DARTMOUTH COLLEGE

THAYER DINING HALL REPLACEMENT
BASIS OF DESIGN

Board of Trustees Summary Report
03 November 2006

KIERAN TIMBERLAKE ASSOCIATES LLP
1. PROCESS, SCHEDULE, AND PROJECT GOALS

2. SITE ANALYSIS

3. PROGRAM SUMMARY

4. ZONING AND CODE PARAMETERS

5. ENVIRONMENTAL ANALYSIS
   • Environmental Factors, Sustainable Strategies

6. PLANNING CONCEPTS
   • Precinct Planning Goals
   • Zones for Building, Servicing, Parking and Landscaping

7. RECOMMENDATIONS
   • Building and Open Space Envelope, Circulation Patterns

AGENDA
THAYER DINING HALL REPLACEMENT
PROJECT GOALS

Planning Goals
1. Strengthen the relationships among “the Green”, Collis, Robinson, and the Thayer replacement
2. Accomplish efficient building service while giving priority to the pedestrian experience
3. Incorporate campus and precinct movement patterns and graining of site
4. Acknowledge the dual relationship between the campus and town
5. Improve the overall character of the precinct landscape to the building
6. Maximize energy efficiency and environmental quality in siting and orientation of buildings and exterior spaces
7. Respect general density patterns of the precinct
8. Respect campus development precedents while acknowledging the contemporary patterns of student life
9. Maintain consistency with the Planning and Operational recommendations of the Parking and Transportation Committee
10. Optimize efficiency of central campus site

Building Goals
1. Design a 100-year building that accommodates flexibility of future use
2. Achieve LEED Gold while overcoming LEED “bling”
3. Fully meet the dining, catering, and student life programs (other potential programs?)
4. Balance contemporary architectural expression with the timeless nature of the Dartmouth campus
5. Take advantage of opportunities for innovation, specifically building performance and energy use

Global Goals
1. Maintain a design and construction schedule that will allow for occupancy before Spring term 2010
2. Satisfy all relevant College constituencies while maintaining an efficient design process
3. Develop planning and design products that will allow for comprehensive project evaluation by a variety of College constituencies
4. Balance quality, scope, cost, time and environmental responsibility
5. Superior dining and social experience for students
6. Visionary project
SITE ANALYSIS
THAYER DINING HALL REPLACEMENT

DARTMOUTH CAMPUS: PERMEABLE/IMPERMEABLE SURFACE

THAYER DINING HALL REPLACEMENT

- Thayer footprint = 30,805 sf
  - 4.13% of precinct
  - 94 parking spaces

KIERAN TIMBERLAKE ASSOCIATES LLP
GOLD COAST

DARTMOUTH CAMPUS: GREEN SPACE
THAYER DINING HALL REPLACEMENT
DARTMOUTH CAMPUS: GREEN SPACE
THAYER DINING HALL REPLACEMENT
KIERAN TIMBERLAKE ASSOCIATES LLP
DARTMOUTH CAMPUS: GREEN SPACE
THAYER DINING HALL REPLACEMENT
PROGRAM ANALYSIS
THAYER DINING HALL REPLACEMENT

EXISTING THAYER HALL PROGRAM DISTRIBUTION

LEVEL 2
SUPPORT

GROUND FLOOR

LEVEL 1
SERVERY, KITCHEN, DINING
SEATS 700

LOWER LEVEL
PREP, STORAGE, SUPPORT

PROGRAM KEY

STORAGE

PREP, KITCHEN & SERVERY

SEATING

SUPPORT

OTHER PROGRAM

CIRCULATION & SERVICES

STRUCTURE
THAYER DINING HALL REPLACEMENT

EXISTING THAYER HALL PROGRAM DISTRIBUTION

NOTE: This Percentage is High Because Thayer Lacks Air-Conditioning Thus Resulting in a Smaller Amount of Mechanical Space

