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of the Association
of Physical Plant
Administrators of
Universities and Colleges

Facilities Manager

Volume 4 Number 2

Summer 1988



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Facilities Manager

Facilities Manager (ISSN 0882-7249) is published quarterly (Spring, Summer, Fall, Winter) by the Association of Physical Plant Administrators of Universities and Colleges, 1446 Duke Street, Alexandria, Virginia 22314-3492. Editorial contributions are welcome and should be sent with SASE to this address.

Of APPA's annual membership dues, \$30 pays for the subscription to *Facilities Manager* and *APPA Newsletter*. Additional annual subscriptions for both periodicals cost \$40 (\$50 for non-U.S. addresses).

For information on rates and deadlines for display and classified advertising, telephone 703/684-1446.

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POSTMASTER: Send address changes to *Facilities Manager*, 1446 Duke Street, Alexandria, VA 22314-3492.

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Hundley Lithograph, Incorporated

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Printed in the United States of America

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APPA UPDATE

NEWS FROM THE ASSOCIATION OF PHYSICAL PLANT ADMINISTRATORS OF UNIVERSITIES AND COLLEGES

Welcome to Washington!



Photo courtesy of Washington Convention and Visitors Association.

Welcome to Washington, D.C., the nation's capital and host city to APPA's 75th Annual Meeting. Never before chosen for an APPA annual meeting, this vital city offers much to see, learn, and do. Featured this year are speakers from the government and the higher education communities, plus record numbers of outstanding educational sessions and exhibits.

Pre-Convention Events

On Saturday, begin your stay in Washington with tours of the city or the historic Virginia cities of Alexandria and Mount Vernon. Both tours are offered in the morning and afternoon. Or tour the city on your own, if you prefer. The Washington Hilton, site of the meeting, is conveniently located near METRO, Washington's mass transit system. You'll have an easy, comfortable way to see the city.

Sunday's preconference workshops can help you improve personal, professional, and administrative skills. Sessions cover Strategies for Leadership; The Art of Making a Presentation; Managing Stress Effectively; and Producing a Physical Plant Newsletter.

After the workshops, renew old acquaintances and learn about regional activities at one of the six regional meetings.

Exhibit Hall

More than 160 exhibitors will display their products and services on Sunday, Monday, and Tuesday. Products and services include: lock and key, asbestos and hazardous materials management, HVAC, water treatment, computer applications, roofing, cogeneration and energy management, cleaning and custodial products, grounds and landscaping, and more. See page 12 for a list of exhibitors and their products.

Sunday Activities

Opening Ceremony

The Annual Meeting kicks off Sunday afternoon with a welcome from APPA President H.C. Lott Jr. A surprise national figure will cut the ribbon to open the exhibit hall, which will be decorated in patriotic red, white, and blue. Marche Militaire, a dixie/swing band, attired in full military regalia, will entertain. You and your APPA colleagues will be welcomed to the Annual Meeting in the spirit of an old-fashioned political rally.

Sunday Evening

On Sunday evening you have a choice of attending APPA-arranged activities or using your free time however you wish. APPA events include a pool party and picnic at the Hilton and a private tour of

the National Museum of Natural History, part of the Smithsonian Institution (an APPA member). The Smithsonian's extensive collection contains more than 81 million objects including dinosaurs, gems, wildlife specimens, and artifacts from ancient cultures.

Monday Activities

Monday morning begins with a breakfast keynote address by Dr. Linus Wright, undersecretary of the U.S. Department of Education. Dr. Wright will discuss funding prospects for higher education in the 1990s—key issues for facilities managers in light of the deferred maintenance problem. Dr. Wright's remarks will be audiotaped and made available at the end of the Annual Meeting.

Monday evening offers the chance to see Washington on your own or to participate in either of two APPA activities. "Dine Around in Old Town, Alexandria" invites APPA members to sample one of the many wonderful restaurants in this port city. "Washington After Dark" features a tour of the city when monuments are beautifully illuminated against the night sky.

Tuesday Activities

Tuesday morning begins with the President's Breakfast, where APPA members can meet with APPA leaders. H.C. Lott Jr. will review the past year's happenings, and other officers will report on APPA programs and growth. A special session will focus on HEFT and its initiatives, with special recognition given to HEFT contributors.

In the afternoon attendees may take campus tours of Georgetown University and George Washington University. Host committee members and campus representatives will point out unique features of the campuses.

Tuesday evening will highlight the celebration of APPA's 75th Annual Meeting at the Annual Awards Banquet. Special presentations to the winners of the Awards for Excellence in Facilities Management will be made by Dr. Robert Atwell, president of the American Council on Education. Winners of the Meritorious Service Award, the President's

(cont. on p. 4)

Inside APPA

Keynote Speakers

Linus Wright



Linus Wright is undersecretary of the U.S. Department of Education. He was named one of the nation's top 100 educators by *Executive Educator* magazine and has served as superintendent of the Dallas Independent School District, and chief financial officer for the Houston school system and later, superintendent for administration.

Wright began his education career in 1949 as a coach and eighth-grade teacher in Denison, Texas, became principal four years later, and moved to business administration positions within other Texas school districts. Wright received a master's, bachelor's, and honorary Doctor of Law degree from Austin College.

