Norwich University
Harmon Hall Campus Center
Renovations and Additions
Conceptual Design and Programming

PERRY DEAN ROGERS | PARTNERS ARCHITECTS
January 2005
Executive Summary

Introduction
Perry Dean Rogers | Partners Architects is pleased to submit this conceptual design booklet for the renovations and addition to Harmon Hall at Norwich University. We have, collectively with the Building Committee members, developed a vision for the new Campus Center within the context of Norwich University - a complex, variegated campus of intimate scale, nestled in the rugged landscape of Northfield. PDR|P’s appreciation of context extends to include the rich topographic conditions of the campus, as well as the building fabric of the existing campus. It is our opinion that any architectural response should not mimic the existing building fabric, but should rather be respectful of it, while creating an identity of its own. We look forward to expanding on these concepts in the schematic design phase.

Approach
PDR|P is responsible for the work contained in this booklet, but it is not without the benefit of the collective intelligence of the building committee and our consultants. While we have worked with the building committee to develop a vision for the project, our food service consultant, MEP engineers, structural engineers, landscape architects, code consultants and cost estimators have all been tapped for their expertise. Their input has been vital to the evolution of the programming and conceptual design.

Project Team
PDR|P firmly believes that only through successfully managing the disparate and varied agendas of the owner, user, and consultant team can a quality piece of architecture emerge. The project team to date includes:

Norwich University Building Committee:
- Arne Aho, Architecture Faculty
- Keith Barrett, Trustee
- Paul Bento, Sodexho, Food Service
- Charlie Crosby, Major Gifts
- Gen. Mike Kelley, Commandant
- Dave Magida, Chief Admin Officer
- Martha Mathis, Dean of Students
- Harold Mayhew, University Architect
- Bizhan Yahyazadeh, Director of Facilities and Conference Services
- Moriah, Student Representative

Architects: Perry Dean Rogers | Partners Architects
- Martha Pilgreen, Principal-in-Charge
- Ned Collier, Collaborating Principal
- Rick Jones, Project Manager
- Mark Freeman, Project Team
- Melissa Gorman, Project Team
- Alex DeMambro, Project Team

Food Service Consultant: Ricca Newmark (R-N)

MEP Engineers: Hallum-ICS (H-ICS)

Structural Engineers: LeMessurier Consultants (LeM)

Landscape Architect: Richard Burck Associates (RBA)

Code Consultants: Rolf Jensen Associates (RJA)

Cost Estimator: Hanscomb Faithful & Gould (HF&G)
The process of conceptual design and programming for the campus center began on September 20th, 2004. The booklet is a summary of the process and product resulting over the past four months.

It should be noted that the architectural documentation contained herein is at a conceptual design level. As part of the natural course of the design process these will all evolve in the subsequent design phases.
Initial Observations

Prominently located adjacent to White Chapel, and in full view from Route 12, Harmon Hall occupies a critical location on campus. The adjacent White Chapel, the old dining hall, is the spiritual heart and part of the historic core of campus. Harmon Hall was built in the mid-1950’s. Intermittent renovations in the early and late-1990’s have updated some building systems and interior finishes, notably in “The Mill” area of the ground floor. However, a comprehensive reconsideration of the building, interior and exterior, is warranted as part of any renovation and addition project. Simultaneously, there are code and life-safety issues that need to be addressed in a holistic manner.

The exterior of the building is red brick with white painted wood windows, similar to much of the existing campus building fabric. Architecturally, there is a clarity to the L-shaped form of the upper floor as a corner of the quad, but the wedge-shaped piece that fills in the L-shape obfuscates this reading. A low, one-story connection to White Chapel is unfortunate, because it compromises the singular reading of White Chapel as the object that it should be, but this is not insurmountable. Internally, the building is programmatically dense, and does not have the strong sectional relationships that can make a building feel open and generous. The dining hall at the main floor feels compressed, as its plan dimension is very broad for the height of the space.

A Quad

Harmon Hall bounds the east face of a quad formed by Dodge and Hawkins, and ultimately the Upper Parade itself to the west, White Chapel to the north, and the Engineering Math & Science complex to the south. This quad is not as well defined at its edges as it might be, in large part due to the topographic variation at its perimeter. Moreover, none of the buildings present a particularly strong face to the quad. Hawkins, Dodge, EM&S, and White present relatively mute facades, appearing as “sides” to the space rather than fronts. The once strong axis between the two legs of EM&S has been somewhat diluted by the final leg of the complex, which interrupts the axis. The existing Harmon Hall presents a diagonal wedge to the quad, a remnant of the path that Central Street once cut across the campus. The renovation and addition to the campus center should strengthen this quad, and allow it to read as a coherent whole.

