



THE OBSERVER

February 2003

Published by the New Hampshire Society of Professional Engineers

A Word From The President

Bill Straub, P.E., NHSPE President

NHSPE Program in Full Swing

The NH Society of Professional Engineers has hit its stride mid-year into the 2002/2003 year. As we head towards our annual Engineers Week celebration, we are involved in many activities. These include:

- *Mathcounts*
- *NHSPE Scholarship Program*
- *Regional and National NSPE Meetings*
- *National Engineers' Week and Mall Exhibit*
- *Membership Dinner Meetings*
- *Legislative Monitoring and Action*
- *Continuing Education Opportunities*

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NHSPE Hosts Meeting Highlighting Kingsbury Hall Renovations at UNH



Speakers at Kingsbury Hall presentation enjoy contributing to NHSPE Scholarship Fund Raffle

On December 4, 2002 NHSPE held a very successful dinner meeting with a comprehensive presentation of the renovation project for Kingsbury Hall, the home of the engineering programs at the University of New Hampshire. Over 50 NHSPE members and other interested parties came to the meeting, held at Huddleston Hall on the UNH campus, and learned about the \$50 Million Kingsbury project, which is scheduled to break ground in May of this year.

Kingsbury Hall is over 50 years old, and those engineering alumni who have visited the home of engineering at UNH recognize that little change has occurred in the 20, 30, or 40 years since our respective graduations! Classroom, office, library and lab spaces are outdated, and cannot compete with other institutions in the region, or nationally. The ability for the engineering programs at UNH to maintain ABET accreditation had become an issue, due to substandard facilities. With the renovations, soon to be underway, Kingsbury Hall will be "state of the art", and a magnificent facility meeting UNH's needs for years to come.

(Kingsbury Hall continued on Page 6)

Dartmouth College's Berry/Baker Library

Billed as the "Library of the 21st Century" Construction of Dartmouth College's Berry/Baker Library is nearing completion. The contractor, Barr and Barr Construction, is completing the final punch list items and all occupants moved into the Final Phase of Carson Hall during the fall term.

Located in Hanover, Dartmouth College is anchored by the Hanover Green, which is surrounded by much of the "old" Dartmouth campus. Baker Library, constructed in 1929, is the iconic monument of Dartmouth College and dominates Hanover Green's North perimeter. The façade consciously was designed to echo Independence Hall in Philadelphia. The architects of this building reached back to the College's roots to recall the spirit of the nation. Eleazar Wheelock founded Dartmouth College as a product of the American Enlightenment; his college was to be "the voice of one crying in the wilderness" bringing culture and thought to Northern New England. Baker Library remains a firm guarantee of the freedom that characterizes an academic community, democratic, open to all, and a sign of the institution's integrity.



As Dartmouth College planned for its new library facilities it was important for the design team to integrate the values and architecture of the existing Baker Library as well as paying particular attention to the integration of technology, flexibility and function. Also, the expanded Baker/Berry Library occupies a pivotal site between the Hanover Green and a new academic row to the North. Further, a movement corridor was critical to provide access both north and south.

To facilitate and guide the design process Dartmouth College enlisted the services of world renowned Architect Robert Venturi in a joint venture with Shepley, Bulfinch, Richardson and Abbott of Boston. The design team developed a three- (3) phase approach to construction.



Phase 1: The Berry addition doubled the size of the existing Baker Library with the addition of 115,000 gross square feet (gsf), increasing the capacity from approximately 1,200,000 to 2,000,000 volumes and accommodating new public services functions, technical services, reading areas, and a café. Integrated into the Berry Library are Computing Services, combining its user service mission with that of the library.