**GROSS SQUARE FEET = 72,539**

**NET SQUARE FEET = 47,330**

**NET SQ. FT. PER SEAT = 67.6**

**65.25%**

**67.6%**

**= 25,209**

**34.75%**

**NOTE: This Percentage is High Because Thayer Lacks Air-Conditioning Thus Resulting in a Smaller Amount of Mechanical Space**
<table>
<thead>
<tr>
<th>Building</th>
<th>Gross Square Feet</th>
<th>Dining Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thayer Dining Hall, Dartmouth College</td>
<td>72,539</td>
<td>700</td>
</tr>
<tr>
<td>Holloway Commons, University of New Hampshire</td>
<td>73,830</td>
<td>830</td>
</tr>
<tr>
<td>Burge Market Place, University of Iowa</td>
<td>67,737</td>
<td>928</td>
</tr>
<tr>
<td>Appel Commons, Cornell University</td>
<td>62,420</td>
<td>600</td>
</tr>
</tbody>
</table>

### Comparative Analysis

**THAYER DINING HALL REPLACEMENT**

- **Gross Square Feet**: 72,539
- **Dining Seats**: 700

**Holloway Commons, University of New Hampshire**

- **Gross Square Feet**: 73,830
- **Dining Seats**: 830

**Burge Market Place, University of Iowa**

- **Gross Square Feet**: 67,737
- **Dining Seats**: 928

**Appel Commons, Cornell University**

- **Gross Square Feet**: 62,420
- **Dining Seats**: 600
PROGRAM SUMMARY
**Thayer Dining Replacement**

- 600 seats
- 63,000 square feet
- 37,000 net square feet
- Gross to net ratio 61%

**Existing Thayer Dining Hall**

- 700 seats
- 72,539 square feet
- 47,330 net square feet
- Gross to net ratio 65.25% *

*NOTE: This Percentage is High Because Thayer Lacks Air-Conditioning Thus Resulting in a Smaller Amount of Mechanical Space*
ZONING AND CODE PARAMETERS
THAYER DINING HALL REPLACEMENT

DARTMOUTH CAMPUS: ZONING DISTRICTS

TOWN OF HANOVER ZONING ORDINANCE MAY 2006

DARHTMOUTH CAMPUS: ZONING DISTRICTS

THAYER DINING HALL REPLACEMENT
THAYER DINING HALL REPLACEMENT: ZONING AND CODE PARAMETERS

CEMETERY SETBACK = 25’

IBC FIRE SEPARATION NON RATED = 30’

BUILDABLE ZONE = 26,980 SQ. FT.

BUILDABLE ZONE WITH DEMO = 25,000 SQ.FT.

BUILDABLE ZONE @ 60’ TALL = 36,200 SQ. FT.

BUILDABLE ZONE @ 35’ TALL =6,800 SQ. FT.

GR-2 ZONING HEIGHT LIMIT WITHIN 150’ = 35’

GR-2 ZONING NO BUILDING SETBACK = 75’

NO ZONING MODIFICATIONS

THAYER DINING HALL REPLACEMENT
CEMETERY SETBACK = 25’

IBC FIRE SEPARATION NON RATED = 30’

BUILDABLE ZONE = 26,980 SQ. FT.

BUILDABLE ZONE WITH DEMO = 25,000 SQ. FT.

BUILDABLE ZONE @ 60’ TALL = 45,700 SQ. FT.

BUILDABLE ZONE @ 35’ TALL = 6,000 SQ. FT.

GR-2 ZONING HEIGHT LIMIT WITHIN 150’ = 35’

GR-2 ZONING NO BUILDING SETBACK = 75’

POTENTIAL ZONING MODIFICATIONS

THAYER DINING HALL REPLACEMENT: ZONING AND CODE PARAMETERS
THAYER DINING HALL REPLACEMENT

KIERAN TIMBERLAKE ASSOCIATES LLP
ENVIRONMENTAL ANALYSIS
The psychrometric chart shows significant opportunities for using thermal mass and natural ventilation strategies in buildings where these types of systems are appropriate to the program.
SUSTAINABLE STRATEGIES: BUILDING AND OPEN SPACE ENVELOPE