Route 12 Presence

To the east, along Route 12, there is a landform that somewhat obscures the face of Harmon Hall. Currently, there is a service road and loading dock area facing the road. There is untapped potential here, for the campus center, and the University in general. Any proposal to reinvigorate Harmon Hall should present a strong face to the road, giving the building and Norwich a more clear, well-defined presence to the public.

U.P. Transition

The Upper Parade is the single strongest exterior space on the campus. All other areas of campus should have a clear relationship to the U.P. The clarity of these relationships is often compromised by the topographic extremes of the campus. Harmon Hall is a good example of this. The elevation change from the U.P. (el. 842) down to the main floor of Harmon Hall (el. 820), and continuing down to the lower floor of Harmon Hall (el. 807) is achieved by a single sloping surface that spills down to the lower elevation from the U.P. This sloping surface is a remnant of the old Central Street, when it used to cut through campus. It does not provide a clear spatial relationship between these two quads, is not ADA-compliant, and is not safe in inclement weather. The Harmon Hall solution should clarify the relationship of this lower quad to the U.P., while providing an ADA-compliant path between the two spaces.

Service Access and Parking

Harmon Hall is currently served by semi-trucks that back up a service road that runs south to north along the east face of the building, parallel to route 12. There are two loading docks, one each facing south and north. There is are two parking areas to the north, that are served by this access road, and a second service road from the north. A second, redundant road runs parallel to route 12, in front of the face of EM&S. The conflation of parking areas, vehicular circulation, service circulation, and pedestrian circulation is a confused and unsafe condition. Any design proposal should clarify and separate these circulation systems, without compromising any single one of them.
Population

In order to properly program the new Campus Center, it was critical from the outset to have a clear understanding of the campus population, both currently, and projected to the 2019 growth goals.

<table>
<thead>
<tr>
<th>Population</th>
<th>2004</th>
<th>2019</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Cadets, Non-Rook</td>
<td>709</td>
<td>825</td>
<td>total 1081 residential cadets per housing office, 10.07.04</td>
</tr>
<tr>
<td>Residential Cadets, Rook</td>
<td>372</td>
<td>425</td>
<td>of the total 1081, approx 372 are rooks</td>
</tr>
<tr>
<td>Residential Civilians</td>
<td>437</td>
<td>750</td>
<td>per housing office, 10.07.04</td>
</tr>
<tr>
<td>Commuter Civilians</td>
<td>432</td>
<td>150</td>
<td>balance remaining from 1950 total enrollment</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1950</td>
<td>2150</td>
<td></td>
</tr>
</tbody>
</table>
Program

The design team spent a considerable amount of time, with both the building committee and student groups, developing the program from both a qualitative and quantitative standpoint. This was crucial to not only define the needs of the users, but to identify the overall feel and environment.

Program, Qualitative and Quantitative
The following observations summarize the qualitative and quantitative discussions that the design team has had with the building committee and the representative student groups. These observations are not in a particular order of priority:

- flexibility, both over the life of the building, and over the course of a given day
- open, natural light and view - a wintergarden!
- “breaking the winter doldrums”
- open and interconnected in section, diagonal views
- variety of spatial experiences
- 24/7 availability of food (perhaps accomplished through vending)
- variety of seating provisions in the main dining room and the emporium areas
- wireless environment, supplemented by extensive tel/data support in some rooms
- a “campus living room”
- meeting rooms, meeting rooms, meeting rooms!
- (2) rook seatings for each meal
- rook lounge to provide a temporary respite from the rigors of life as a rook
- mailboxes for each student on campus
- commuter cubbies/lockers
- student organization and student club spaces
- work space for student organizations
- 21 club
- NU card program to consolidate food, security access, etc. under a single program
- office space
- recreation room
- technology upgrades to meeting rooms and recreation room
- a place to watch movies with friends
- variety of lounge types, qualities, seating - nooks
- expanded grab-n-go food options
- flexibility of dining spaces to support speaking engagements, lectures, comedians, music, films, etc. - one of the two dining rooms could be a multi-purpose space
- storage!
- a loading dock and service system that works well
- info booth proximal to entrance
- glass to exterior - transparency to see activities within

Related Exterior Programs
Throughout the conceptual design process, PDR|P met with various student groups. One common lament from the students was that from November through April (the lion’s share of the academic year), they are hustling from one building interior to another due to the inclement weather. Coupled with this remark have been a series of observations by the building committee that the Norwich student body shares a characteristic emblematic of choosing to go to school in Northfield and Vermont - the students consistently embrace the outdoors, are physically fit, and engage in recreational activities outdoors.

