# DARTMOUTH COLLEGE 2001 CAMPUS MASTER PLAN

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THE CAMPUS MASTER PLAN

INTRODUCTION

The college’s normal academic planning process and the Trustees’ Student Life Initiative are the main reasons for this update.

Academic planning lead to programs in Math, Life Sciences, the Arts, The Hood Museum, Thayer Engineering, and Tuck School, among others.

The Student Life Initiative, proposed in 1998, called for improved residential and social life for students. In January of 2000, the Committee on the Student Life Initiative submitted its report to the Board of Trustees. Three of the Committee’s recommendations concern facilities, specifically better housing and social spaces for undergraduates and graduate students.

This edition of the 2001 Campus Master Plan was prepared for the Trustee retreat at Miney, summer 2001. It looks at the campus in two phases: at a Horizon of 5 to 10 Years, and at a Horizon Beyond 10 Years. Some supporting sections have been condensed and others deferred to a later edition.

The reports referenced here in italics are and will be available at Dartmouth’s Facilities Planning Office.

PROCESS

During 2000 and early 2001, the focus of the planning process was on the campus at both 5-10 Years and Beyond 10 Years. Sites for many facilities were proposed and discussed campus-wide. Architects were selected to study specific areas in detail. In summer 2001, we began the process of updating the text and maps.

Additional interviews and fine-tuning will take place this fall, with a complete edition prepared for winter term.

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CONTEX

Planning for the Dartmouth College campus takes place within local and national contexts.

THE REGION While the Upper Valley is still considered rural, the area is changing. Heavy commuter and school traffic into and through Hanover are a concern, particularly in the morning. Hanover, once seen simply as the home of Dartmouth and the Medical Center, is now much more diverse, and building support for change is more challenging than it once was. Town master planning is increasingly concerned with issues of growth, change and sprawl, and citizens are working to protect open space and a small town ambience. Dartmouth and its neighboring towns must work to find common ground for their mutual benefit.

ECONOMICS While the national economy may have slowed, labor and construction costs in the region have not abated. This is because Dartmouth, the Medical Center and other enterprises continue to grow, and thus compete for these services. High energy costs are another concern.

HIGHER EDUCATION Nationwide, education is seen as the ticket to success in an information service economy. Dartmouth competes with the best colleges and universities in the nation for faculty, staff and students. One of the great assets in this competitive environment is our highly regarded campus, shown on this map.
A HISTORY OF THE CAMPUS

In the 1998 Campus Master Plan, we looked at the 225-year growth of the campus in five historic periods, drawing conclusions from each. We summarize that analysis below.

The New Republic 1769-1840 saw the creation of the College Green and Dartmouth Row, a most firm foundation to build a campus.

In The Romantic Period, 1841-1893, the college created College Park, an open space which lost relevance as the mission of the college became more focused on academics. Buildings of this period, such as Rollins and Wilson, also seemed less essential as the college changed.

The Beaux Arts Period, 1893-1940, was the golden age of the campus. Fifty-six buildings survive from this fruitful period; they constitute the Dartmouth campus as most of us know it. They are unified by a Georgian esthetic which held a great diversity together. New open spaces at Tuck Mall, Mass and Fayerweather Rows, and Baker Lawn, added to the richness of the campus.

The Modern Period, 1950-1983 saw a change in emphasis from making a campus to making buildings which were creative and functional. Creating open spaces was placed on a much lower priority. Creating connections with the historic campus was sometimes scorned. Disjointed buildings like Bradley/Gerry resulted. The Hopkins Center is a major exception, but many of the others are slated for demolition.

The Post Modern Period, 1983-present. Architects are once again discovering the importance of history and context in design decisions.

THE CAMPUS MASTER PLAN: DESIGN GUIDELINES

The principles of Preservation and Connection, first outlined in the 1998 Campus Master Plan, guide this update. In this page, we restate those overarching principals and suggest next steps. Taken together, these principals are the Design Guidelines which architects and others serving the college are asked to observe.