(Dartmouth Library Continued on Page 8)



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Word From The President

[Continued from page 1]

- **Mathcounts** - NHSPE is organizing the Mathcounts competitions in State high schools, during February. Six separate competitions are being held, from the Seacoast to Plymouth, to the North Country,
- **NHSPE Scholarship Program** - NHSPE well on its way to funding the Scholarship program at higher levels than in years past, thanks to generous contributions from many members and firms in NH!
- **Regional and National NSPE Meetings** – Paul Schmidt and Joe Ducharme (NHSPE vice president, and president elect) attended the NSPE NE Regional meeting in Delaware in October; capably representing NH. Bill Straub and Matt Purcell participated in the NSPE National Winter Meeting in San Francisco, contributing NH's perspective to the national program.
- **National Engineers' Week and Mall Exhibit**– A great program coming up. Look for information in this Observer on these celebrations. Allyn E. Kilscheimer, P.E. will be presenting the reconstruction of the Pentagon after the September 11, 2001 terrorist strike. Join us for this great story, and engineering accomplishment.
- **Membership Dinner Meetings** – NHSPE held a very successful membership meeting in December, at UNH, with the Kingsbury Hall renovation as the presentation.
- **Legislative Monitoring and Action** – NHSPE continues to monitor state legislative and other governmental issues of interest to the profession, and provides appropriate input.
- **Continuing Education Opportunities**- A renewed focus this year includes creating specific opportunities for continuing education, meeting the requirements in the NH Rules. Look for NHSPE sponsored education opportunities in the future.

The programs of NHSPE are exciting, and contribute to the vitality of the profession. Take advantage of the programs, to add to your professional life. As National Engineers Week comes upon us, enjoy this annual event and draw particular pride from the profession and your organization.

Bill Straub, P.E., President



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MATHCOUNTS

MATHCOUNTS is now in full swing with Regional competitions under way as of February 1st through February 14th.


We have a total of 60 schools from across the state participating in this year's program, approximately the same as the last few years.

In March, on the 8th, the State Competition will take place at the Plymouth State College campus. We expect an attendance of up to 200 individuals as contestants, coaches, parents, and scorers. You are invited to come and assist in the scoring room and proctoring work.

The top four individual scoring competitors will become the state MATHCOUNTS team, coached by the teacher that has the top team score at the State competition. They will represent New Hampshire in May at the National Competition in Chicago.

Next year the leadership of MATHCOUNTS in New Hampshire will transfer to Ben Pratt. Ben has accepted the position of State Coordinator following the end of this year.

Submitted by
Lee F. Carroll, PE
State Coordinator, N H MATHCOUNTS



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SCHOLARSHIP NEWS

The next scholarship season is now here and applications are now being accepted through April 15th, 2003. This year's scholarship(s) will be a minimum of \$1,000 and will be awarded in May, 2003 to qualified candidates. Eligible candidates are high school seniors or undergraduate students who are currently, or will be, enrolled in an ABET accredited engineering program for the 2003-2004 academic year. For more information on eligibility criteria you can review the insert provided in this month's Observer or just visit our website at <http://www.nhspe.org> where you can also find a downloadable application form.

As always, we are happy to receive donations for our scholarship program at any time during the year in an effort to provide larger and/or multiple scholarships to qualified recipients. Please feel free to contact me by email at rochl@cldengineers.com with any questions or comments. All donations to the scholarship fund are completely tax deductible and you are sure to be rewarded with the future success of our graduates-to-be.

Roch LaRochelle, P.E.



Contributing Firms and Individuals

The following NH firms and individuals contributed to the 2003 scholarship fund:

Contribution Levels:

Gold (Over \$500)

Silver (\$250 to \$500)

Jaworski Geotech, Inc.
Meridian Land Services, Inc.
SMR Engineering, PC

Bronze (Under \$250)

CMA Engineers, Inc.
C&M Engineering
Cuoco & Cormier Engineering Assoc.
Lee F. Carroll, P.E.
Eckman Engineering, LLC
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Thank you for your generous contributions and continued support!

If you would like to make a tax deductible donation to the NHSPE Scholarship Fund, checks can be made out to "NHSPE State Scholarship" and mailed to: NHSPE, State Scholarship Program, PO Box 1343, Concord NH 03302-1343.