The design team reflected on this dichotomy, and hopes to address this by proposing an exterior program commensurate with the interior activities of the campus center. A portable ice rink, assembled each winter in the quad to the west of Harmon Hall, would provide an exterior program that could be used by the students for outdoor recreation in the winter. The ground floor interior program of the emporium food component would open onto the area adjacent to the ice rink, allowing for hot chocolate and coffee to be readily available. An outdoor fireplace would further enrich this experience. This could be the location of the University Christmas Tree, or other annual winter events.
Program - Dining

bar, bowling green state university
cafe, agnes scott college
servery, university of maryland, baltimore county
outdoor dining, bowling green state university
dining, university of maryland, baltimore county
## Program - Dining

<table>
<thead>
<tr>
<th></th>
<th>Harmon</th>
<th>NSF</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dining Hall 1</td>
<td>9166</td>
<td>7905</td>
<td>currently at main floor of Harmon; target NSF allocation 465 ppl @ 17 nsf each, or approximately 32% of non-rook residential students</td>
</tr>
<tr>
<td>The Mill</td>
<td>4185</td>
<td>-</td>
<td>currently at ground floor of Harmon - replaced by emporium and associated seating, listed below</td>
</tr>
<tr>
<td>Rook Dining</td>
<td>3060</td>
<td>4200</td>
<td>currently at main floor of Harmon; banquet dining rm embedded in this space - consider how room could be flexible / partitionable; target NSF allocation 300 rooks @ 14 nsf each.</td>
</tr>
<tr>
<td>Snack Bar / Grab-and-Go</td>
<td>770</td>
<td>-</td>
<td>grab-n-go food for commuter students, incl. back-of-house space requirements</td>
</tr>
<tr>
<td>Emporium</td>
<td>-</td>
<td>2500</td>
<td></td>
</tr>
<tr>
<td>Vending Machines</td>
<td>-</td>
<td>-</td>
<td>embedded in emporium</td>
</tr>
<tr>
<td>Emporium Seating</td>
<td>-</td>
<td>900</td>
<td>50 ppl @ 16sf ea., includes some soft seating</td>
</tr>
<tr>
<td>Club 21</td>
<td>-</td>
<td>500</td>
<td>Club 21 seating spills over to emporium seating in some manner</td>
</tr>
<tr>
<td>Faculty Dining / Private Dining Rm / Mid-size Dining Rm (20-50 ppl) / Rook Lounge</td>
<td>520</td>
<td>1000</td>
<td>private or flex space for faculty dining - private or semi-private from thru dining area; NSF allocation 50 ppl @ 20 nsf each. Could shift to Rook Lounge after lunch through the afternoon and evening hours.</td>
</tr>
<tr>
<td>Servery</td>
<td>2800</td>
<td>5200</td>
<td>per Rocco's factors</td>
</tr>
<tr>
<td>Wintergarden - Indoor Garden</td>
<td>-</td>
<td>-</td>
<td>centerpiece of the dining function - likely some portion of the main dining hall - consider carefully how this works in the warmer seasons</td>
</tr>
<tr>
<td>SUB-TOTAL</td>
<td>22205</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dining SUB-TOTAL with Gross Factor 29007 assumes a target of 75% efficiency in these spaces
Program - Kitchen & Retail

bookstore, bowling green state university

bookstore, university of maryland, baltimore county

servery, olin college of engineering
KITCHEN & FOOD PREPARATION

<table>
<thead>
<tr>
<th></th>
<th>Harmon</th>
<th>NSF</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Prep</td>
<td>2595</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Production Kitchen</td>
<td>-</td>
<td>2000</td>
<td>per Ricca’s factors</td>
</tr>
<tr>
<td>Storage</td>
<td>4543</td>
<td>3265</td>
<td>per Ricca’s factors - note that this is only food storage space, not including any general building storage</td>
</tr>
<tr>
<td>Dish Room</td>
<td>305</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Catering Staging Area</td>
<td>137</td>
<td>-</td>
<td>is this required?</td>
</tr>
<tr>
<td>Univ. Catering Service Office</td>
<td>295</td>
<td>500</td>
<td>per Ricca’s factors</td>
</tr>
<tr>
<td>Linen</td>
<td>333</td>
<td>390</td>
<td>per Ricca’s factors</td>
</tr>
<tr>
<td>SUB-TOTAL</td>
<td>9170</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RETAIL

<table>
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<tr>
<th></th>
<th>Harmon</th>
<th>NSF</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bookstore</td>
<td>5586</td>
<td>4000</td>
<td>number is inclusive of storage and admin; also consider packaging and mailing space for the University’s OGP</td>
</tr>
<tr>
<td>NU Card Office</td>
<td>-</td>
<td>135</td>
<td></td>
</tr>
<tr>
<td>ATM</td>
<td>-</td>
<td>100</td>
<td>machine w/ back-of-house room</td>
</tr>
<tr>
<td>Copy Center</td>
<td>-</td>
<td>200</td>
<td>staffed space + copier</td>
</tr>
<tr>
<td>Barber</td>
<td>580</td>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Barber waiting area</td>
<td>259</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>SUB-TOTAL</td>
<td>4935</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Program - Student Spaces