PRESERVATION

The college must preserve its structures, open spaces and landscapes for future generations.

As a first step, the college has surveyed all its structures and landscapes and entered historical data into a database available to all. See Marlene Heck's Documentation of Dartmouth College Architecture, 6/2001, and on line. The next step is to categorize structures and open spaces according to relative importance. Even in the absence of this categorization, an informal priority is in effect: buildings, open space and landscapes at the core campus are widely regarded as highest priority.

CONNECTION

When building new, find a balance between connective, campus-making and innovative building design. Both are important.

By connective campus-making, we mean creating physical and aesthetic connections to the historic campus to maintain a coherent whole. Among the aspects of the campus that we believe worth connecting to are Dartmouth's sense of place, history, linkages with Hanover, scale, landscape, open space, and existing buildings.

Pedestrian circulation is one of the strongest connectors on campus so we favor it over vehicular circulation.

Among college buildings, there is a unifying Georgian esthetic within a campus containing diverse architectural styles. There is a predominance of red brick buildings in Flemish Bond, vertical, white, multi-paned windows, entry pediments, and pitched copper roofs.

The size of proposed college buildings has become an issue. Contemporary programs, both academic or residential, are calling for buildings with much larger footprints than the historic college structure of 100 plus feet in length. In effect, these programs result in Centers rather than more traditional free-standing buildings. We urge that these larger structures be shaped, both in floor plan and roof line, to remain in scale with the older college buildings. Equally important, we urge that campus-wide circulation be encouraged through these new centers, as at the Hood Museum, so that they do not become barriers, as at the Science Center.

While we urge new development to retain a character which can be seen as clearly "Dartmouth," a carefully sited new building that contrasts with the rest of the campus can be successful.

As the campus grows north of Maynard Street and even into Dewey Field, it is inevitable that these parts of the campus will seem separate from the campus core. There should be no doubt, however, that these new parts of the campus are, by design, Dartmouth College.
THE CAMPUS MASTER PLAN
FIVE TO TEN YEAR HORIZON

Academic growth and the Student Life Initiative will result in intense construction in this period. As this map shows, the historic core of the campus remains largely unchanged, with a possible addition at Bartlett Hall. Beyond the core, proposals are shown here in multiple colored dots. Subsequent pages in this Campus Master Plan offer specific details. To summarize, in the decade ahead, the college plans to produce:

- Academic space for Math, Life Sciences, the Arts, a Humanities Center, Thayer Engineering and Tuck Executive Education, among others.
- Housing for 5,600 undergraduates at Tuck Mall and North of Maynard. Housing for graduate students: 80 at N. Park Street and 24 downtown (HIC). Tuck School: 120.
- A new dining hall, graduate center, and other student life facilities.
- A parking garage at Cummings.
- Infrastructure changes including an additional boiler for the heating plant.
- Administrative space.

The challenge is to connect these varied proposals to the historic core so that the campus remains a whole.

Not shown on this map, the college continues to build at Centerra in Lebanon, and to rent space off campus, in order to relocate administrative functions. For faculty and graduate students, the college plans expansion of Grasse Road and substantial renovations and rebuilding at Sachem and Rivercrest. In the future, particularly with a more developed shuttle system, these could be connected into a greater Dartmouth campus.

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ACADEMIC SPACE
FIVE TO TEN YEAR HORIZON

Kemery. This structure for the Mathematics Department is currently planned at 52,000 – 60,000 gross square feet. The architects are Moore Ruble Yudell and Bruner/Cott.

Life Sciences. In the early programming stage, this department needs about 211,000 net square feet. At 60% to 50% efficiency, this results in 350,000 to 422,000 gross square feet. Clearing a site for this project will probably require demolition and relocation, further increasing its size. Biology will vacate Gilman, available for other uses. See Life Sciences Initiative, 8/17/00.

The Arts. In the early programming stage, these departments need about 84,000 net sq. ft. At 50% efficiency, this results in 168,000 gross square feet. See Arts Center, 4/13/01.