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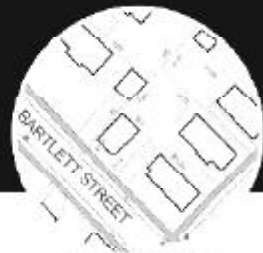
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Legislative Report

"Needs," not "wants" are the order of the day in Concord, quoting Governor Benson. The agencies of state government have been asked to hold the line with an overall target of just 3% increase in the biennium budget. The various policy committees of the House (i.e. Commerce, Education, Executive Departments & Administration, Transportation, Fish & Game, Criminal justice, etc.) have been advised that if they pass any bills with a requirement for new money, Finance will feel free to cut out the money! And yet, we see the Speaker of the House urges passage of a bill that would provide \$12 million of bond money in case Lyme Timber Company does not complete the deal to buy 146,000 acres of North Country property! Wow! So, we all await with "baited breath" the Governor's budget message, which he will present to the House on February 13, 2003.

Back to Business:

- The architect's bill passed the house easily. It will charge appropriately for re-instated architects (some apparently take a license by project, dropping and re-applying) and provide for continuing education - all similar to our Engineer's law today.
- We haven't seen other professional license bills; but the Federal law of "No Child Left Behind" is making big waves in public education circles. It offers considerable amounts of Federal money for student annual testing, reporting of testing results in many categories, and upgrading teacher skills to bring ALL students to grade level. However, is this another Federal mandate like Special Education? Senator Gregg says no way; the Feds will pay! So, I have introduced a bill to say just that: no state general fund money! We'll soon see how many salute that idea!
- This year a series of bills seeking to get local control over operation of all-terrain-vehicles have been introduced. However, if the State funded and owned trails are controlled locally, the 6,000+ miles of snowmobile trails may be jeopardized, a real business problem for the North Country that relies on off-highway- recreational-vehicle business.
- Many important issues are on the docket in Concord not the least of which is paying for our nursing homes, a huge cost problem for the Feds and the State. Now the counties are paying more and more for Medicaid patients. Grafton County tax payers pay in property taxes about \$70 per day per patient contrasted with about \$10-20 only a few years ago!

There must be good news somewhere; but the most I can see is the coming of spring!

John Alger, PE

THE OBSERVER

The Observer is published quarterly by the New Hampshire Society of Professional Engineers for its members. Its purpose is to inform members of NHSPE activities and related topics.

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Kingsbury Hall

[Continued from page 1]

Comprehensive presentations were made on the project by a team introduced by Art Greenberg, Dean of the UNH College of Engineering and Physical Sciences. The team included Paul Chamberlain, P.E., UNH Facilities Director, and Doug Benks, University Architect. The project involves sequential renovation of existing space, and construction of integrated new space at the Kingsbury site. The entire project will take about two years to complete.

The project follows a funding process by the NH legislature, as part of a \$100 Million commitment to rehabilitate science and technology facilities at UNH, Plymouth State, and Keene State Colleges. NHSPE was very involved in the lobbying efforts in 2000 and 2001 for these important projects, based on our keen interest in the success of the Kingsbury project.

Attendees enjoyed networking during a lively social hour, and a buffet dinner prior to the presentations. NHSPE raffled two lift tickets to Waterville Valley, donated by Waterville Valley, to benefit the NHSPE Scholarship program. A substantial contribution was made to the fund as a result of the raffle.

Bill Straub, P.E., President




Art Greenberg, Dean of UNH CEPS Presents Kingsbury Hall project

Engineers Week Banquet February 20, 2003

Keynote Speaker/Presentation:
Mr. Allyn E. Kilsheimer, P.E.
of KCE Structural Engineers PC.
The Pheonix Project, the reconstruction of the Pentagon after the September 11th terrorist attacks, was completed in less than a year. This remarkable achievement was lead by KCE Structural Engineers.

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Dartmouth Library

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Phase 2: The original Baker Library building, essentially unchanged since its construction, was renovated to accommodate new mechanical, fire protection and life safety codes. Many of the traditional reading rooms and gracious public spaces were carefully restored.