- Recreation space, University of Maryland, Baltimore County
- Lounge space, Dickinson College
- Student space, University of Maryland, Baltimore County
- Lounge space, University of Maryland, Baltimore County
<table>
<thead>
<tr>
<th>Student Spaces</th>
<th>Hamon</th>
<th>NSF</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Video</td>
<td>255</td>
<td>-</td>
<td>consolidated w/ Screening Room</td>
</tr>
<tr>
<td>Audio/Disc Jockey</td>
<td>185</td>
<td>-</td>
<td>eliminate as separate program element, but could be staged in a flex space</td>
</tr>
<tr>
<td>Mailroom</td>
<td>660</td>
<td>1200</td>
<td>extensive storage space required for receipt of care packages</td>
</tr>
<tr>
<td>Commuter student storage cubbies</td>
<td>-</td>
<td>200</td>
<td>one lookable cubby for each commuter student (approx 200 sq ft) - combine w/ mailboxes for commuter students; adjacent to Mailroom</td>
</tr>
<tr>
<td>Recreation Room</td>
<td>1509</td>
<td>1500</td>
<td>proportion and size should support a changing use pattern based on student desires and needs - pool, ping pong, foosball, arcade games, etc.</td>
</tr>
<tr>
<td>Band Room</td>
<td>1083</td>
<td>-</td>
<td>in new configuration, this will be relocated to Basement of White Chapel</td>
</tr>
<tr>
<td>Band Storage</td>
<td>153</td>
<td>-</td>
<td>in new configuration, this will be relocated to Basement of White Chapel</td>
</tr>
<tr>
<td>Conference Room</td>
<td>553</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Small Mtg Rooms</td>
<td>-</td>
<td>540</td>
<td>3 @ 180 nsf ea</td>
</tr>
<tr>
<td>Small Student Work Room</td>
<td>-</td>
<td>180</td>
<td>1 @ 180 nsf, similar to small mtg room, but harder finishes and perhaps dedicated exhaust and air systems to support harder use</td>
</tr>
<tr>
<td>Medium Mtg Rooms</td>
<td>615</td>
<td>600</td>
<td>2 @ 300 nsf ea; smart-room technologies?</td>
</tr>
<tr>
<td>Large Mtg Rooms</td>
<td>-</td>
<td>600</td>
<td>1 @ 600 nsf, adjacent to bookstore for peak book sales and buy-back periods</td>
</tr>
<tr>
<td>Campus “Living Room” Lounge</td>
<td>746</td>
<td>600</td>
<td>1 @ 600 nsf</td>
</tr>
<tr>
<td>&quot;Jam&quot; Room</td>
<td>-</td>
<td>-</td>
<td>relocated to basement of White Chapel</td>
</tr>
<tr>
<td>Music Practice Rooms</td>
<td>-</td>
<td>-</td>
<td>relocated to basement of White Chapel</td>
</tr>
<tr>
<td>DVD / CD Rental</td>
<td>-</td>
<td>-</td>
<td>kiosk - not a staffed position</td>
</tr>
<tr>
<td>Listening stations (3 @ 70 sq ea.)</td>
<td>-</td>
<td>210</td>
<td>near DVD / CD rental and screening space</td>
</tr>
<tr>
<td>Screening Room</td>
<td>-</td>
<td>400</td>
<td>DVD rental / viewing space for 15 people</td>
</tr>
<tr>
<td>Radio Station</td>
<td>-</td>
<td>-</td>
<td>located elsewhere on campus</td>
</tr>
<tr>
<td>Backpack Storage</td>
<td>-</td>
<td>-</td>
<td>related to food service and backpack storage outside of the servery/dining area</td>
</tr>
<tr>
<td>Electronic Bulletin Board</td>
<td>-</td>
<td>-</td>
<td>part of Info Desk / Reception desk area</td>
</tr>
<tr>
<td>Web Kiosks</td>
<td>-</td>
<td>200</td>
<td>area dedicated to a couple of computer stations for e-mail, internet, etc.</td>
</tr>
<tr>
<td>Student Org / Club Offices</td>
<td>-</td>
<td>600</td>
<td>open plan; “cafe/open” arrangement w/ modular furniture system for (f) student org/clubs; balance of room open plan with lounge seating and meeting tables – could also be conjoined with meeting rooms identified above</td>
</tr>
</tbody>
</table>

**SUB-TOTAL**: 6830
student organization break-out space, Fairfield University

seminar room, Fairfield University

seminar room, Dickinson College
Program Summary

The total area required for the desired program is approximately 68,748 GSF. Note that as the project proceeds into subsequent design phases, the program defined here and the SF allotments for each constituent part of the program may adjust.