The Hood. Dartmouth’s art museum requests about 27,000 additional net square feet to meet its mission. At 50% efficiency, this is 54,000 gross square feet. See Arts Center, 4/13/01.

Thayer School is raising funds for a 40,000 net sq ft lab/office/classroom building. At 60% to 50% efficiency, this results in a 67,000 to 80,000 gross sq ft building. Architect selection is under way. See Thayer Progress Report, 2/5/00.

Tuck School proposes to build a second residence hall housing graduate students during the school year and executives in the summer. It would also include classroom space, and will require demolition of Hinsman, an existing River Cluster residence with 57 undergraduate beds.

Humanities Center and Dickey Center. Space needs for these programs are in the early programming stages.

Institute for Security Technology Studies. Currently in rented space on Lyme Road, space needs are to be determined.

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STUDENT RESIDENCES
FIVE TO TEN YEAR HORIZON

Undergraduates. The Trustees authorized the administration to build 600 additional beds so that all students who want on-campus housing can have it. In addition, the Trustees have long requested the demolition of the River cluster to allow Tuck and Thayer to grow. In the five to ten year horizon, the following sites, shown as red dots, are in planning.

Tuck Mall In design for 178 beds, with social spaces to also serve nearby Russell Sage and Butterfield. The architects are Atkin Olshin Lawson-Bell of Philadelphia.

North of Maynard In planning for about 425 beds in a first phase and 65 in a second phase for a total of 510 beds. The architects are Moore Ruble Yudell from Santa Monica and Bruner/Cott from Cambridge, MA.

Temporary An unanticipated surge in undergraduate enrollment requires 80 additional beds for up to three years. Modular housing, ordered this summer, will be in place by fall.

Graduate Students The Trustees authorized increased beds for graduate students. The development of downtown HIC Properties should yield 24 beds. Demolition and redevelopment along North Park Street should net 80 beds. William Rawn of Boston is the architect for these proposals. Finally, Tuck will build a second residence hall adding from 100 to 120 beds and executive education classrooms.
STUDENT CENTER & DINING
FIVE TO TEN YEAR HORIZON

Alternatives for both student dining and a student social center have been in study for over two years. In February, 1998, the Trustees announced the Student Life Initiative. Centerbrook, a Connecticut planning and architecture firm already engaged by the college, was commissioned to survey the needs and assist the college's Committee on the Student Life Initiative. The Committee made its report in January, 2000 and Centerbrook completed their study in July, 2000. See Student Life Initiative, 1/00 and Student Life Master Plan 7/4/00.

Following many of the Committee's recommendations, Centerbrook proposed two major facility additions: a Student Center at Collis/Thayer/Robinson, and an Athletic Center addition to Alumni Gym. However, costs of these proposals were in excess of available funding and since summer 2000, the college has been seeking alternatives and looking at phasing strategies.

Currently, the college is considering three scenarios for North of Maynard:

1) Move a majority of the dining and some student services and recreation space north of Maynard.
2) Move virtually all undergraduate dining and student activities north to Maynard. Convert Collis and Thayer to other uses.
3) Move only a portion of dining north to Maynard, with little change in campus social spaces.

Facilities for athletics and recreation would be deferred, except for space provided in 1) above.
Utilities: Five to Ten Year Horizon

Construction proposed by the college and documented in this Campus Master Plan will require major investments in both new capacity as well as upgrading existing utility systems.

Heating Plant

Current plant capacity can support proposed growth in residence halls, a dining facility, and academic space for Math and Thayer School. Beyond this, the replacement of an existing boiler will be required for the proposed Life Sciences facility, and the addition of a new boiler will be required for any further proposals. The present preferred location for this new boiler, as shown in this map, is adjacent to the current plant, in what is now academic space in Clement Hall. If this site is chosen, the Arts Expansion project must be expedited as the next project to be completed after Life Sciences. In any of the scenarios presently being considered, the college must amend its air permits, and the time for constructing additional capacity is at least four years for boiler replacement and six and a half years for a new boiler. Thus planning for this work must begin this year.