THAYER DINING HALL REPLACEMENT

KieranTimberlake Associates LLP
<table>
<thead>
<tr>
<th>Sustainable Sites</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td></td>
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<tr>
<td>Water Efficiency</td>
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<tr>
<td>Energy &amp; Atmosphere</td>
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<tr>
<td>Materials &amp; Resources</td>
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<tr>
<td>Indoor Environmental Quality</td>
<td>9</td>
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<tr>
<td>Innovation &amp; Design Process</td>
<td>1</td>
<td>-</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>23</td>
<td>25</td>
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</table>

**TOTAL POSSIBLE POINTS = 23 TO 48**

26-32 = LEED CERTIFICATION
33-38 = LEED SILVER CERTIFICATION
**39-51 = LEED GOLD CERTIFICATION** CURRENT GOAL
52 OR MORE = LEED PLATINUM CERTIFICATION
PLANNING CONCEPTS
THAYER DINING HALL REPLACEMENT

PRECINCT PLANNING GOALS

ORGANIZE NORTH PRECINCT PARKING

FUTURE BUILDING SITES

IMPROVE LANDSCAPE CONNECTIONS

ADDRESS PEDESTRIAN & VEHICLE CONFLICTS

IMPROVE DINING HALL SERVICING

KIERAN TIMBERLAKE ASSOCIATES LLP
**EVALUATION CRITERIA**

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<tr>
<th>Planning Goals</th>
<th>1</th>
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<th>3</th>
<th>4</th>
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<th>6</th>
<th>7</th>
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<td>2. Efficient building service; prioritize pedestrian experience</td>
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<td>3</td>
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<td>3. Incorporate campus and precinct movement</td>
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<td>4. Acknowledge relationship between the campus and town</td>
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<td>5. Improve precinct landscape</td>
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<td>6. Energy efficiency and environmental quality in siting of building</td>
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<td>7. Respect general density patterns of the precinct</td>
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<td>8. Respect precedents and acknowledge contemporary student patterns</td>
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<td>9. Maintain consistency of the Parking and Transportation Committee</td>
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<tr>
<td>10. Optimize efficiency of central campus site (best use of site)</td>
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<th>8</th>
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<tbody>
<tr>
<td>1. Design a 100-year building; flexibility of future use</td>
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<td>3</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>2. Achieve LEED Gold while overcoming LEED “bling”</td>
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<td>3. Meet the dining, catering, and student life programs</td>
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<td>4. Balance contemporary architectural expression with campus</td>
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<td>5. Opportunities for innovation</td>
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<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>1. Schedule for occupancy Spring term 2010</td>
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<td>3</td>
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<td>1</td>
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<tr>
<td>2. Satisfy College constituencies; maintain an efficient design process</td>
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<td>3. Deliverables that will allow for evaluation by College constituencies</td>
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<td>5. Superior dining and social experience for students</td>
<td>2</td>
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<td>6. Visionary project</td>
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</tbody>
</table>

**TOTAL** 29 38 44 40 33 30 29 51

1 = LEAST SUCCESSFUL  5 = MOST SUCCESSFUL
14 = MIN.  70 = MAX.
RECOMMENDATIONS
BUILDING AND OPEN SPACE ENVELOPE: THAYER REPLACEMENT PROJECT
THAYER DINING HALL REPLACEMENT
CIRCULATION PATTERNS: THAYER REPLACEMENT PROJECT
THAYER DINING HALL REPLACEMENT
BUILDING AND OPEN SPACE ENVELOPE: FUTURE PROJECTS
THAYER DINING HALL REPLACEMENT

KIERAN TIMBERLAKE ASSOCIATES LLP
FOOTPRINT = 90’ X 340’
INSTITUTIONAL ZONING
HEIGHT = 60’
GR - 2 ZONING HEIGHT = 35’

GR-2: 75’ SETBACK

25’
CEMETERY SETBACK

30’ IBC FIRE SEPARATION
RECOMMENDATIONS
THAYER DINING HALL REPLACEMENT
THAYER DINING HALL REPLACEMENT
BASIS OF DESIGN

Board of Trustees Summary Report
03 November 2006