<table>
<thead>
<tr>
<th>OFFICE</th>
<th>Harmon</th>
<th>NSF</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Desk</td>
<td>-</td>
<td>200</td>
<td>staffed space</td>
</tr>
<tr>
<td>Band Director's Office</td>
<td>137</td>
<td>-</td>
<td>in new configuration, this will be relocated to Basement of White Chapel</td>
</tr>
<tr>
<td>Career Development Office</td>
<td>137</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Residential Life Dept. Office</td>
<td>548</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Director of Student Center Office</td>
<td>135</td>
<td>-</td>
<td>this is currently the same person as the director of the student center</td>
</tr>
<tr>
<td>Student Activities Office</td>
<td>-</td>
<td>-</td>
<td>this is currently the same person as the director of the student center</td>
</tr>
<tr>
<td>Intramural Sports Office</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Substance Abuse Counseling</td>
<td>162</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Initi. Student Affairs Office</td>
<td>120</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Yearbook Office</td>
<td>135</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Office of Volunteer Programs</td>
<td>135</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Youth Mentoring Program Office</td>
<td>120</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>General Building Storage</td>
<td>-</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Offices (10 @ 135 nsf ea)</td>
<td>-</td>
<td>1350</td>
<td>provide 10 offices @ 135nsf ea for future allocation</td>
</tr>
<tr>
<td><strong>SUB-TOTAL</strong></td>
<td><strong>2500</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SF</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kitchen Sub-Total</td>
<td>9170</td>
</tr>
<tr>
<td>Kefel Sub-total</td>
<td>4930</td>
</tr>
<tr>
<td>Office Sub-total</td>
<td>2550</td>
</tr>
<tr>
<td>Student Spaces Sub-Total</td>
<td>6830</td>
</tr>
<tr>
<td><strong>TOTAL NSF (w/o dining)</strong></td>
<td>23485</td>
</tr>
<tr>
<td>Target NSF (w/o dining)</td>
<td>39142</td>
</tr>
<tr>
<td>Target Dining NSF</td>
<td>29607</td>
</tr>
<tr>
<td><strong>TOTAL TARGET GSF</strong></td>
<td>68748</td>
</tr>
</tbody>
</table>
Defining the program components that will be included in the new campus center is a critical activity to the success of the project. But defining how these constituent parts relate to one another is even more important in resolving how the building will work. Some components have very direct, linear relationships, while others must be more multivalent and non-linear in their nature.
Building Code Considerations
The initial project cost estimate ($13 or $16 million) does not account for the cost of complying with code issues related to seismic, wind, or Vermont’s move to the IBC. All present cost estimates address these issues.

Chapter 34

The state of Vermont is governed by BOCA, although there is a movement statewide to adopt the International Building Code (IBC). The existing building must be subjected to Chapter 34 of BOCA (or IBC, if that is adopted) prior to consideration of any significant renovation or addition to the project. PDR|P worked with our code consultant, RJA, to ascertain precisely how the existing conditions of Harmon Hall do not meet the requirements of Chapter 34.

The primary concerns with the state of the existing building are as follows:
- exceeds height and area limits for its use and construction type
- there is no sprinkler system
- unprotected vertical opening in the kitchen between the ground and first floors
- no passenger elevator with emergency recall

There are a number of approaches that were identified as means of addressing these shortfalls:
- install smoke detectors throughout the building
- install a sprinkler system throughout the building
- enclose the vertical opening connecting the kitchen area between the ground and first floors
- petition to use IBC to evaluate the height and area limits (either as a variance process, or operating with the assumption that VT will adopt this code)
- add an additional means of egress stair serving all above grade stories, to provide 125% egress capacity
- install an elevator with emergency recall
- build an addition that is fire-separated from the existing building

The last point was not considered a valid avenue, given the porosity, seamlessness, and connectivity of the interior spaces that is the desire of the building committee, students, and the design team. All of the other approaches will be studied in greater detail in the subsequent design phases as potential avenues for bringing the building into compliance with Chapter 34.

ADA Compliance

The existing building has multiple non-compliant ADA conditions, most notably the lack of an elevator, stairs at the main floor entry (el. 820), and exterior grade transitions in the immediate vicinity of the building that are not ADA compliant. These will all be addressed in the subsequent phases of the project.

Structural Code

The existing building was constructed under a different building code, whose structural requirements were different than today. The current seismic and wind-bracing requirements are considerably more onerous than in 1954 when Harmon Hall was constructed. These upgrades will be addressed in the renovation.