Fuel Choices

With significant increases in oil costs and long term concerns about availability, wood should be considered as an alternative. Natural gas is not available in Hanover. While wood has the advantage of being a sustainable New England fuel, there would be very significant challenges in the siting of a wood burning plant, including the transportation and storage of wood and ash.

Steam Distribution

Upgrading will be required, particularly to the west serving Thayer School and the Tuck Mall residence hall. To the north at the former hospital site, the steam tunnel completed five years ago can accommodate future growth, but some older, lower campus lines will need to be replaced to support new capacity. Some of the mains serving the older parts of the campus are over 50 years old and replacement must be planned with new construction.

Electrical Distribution

Expansion of the campus distribution system will be required, including a new substation, north of Burke, and a feeder by the Utility Company to serve growth north of Maynard.

Chilled Water

There are two pressures on existing chilled water capacity. First, faculty, staff and students are increasingly expecting year-around comfort, though a decision on campus-wide A/C is still open. Second, all new facilities will require chilled water. The existing plant, partially completed in 1988, will support proposals north of Maynard, including Life Sciences and the Dining Center. Elsewhere, and specifically the balance of the SLI projects at Thayer dining, Collis, Robinson and athletic/recreation facilities local chillers will provide chilled water as part of these projects.

Storm Water

New construction will require a long term approach to treatment and detention of storm water, to comply with stringent State regulations. This can have a substantial affect on the appearance of the landscape.

Water and Sewer

Existing services are adequate for both short and long term growth. The college will continue to work with the Town to ensure ample capacities for both parties.
TRAFFIC and PARKING

Traffic and parking have been the subjects of intensive study by the college over the past two years, involving Resource Systems Group from Norwich and Walker Parking Consultants. See Dartmouth 10-Year Master Plan Circulation and Parking Report, 2/28/01, and Parking Alternatives Study, 3/15/01.

Vehicular Traffic was reduced within the Town with the relocation of the Medical Center, but DHMC traffic continues to be a major factor in peak periods. The college is exploring traffic calming devices to improve pedestrian safety, as well as employee incentives to reduce the use of cars, encourage carpooling, use of public transit and walking/bicycling.

These efforts have been conducted in concert with the Town and the Dresden School District. The ultimate disposition of the Dresden property can have a major impact on traffic.

Parking demand at the college is now at 89% of capacity which is effectively "full." Exacerbating the problem, most of the parking is at the campus edges, not at the core where many people work, as shown on this map. The 10-Year Master Plan, including projected employee growth, will result in a need for about 1,380 new parking spaces in one or more parking garages.

These structures should be located to intercept incoming traffic before it moves through the campus. The total morning peak Dartmouth employee traffic flows are: Ledyard Bridge = 53%; NH 10 south of Downtown = 7%; NH 10 north to Lyme = 5%; and NH 120 at Lebanon = 35%.

The college is exploring one of three sites for a possible structure to accommodate the Ledyard traffic: Cummings lot, Ledyard lot and off West Wheelock Street south of the cemetery. A second structure would be built later in Dewey Field or along the Lebanon Street corridor.
THE CAMPUS MASTER PLAN
BEYOND TEN YEARS

After about fifteen years, the core campus will essentially be built out. This map shows the few remaining possible sites at the edges of College Park, in Berry Row, and behind Alumni Gym. Tuck and Thayer will expand to the west.

The balance of the Student Center will be completed, either at Thayer/Collis/Robinson or north of Maynard. A major athletic/recreation center will be added to Alumni Gym.

The major expansion will likely be North of Dewey Field, into the golf course. Dewey hill forms a topographic separation between the campus and the golf course. Removal of the east end of the hill would allow a new road from the Dartmouth Medical School north to the golf course. The west end of the hill must be retained as it abuts neighbors on Ropes Ferry Road.