Phase 3: The new Carson wing provides an additional 30,000 gsf of academic classrooms, seminar rooms, and function space for the History Department and Computing Services.

Design highlights of the new Berry/Baker Library included a North/South corridor link between the Hanover Green and the North Academic Campus with an institutional "Main Street". This "Main Street" effect is anchored by the Baker Library circulation desk to the South and the Novack Café in Berry Library. The length of "Main Street" features numerable campus computers, library, periodicals, and music circulation desks.

Dartmouth College selected the construction management firm of Barr and Barr to coordinate the project pre-construction and construction of all three (3) phases. Groundbreaking occurred in the spring of 1998 with Phase 1 completed during the Fall of 2000.

(Dartmouth Library continued on page 9)



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Dartmouth Library

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The contractor then proceeded with the Baker Library renovations and construction of Berry Hall, which were dedicated in November of 2002.

When the facilities opened to the public, the future of technology was evident throughout the building. All wiring is in conduits allowing for complete building rewiring when necessary in the future. There are over 1,500 network points throughout the building, which hosts nearly 100 mainframe computers. Digital antennae are placed strategically throughout the facility to allow wireless access in unwired areas and a digital antenna located in the Baker Tower allows students to have the capability to access the campus network from the Hanover Green.

Architecturally, Venturi included a 290 foot façade stretching across the Northern face of Berry unbroken save for a small bend about one-third of the way across the wall going from East to West. To break up the massing Venturi designed a freestanding granite arcade in order to compensate for the uniformity of the Library facade. The arcade is essentially a thirty-foot high post-modern statue running the entire length of the building.

The new Berry Library required the Town of Hanover and Dartmouth College to abandon one of the Town's connector streets. Elm Street formerly connected North College Street (to the East) with North Main Street (to the West) and maintained several vital utilities in its right of way. A major utility tunnel was constructed the full length of the Berry Library to accommodate steam, sewer, stormwater, water, electrical and communication utilities. Elimination of Elm Street also required the College to reconstruct one of the long existing fraternal organizations elsewhere on campus.

Other head-end construction required the demolition of Dartmouth's Kiewit Computer Center. The Kiewit Computer Center was constructed in the 1960's as a then state of the art computer facility. The core of the facility was designed to house a technological core General Electric GE-235 computer in a "climate controlled" machine room.

However, technology changes made Kiewit obsolete and Dartmouth College used the lessons learned with Kiewit to ensure that the computer facilities in the new Berry Library would be flexible enough to allow for all future technologies. The demolition of Kiewit was complicated by extensive hazardous material abatement on the foundation and in the superstructure.

The soil conditions of Carson Hall, where unstable moist clay not found elsewhere on campus, required a foundation system consisting of a 3 to 4 foot foundation mat composed of approximately 1,400 tons of reinforced concrete. Once the concrete foundation walls were complete, a compacted layer of gravel was capped with a six (6") inch floor slab for the basement floor of Carson Hall.

During excavation of the Berry Library foundation, site contractors encountered artifacts related to the life of 19th century Hanover. This delayed construction for a short period of time while archeologists hand-excavated artifacts from a trash pit that was unearthed on the site. Imported ceramic pottery from England and cattle bones provided tremendous insight into a period of American history.

As the construction nears closure the students, faculty, and community members now are finding their own private niches and the value of this important College asset. The completed project concluded with a final construction cost of approximately \$55,000,000 and consists of 149,200 gsf of new construction and 39,500 gsf of existing library space renovation. This new facility will adequately serve the Dartmouth community long into the 21st century.



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February 15-20

Engineering Mall Display
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February 16-22

Engineers Week

February 20

Engineers Banquet and Exhibition
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Holiday Inn, Manchester, NH

March 8

MATHCOUNTS State Competition
Plymouth State College

March 1 - April 25

**Applications for NHSPE
Scholarships Due**

April 23

New PE Dinner

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