MEP Code

Similar to the structural code, the MEP requirements today are much different than they were in 1954. Some of the MEP systems were upgraded in a mid-1990’s partial renovation of Harmon Hall, but the building systems will need to be holistically reviewed in light of the requirements of ASHRAE 90.1 and the other applicable code requirements to insure compliance.
Cost Models

Consideration of cost models* parallel with the development of the design proposal is paramount to the success of any design project. At the outset, PDR|P worked with H,F&G to establish some preliminary cost models for evaluating various schemes. All dollar figures listed below are cost/sf. These models and their assumptions are as follows:

Model 1: Renovated Space - MINIMAL RENOVATION
Compliance with Ch34, ADA, MEP upgrades, structural code. Finish work is limited to patching and repairing as upgrades are completed. No moving of existing walls or reconfiguring of existing spaces.
- $70 MEP
- $10 Structural - Seismic
- $40 Finishes (patch/repair behind upgrades)
$120 TOTAL

Model 2: Renovated Space - KITCHEN UPGRADE
Similar upgrades identified in Model 1, but add significant renovations to the kitchen and servery in the existing building. This will fundamentally change the quality of the servery and kitchen.
- $70 MEP
- $10 Structural - Seismic
- $40 Finishes (patch/repair behind upgrades)
- $50 Kitchen & Servery
$170 TOTAL

Model 3: Renovated Space - GUT RENOVATION
Compliance with Ch34, ADA, MEP upgrades, structural code. Finish work is limited to patching and repairing as upgrades are completed. No moving of existing walls or reconfiguring of existing spaces.
- $70 MEP
- $10 Structural - Seismic
- $40 Finishes (patch/repair behind upgrades)
- $50 Kitchen & Servery
- $40 Finishes (moving walls, touching all surfaces)
$210 TOTAL

Model 4: New Construction - NO KITCHEN / SERVERY
Build an addition that does not house the equipment and mechanically intensive portions of the project, namely the kitchen & servery.
- $70 MEP
- $80 Structure and Shell
- $40 Finishes
$190 TOTAL

Model 5: New Construction - KITCHEN / SERVERY ONLY
Build an addition that houses the equipment and mechanically intensive portions of the project, namely the kitchen & servery.
- $70 MEP
- $80 Structure and Shell
- $40 Finishes
- $75 Kitchen & Servery
$265 TOTAL

Model 6: New Construction - ALL
Build an addition that houses the equipment and mechanically intensive portions of the project, namely the kitchen & servery, as well as the balance of the program. In this scenario, the cost/sf of the kitchen and servery drops to $50/sf, because it is spread over a much broader program.
- $70 MEP
- $80 Structure and Shell
- $40 Finishes
- $50 Kitchen & Servery
$240 TOTAL

Note that these cost models will continue to evolve through the subsequent design phases, as the design itself evolves, along with construction market indicators.

*note: all costs are 2007 dollars, are approximate, and are based on sf takeoffs and basic cost/sf parameters established with HFG during the conceptual design phase.
Budget - $13 vs. $16 million

$13 million

$16 million
**$13 million vs. $16 million**

Two project budgets were posed to the design team. Both were investigated in detail, and the parameters and resultants of each were laid out by the design team for the consideration of the building committee. The $13 million project budget translates to a $9.6 million construction budget (using a 1.35 divisor). The $16 million project budget translates to a $11.85 million construction budget (using a 1.35 divisor). The $3 million uptick indicates dining, kitchen, servery, and support for the expanded campus residential population of 2019.

This section will layout the programmatic and qualitative differences between the two architectural solutions that would result from these two budgets.

Certain assumptions are shared by both the $13 and the $16 million schemes. These are as follows:

- reconsideration of the “wedge”
- code upgrade throughout the building
- gut renovation of the servery
- reconsideration of service/access
Budget - $13 vs. $16 million

aerial view of existing Harmon Hall from SW
Reconsideration of the “Wedge”

The diagonal portion of the existing Harmon Hall, the “wedge” as we have referred to it, is a remnant from the time that Central Street cut through campus. This diagonal was once parallel to the street, and may have made sense at that time. There is no longer a street; it has been reduced to a path that cuts across a quad. A quad should have very different qualities than a street edge. As noted previously, this quad does not have a strong, identifiable presence. The renovated Campus Center should provide that character.

By demolishing the wedge, and reconsidering how Harmon Hall forms the corner of the quad, this space would be reinvigorated. The cost* of demolishing the wedge is as follows:

\[415,800 \text{ cf} \times 0.50 = 208,000\]

This cost is applied to both the $13 and the $16 million schemes.

Code Upgrade

As noted previously, there are extensive code upgrades required throughout the existing building to address Chapter 34 requirements, ADA compliance, seismic and wind loads, and MEP code upgrades. This must be comprehensive in nature, addressing all three floors of the existing building. These costs are applied to both the $13 and the $16 million schemes.

Gut Renovation of Servery

The current servery is not sufficiently sized for peak loads of students. The industry standard for wait time from picking up your tray to being seated is 6 minutes; it very often takes in excess of 10 minutes in the current servery configuration. This suggests that at least the servery should already have been expanded to support the existing campus population. The current servery is approximately 2800 nsf. The recommended size (per Ricca-Newmark, our food service consultant) for the present and future quantity of students that are cycling through the dining hall is 5200 nsf, almost twice that of the existing servery. This will greatly improve the efficiency of the servery, thereby improving the overall dining experience. This cost is applied to both the $13 and the $16 million schemes.