The new internal road would create development sites. The first building could be a garage, located just off Lyme Road. Subsequent sites could accommodate administrative and academic needs. These buildings should be buffered from Lyme Road by setbacks and landscaping. Further out Lyme Road, this road could link to the 9-hole property. Within Dewey Field, a mix of academic and residential uses can be accommodated.

The college shuttle bus system will be substantially expanded in this period, enabling use of land now considered beyond the core.

There are substantial issues with this proposal, including long walking distances, very difficult terrain, Pine Park, Gill Brook and, of course, the golf course itself. Yet the golf course is our land bank for beyond ten years, connected internally as shown here, or via Lyme Road.

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STUDENT RESIDENCES
BEYOND TEN YEARS

UNDERGRADUATES. Sites for undergraduate residences beyond ten years are few, because they must be within reasonable walking distances. Shown here in red dots within a ten minute walking circle:

Berry Row 80 beds here would create the mix of academic and residences typical at Dartmouth. Alternatively, this is an excellent academic site.

Choates A rebuilding of existing buildings which may or may not increase bed counts. At the Choate/Roth site, 75 new beds are possible.

Webster Avenue Approximately 125 beds in two buildings.

Observatory 50 beds in two low buildings. These will be visible from the College Green so development must proceed with great sensitivity.

North College Street one 25 bed house at the edge of College Park.

Varsity Tennis Courts 160 beds in one of the few close-in sites. Alternatively, this site would be excellent for an academic building.

GRADUATE STUDENTS Shown in red dots outside a ten minute walking circle:

Dewey Field 270 beds in nine college owned "off-campus" apartment buildings. These could be for either undergraduates or graduate students.

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CAMPUS LANDSCAPE MASTER PLAN

The focus of the Campus Landscape Master Plan is renewal and evolution. Preservation of Dartmouth's two-hundred-and-thirty year landscape legacy requires constant renewal. Yet the landscape must also evolve to meet the contemporary needs of the college while ensuring opportunities for future growth. By meeting these goals, the beauty and charm of the much beloved and historically significant campus will be preserved and enriched.

PROCESS  In March of 1999 the College commissioned the landscape architectural firm of Saucier + Flynn, Ltd., of Lebanon, NH, to develop a comprehensive landscape master plan. The firm worked closely with the Office of Facilities Operations & Management, the Facilities Planning Office and the campus master planner.

Saucier + Flynn analyzed the historical evolution of the campus to ascertain the fundamental organization and aesthetic principles that make the landscape unique. They conducted an analysis of the contemporary campus to observe its current state and to better understand the issues confronted by campus stewards day-to-day. They completed circulation and open space studies to determine campus spatial hierarchies and assessed plant material, site furnishings and management practices to yield an understanding of campus detail. With diagrams and drawings, Saucier & Flynn helped visually interpret data, revealing much about campus organization, usage, and connections.

In areas that the Campus Master Plan has designated for growth, Saucier + Flynn explored design strategies for developing open space to preserve the quintessential character of the Dartmouth campus. In areas not slated for growth, they proposed a series of renewal projects to address an eroding campus landscape.

Saucier + Flynn also developed a set of Landscape Construction Standards and Landscape Design Guidelines to support the planning and design principles established in the Landscape Master Plan.

A draft of the Landscape Construction Standards was submitted for review in December of 2000. Drafts of the Landscape Master Plan and Landscape Design Guidelines were submitted in May and June of 2001.

Saucier + Flynn's reports have become basic working tools for the college, both in the office and out in the field. They are:

**Historical Evolution and Preservation Strategies for the Landscape**
- No date. A comprehensive history of the growth of not just the landscape but also the campus.
- **Campus Tree Inventory** 4/99
  - 1,746 trees inventoried.
- **Campus Landscape Construction Standards** 12/15/00
- **2001 Campus Landscape Master Plan** 4/25/01
- **Landscape Design Guidelines**, 5/5/01

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COLLEGE PARK

College Park, the college's central wooded open space, is rich with history, having been built by students at the very threshold of the American Park Movement. Today it is a refuge for quiet reflection and informal recreation. We believe College Park should be preserved, with modest development along some of its edges.

