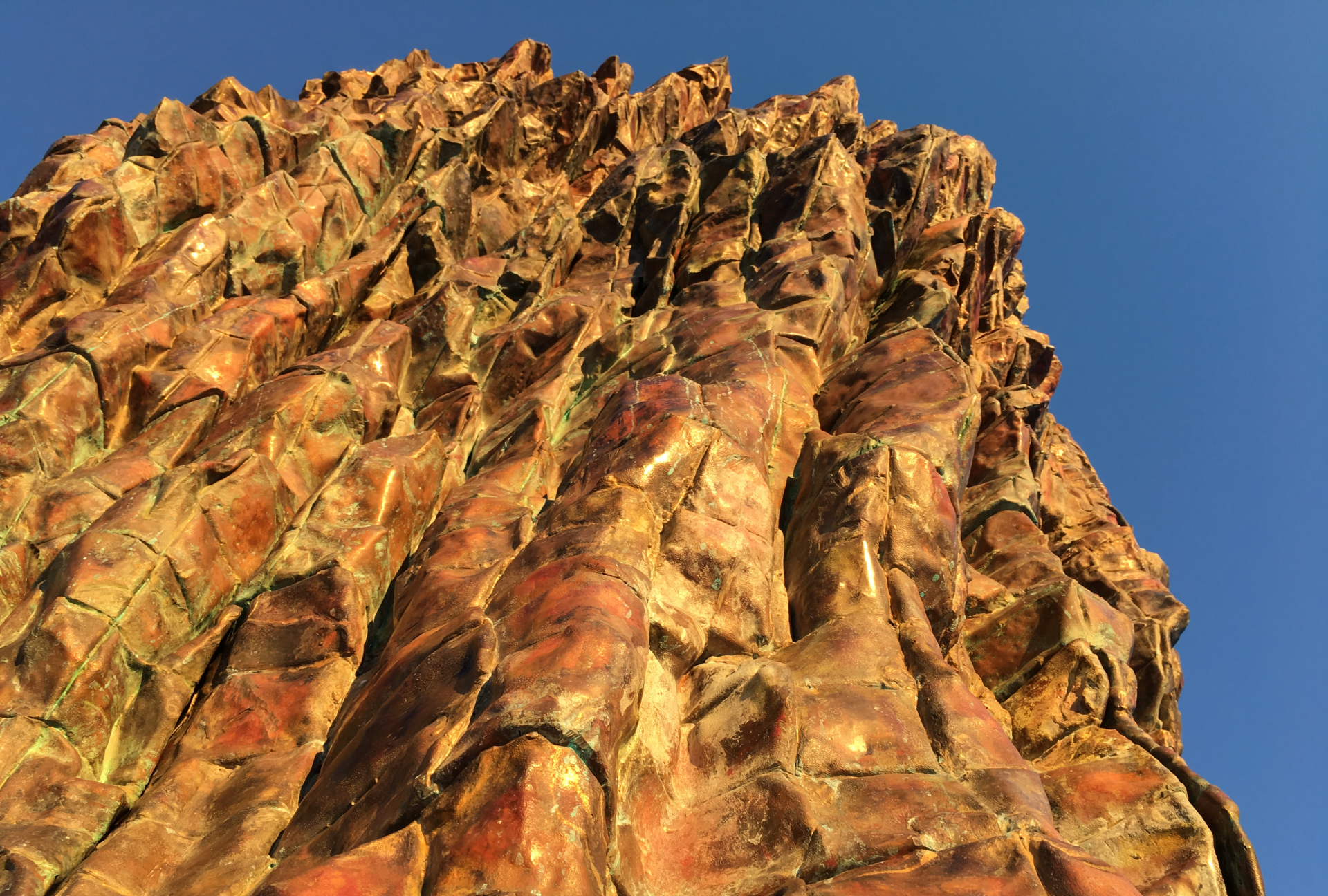
Ursula Von Rydingsvard







Princeton University - Andlinger Center for Energy & the Environment  
Exterior Progression - December 8, 2015 - Photo





Cleanrooms – 30,000 gsf



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## Public Garden





Princeton University - Andlinger Center for Energy & the Environment  
Exterior Progression - - December 8 2015 - Photo 1 - 10



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Entry Garden

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Upper Research Garden



## Research Garden





Prospect Avenue Garden



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