Reconsideration of Service/Access

As noted previously, there are conflicts of pedestrian, service, vehicular, loading, and emergency circulation systems at and around the existing Harmon Hall. This is not only inconvenient, but is dangerous for pedestrians. Moreover, the service faces route 12, the primary street elevation. Both the $13 and the $16 million design proposal should address these conflicts.

*note: all costs are 2007 dollars, are approximate, and are based on if takeoffs and basic cost/sf parameters established with HFzG during the conceptual design phase
$13 million scheme: Program Reduction

The smaller budget allocation assumes that the dining solution does not address the expanded campus population. With that in mind, the required program needs to be reduced to meet the current student population and the commensurate smaller budget. The NSF program reductions are as follows:

<table>
<thead>
<tr>
<th>Program Component</th>
<th>$16</th>
<th>$13</th>
<th>+/-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Dining</td>
<td>7905</td>
<td>6800</td>
<td>-1305</td>
</tr>
<tr>
<td>Servery</td>
<td>5200</td>
<td>4000</td>
<td>-1200</td>
</tr>
<tr>
<td>Kitchen</td>
<td>2900</td>
<td>2400</td>
<td>-500</td>
</tr>
<tr>
<td>Dish</td>
<td>1815</td>
<td>1500</td>
<td>-315</td>
</tr>
<tr>
<td>Kitchen Storage</td>
<td>3265</td>
<td>2700</td>
<td>-565</td>
</tr>
</tbody>
</table>

This is graphically represented in the chart to the right. The white area in each program component indicates the area removed in this scheme. These reductions result in a target of 63,375 gsf for the $13 million scheme.

When the expanded dining capacity is eventually required by the growth of the campus population, each of these components would need to be incrementally added to, bringing the NSF totals back up to the level identified in the $16 million category above.

(+9300 gsf)
add’l reduction
TBD
$13 million scheme ($9.6 million construction)

Cost Analysis

<table>
<thead>
<tr>
<th>Description</th>
<th>CF</th>
<th>Cost/sf</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demolition, All Floors</td>
<td>415,800</td>
<td>$0.50/cf</td>
<td>$208,000</td>
</tr>
<tr>
<td>Renovation, Ground Flr: Full Gut</td>
<td>15,715</td>
<td>$160/sf</td>
<td>$2,514,400</td>
</tr>
<tr>
<td>Renovation, 1st Flr: Full Gut</td>
<td>15,910</td>
<td>$160/sf</td>
<td>$2,545,600</td>
</tr>
<tr>
<td>Renovation, 2nd Flr: Code</td>
<td>10,225</td>
<td>$120/sf</td>
<td>$1,227,000</td>
</tr>
<tr>
<td>Kitchen/Servery/Emporium</td>
<td>10,400</td>
<td>$75/sf</td>
<td>$780,000</td>
</tr>
</tbody>
</table>

$7,275,000 Total Construction Budget
$2,325,000 Remaining
$9,600,000 New Construction Cost/sf
$12,237 GSF Allowable New Construction
$41,850 GSF Renovation
$54,087 GSF Total Area

63,375 GSF Program Area

9,288 GSF Shortfall

$13/9.6 million SUMMARY

Even with significant reductions in program area to bring the level back to the current campus population, there remains a shortfall of over 9000 gsf. This basically indicates that the smaller, $13/9.6 million budget can support a gut renovation of the existing building, but little or no added new construction.

The campus center building committee and the design team strongly recommend that the added costs associated with the phasing of the project, the cost of inflation associated with waiting to complete the second phase, the difficulty of incrementally adding square footage to a range of program components (kitchen, servery, support space, rook dining, main dining, etc.) and the cost of the onerous code and life-safety upgrades required in the existing Harmon Hall suggest that it is most prudent to complete this work as a single, $16 million project, rather than a two-phased $13 + $3 million project. The work to be done for an incremental $3 million now would cost several times that at a later date.
Phasing Options

Option 1: Temporary Kitchen
- 3000 sf trailer (5-wide trailer); open plan, interrupted by columns only
- you are buying these units - approximately $200K, or $66/sf; note that this does not include any kitchen equipment; it is the unit, delivery, and install
- utility costs to support the temporary kitchen will vary depending on its eventual location on campus and proximity to existing services
- there is little or no re-sale value for these units once their life on campus is complete (16-month timeline of construction)

Option 2: Mobile Kitchen
- contract Sodexo (or some similar food service provider) to deliver a mobile kitchen unit (similar to those used at events) for food provisions during the construction of the campus center
- cost tbd w/ food service provider
- similar functionality as option 1 above

Option 3: Temporary Building
- provide a Butler building to house food service during the construction of the campus center
- commensurate in cost to option 1 (approx. $65/sf)
- some re-sale value possible depending on demand (estimated $0.25 on the dollar)
Phasing Options