We suggest these goals:

- Respect the historic and spatial integrity of the park.
- As the edges of College Park become more developed, strengthening the pedestrian connections between the park and surrounding facilities and streets.
- As usage of the park shows substantial increase, enhance pedestrian circulation through the park, with appropriate amenities such as portals and gateways that announce entry and extend invitation to the park.

The possible edge developments could include science expansion at the west and student residences near the Shattuck Observatory and the north end. Plans are already under way for graduate student housing along North Park Street.

As the campus grows to the north, College Park's location becomes more central, and its natural amenities will become more valuable to the college community.
CAMPUS EDGES

The campus and the town have both grown and sometimes this growth has become an issue. College and town leaders have stated repeatedly that they recognize and respect the need for both to prosper. To foster better communication, we list privately owned campus edges and state possible development in our adjacent Institutional Zone.

Tyler, Chase, Valley and Conant Roads, Carter Street. Athletics, including fields and structures.

South Park and Summer Streets. Athletics, including a possible athletic center. In addition, Thompson may be the site for a parking garage. In the very distant future, Memorial Stadium may be relocated away from the core, resulting in a major change in this part of the campus.

North Park Street and Lyme and Reservoir Roads. Faculty and graduate student housing, academic and administrative facilities and continued development of athletic facilities and open space. One such facility could be a relocated football stadium, with associated parking.

Rope Ferry, Clement, Choate Roads, Webster Terrace and Occum Ridges. Academic, administrative facilities and student residences in the former hospital site. A parking garage is likely near Lyme Road. Campus extension beyond Dewey Field is likely in the long run.

West Wheelock. A possible parking garage at Cummings will require a left turn lane on West Wheelock Street.

Downtown. B-2 Zone. Retail and assembly spaces with residences over. A recent study of downtown calls for "an abundant mix of housing" with the downtown "active both day and at night." See Downtown Hanover Vision 4/01.

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CAMPUS LIGHTING
In 1998, the college commissioned LAM Partners, Cambridge, MA, to prepare a Campus Lighting Master Plan. After extensive field testing, LAM's proposals were accepted in 1999. The goals of the Plan are a consistent campus appearance, compatibility of fixtures in a diverse campus, ease of maintenance and economy of operation. The key recommendations:

- Implement the overall campus lighting plan, computer generated for appropriate light levels and coverage, in new and retrofit projects.

- Use standard lighting fixtures for common places such as parking lots and paths. These fixtures were selected after extensive testing and modifications.

- Work with the Town to produce guidelines limiting light spill-over, or trespass. Consider existing international standards for glare both on and off campus property, and into the night sky.

Implementation of the Campus Lighting Master Plan will take five to ten years.

CAMPUS SIGNAGE
As Dartmouth has continued to welcome its students, guests and participants in special programs, way-finding around campus has become increasingly difficult, particularly as the campus expanded beyond the core twenty-five years ago. By the mid-1990's, the issue of finding one's way around campus reached an intensity requiring solutions.

In 1996 the college initiated a study to create an overall campus signage system. Graphic Designer Jon Roll, '67 and his firm were retained for this task. Many samples were tested and modified. One important requirement of the program was that signs be fabricated in-house. In February 2001, the college accepted the completed Sign Standards. See Final Draft Sign Standards, 2/01.

Implementation of these standards began well before the final draft. The most pressing signs at Admissions, Tuck and Thayer were completed. The college has now funded the Roll standards and initial phases are under way. These will start with 'trailblazing' signs at the Hanover outskirts, and continue to include building identification, parking designation, regulatory, directional and temporary signs. Full implementation will occur over two or more years.

Another element of the signage program has been the development of a campus map/kiosk and a community map, both now in place at the Hanover Inn. Finally, the college continues to debate the wisdom of a sign on Wheelock Street reading "Dartmouth College."