Option 4: Phasing

- assume $50K/month in general conditions for phasing the project
- assume 6 months added to the project for three phases (2-months each for start-up and wind-down)
- $300,000 addition to the cost of the project

Option 5: Kitchen Blitz

- consider a construction schedule as follows:
  - June-August 06: blitz kitchen and servery renovation, feed students from temp facilities for summer
  - June-August 06: start addition to Harmon Hall
  - Sept 06-May 07: continued work on addition
  - June-August 07: balance of the renovation of Harmon Hall
  - Could be some economy in this scheme, but will inflect the direction of the design greater than any of the other schemes – PDR/P to investigate in schematic design phase.
  - Limits length of temporary kitchen requirements.
  - Cost uptick could be similar to option 4 as a phased approach.
  - Some inconvenience related to phasing the work and keeping the building operational and code-compliant throughout the construction process.
$16 million scheme:

The larger budget allocation accommodates the program, and allows for an addition to the existing building that will fundamentally change the nature of Harmon Hall, and the quad space to the west of the existing building.
$16 million scheme ($12 million construction)

Cost Analysis

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<td>All Floors</td>
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</tr>
<tr>
<td>Renovation</td>
<td>2nd Flr: Code Only</td>
<td>10,225 sf</td>
<td>$120 /sf</td>
</tr>
<tr>
<td>Renovation</td>
<td>2nd Flr: Partial Gut</td>
<td>2,250 sf</td>
<td>$40 /sf</td>
</tr>
<tr>
<td>Kitchen/Servery/Emporium</td>
<td>12,415 sf</td>
<td>$75 /sf</td>
<td>$931,125</td>
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<tr>
<td></td>
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<tr>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>$4,483,875</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>/$190 New Construction Cost/sf</td>
</tr>
<tr>
<td></td>
<td>23,600 GSF</td>
<td>Allowable New Construction</td>
<td></td>
</tr>
<tr>
<td></td>
<td>41,850 GSF</td>
<td>Renovation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>65,450 GSF</td>
<td>Total Area</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3,300 GSF</td>
<td>Shortfall</td>
<td></td>
</tr>
</tbody>
</table>

68,750 GSF Program Area

$16/12 million SUMMARY

Even in the larger budget, there remains a shortfall of approximately 3000 gsf. This is an overage that the design team feels comfortable with at a conceptual design level, but is something that will need to be addressed as the project evolves in subsequent phases.

The campus center building committee and the design team strongly recommend that the added costs associated with the phasing of the project, the cost of inflation associated with waiting to complete the second phase, the difficulty of incrementally adding square footage to a range of program components (kitchen, servery, support space, rook dining, main dining, etc.) and the cost of the onerous code and life-safety upgrades required in the existing Harmon Hall suggest that it is most prudent to complete this work as a single, $16 million project.
approaching Harmon Hall from the SW, winter
approaching Harmon Hall from the SW, dusk
Design - $16 million - Renderings

aerial view of campus from the SE
aerial view of Harmon Hall from the SE
Design - $16 million - Renderings

south elevation
interior view of main dining looking west
Sustainable Design:

Although PDR|P did not discuss sustainable design extensively with the building committee, PDR|P recommends that any new site or building project undertaken by the University should aspire to a set of sustainable design goals. PDR|P has experience with the USG-BC’s LEED Rating System, and has LEED Accredited Professionals on staff. LEED is a good system for evaluating how “green” a given project might be. Some sustainable design strategies that should be considered as the campus center schematic design evolves are as follows:

- **design for 100 years**
  All new construction projects should be considered in light of the life of the building. Any decision made in the design process should be made in the context of the long-term life of the building.

- **building re-use**
  Often, one of the most sustainable recommendations that we can make is the careful consideration of existing building stock. This saves significantly on manufacturing and processing waste and pollution.

- **flexibility**
  Buildings should be designed as specific responses to programmatic needs, keeping in mind that the needs of that program will evolve over time, and that the building itself may not contain that program for the life of the building.

- **natural light**
  Utilizing natural light by providing large windows not only decreases electrical demands and provides a better, more productive working environment, but also takes full advantage of the wonderful views from the campus to the landscape surrounding Northfield.

- **food service**
  Using organic foods and/or supporting local growers provides a healthier solution for the student body while limiting costs and pollution associated with processing and transporting food products.

- **recycling**
  A comprehensive recycling program covering paper, plastics, metals, and food products could be instituted to limit waste and manufacturing processes. Construction waste should also be recycled to the fullest extent possible.

- **light pollution**
  Pollution of the night-time sky with artificial light is a problem throughout New England, but even more so in a remote location like Northfield. This can significantly alter the night-time landscape, adversely affecting wildlife and the environment.

- **landscape restoration**
  Restoring the campus landscape to indigenous plant material where this may have been compromised will result in less water use and an overall more sustainable campus.