Meeting (cont. from p. 3)

Award, the Rex Dillow Award for Outstanding Article, and Certificates of Appreciation will be recognized. APPA will also honor its outgoing president, H.C. Lott Jr., and welcome its incoming president, Dorsey Jacobs. Following the banquet and awards, Hot Jazz, a local dance band will provide entertainment.

Wednesday Activities

Following the last of the educational sessions, the Closing Brunch will officially close the meeting. Dr. Ernest L. Boyer, president of the Carnegie Foundation for the Advancement of Teaching, will speak on the role of facilities management in influencing a successful academic mission. The Carnegie Foundation, after conducting a wealth of research on student attitudes and recruitment, has discovered that one of the most influential factors in a

Ernest L. Boyer



Dr. Ernest L. Boyer is president of the Carnegie Foundation for the Advancement of Teaching. He is also senior fellow of the Woodrow Wilson School at Princeton University and education columnist for *The London Times*.

Boyer was the twenty-third U.S. Commissioner of Education. He has also served as chancellor of the State University of New York.

Boyer is the author of the widely acclaimed books *High School* and his most recent work *College: The Undergraduate Experience*. He earned his Ph.D. at the University of Southern California and has since been awarded honorary degrees from 84 U.S. colleges and universities.

student's decision to attend a particular college or university is the physical appearance of a campus.

Post-Convention Events

On Wednesday afternoon, you may either choose to sightsee on your own or attend one of two APPA tours: "Great American Heroes," a tour of Arlington National Cemetery and several other military attractions, or "On the Waterfront," a tour of picturesque Annapolis, Maryland, home of the U.S. Naval Academy, the Maryland State House, and many fine shops and restaurants.

On Thursday you may take a special trip to Williamsburg, Virginia, with ample opportunity to roam the streets of this colonial town and visit its various shops and taverns.

The Awards for Excellence: Everyone's a Winner!

The development of APPA's new Awards for Excellence in Facilities Management marks a significant advancement in our profession's evolution. The quality that has marked each phase of the process for these new awards reflects excellence not only by the participants but also upon the profession as a whole.

That quality necessarily began with the development of criteria for evaluating institutional excellence. This was done by the Professional Affairs Committee, with special thanks to Phil Rector and Jack Hug for their contributions. Even before entries were submitted, we saw the validation of these criteria as members adopted them for self-evaluation.

That quality continued in the preparation of member entries—for competitions in each region—and in the selection process by the regions. As the Professional Affairs Committee selected the APPA winners from ten regional awards, the close range of scoring across the seven categories of criteria gave the evidence: everyone was a winner!

The regional winners will be recognized at the President's Breakfast during the July annual meeting; the APPA winners in the Large Campus and Small Campus categories will be announced at the Awards Banquet. Entry materials will be on display throughout the meeting near the registration area. Be there, review the applications for yourself, and join us in celebrating well-deserved recognition.

Congratulations to each of the winners who put a great deal of effort into their entries, to the APPA regions who made it work, and to the Professional Affairs Committee for translating another APPA vision into a reality. We all have won.

—Walter A. Schaw, CAE
Executive Vice President

APPA Update appears in each issue of *Facilities Manager* and features news from the Association of Physical Plant Administrators of Universities and Colleges. APPA is an international association, founded in 1914, whose purpose is to promote excellence in the administration, care, operation, planning, and development of higher education facilities. **APPA Update** is compiled and edited by **Beth A. Rosenfeld**.

Inside APPA

Facilities' Role Enhanced in Accreditation Process

Recognizing the impact of facilities on the quality of higher education, the Council on Postsecondary Accreditation (COPA) invited APPA's input on proposed changes and expansions in the accreditation process. At a March 25 meeting, APPA accepted the opportunity to assist COPA and the regional accrediting agencies in enhancing standards for evaluating higher education facilities.

In its report, "Quality Improvement of Post Secondary Education by Enhancing the Accreditation Standards for Facilities Management," APPA pointed out that present standards for accreditation in the area of physical resources are broad, usually advisory in nature, and sometimes ineffective. APPA therefore offered to serve as a primary resource for the development of a uniform set of accreditation standards that address recognition of fa-

cilities and physical resources as a major capital asset, identification and funding of deferred maintenance, staffing and funding for facilities personnel, positioning the institution's facilities director in executive management, and adjusting facilities priorities and planning priorities to those of the institution's academic mission.

The report also stated that visiting committees often do not possess the expertise to evaluate an institution's facilities management program. To remedy this, APPA offered to make available a facilities and physical resources evaluation professional to become a member of the visiting committees. APPA's Professional Affairs Committee is currently developing an evaluation service that is expected to support and supplement the requirements of accrediting associations.



Smithsonian Institution's Museum of Natural History



The White House (South Lawn). Photo courtesy of Washington Convention and Visitors Association.

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Educational Sessions

The Annual Meeting's first educational sessions are the ever-popular experience exchanges. This year the sessions will address uses of the comparative costs and staffing survey, small college management, medical college management, and organizational and governance issues.

Critical Issues in Higher Education

This series will contain topics of immediate interest to facilities management. The following six topics, highly recommended for all upper level managers, will be offered:

- *APPA/NACUBO Research Study on Deferred Maintenance/Capital Renewal.* Sean Rush of Coopers & Lybrand, the independent company that conducted the survey and compiled the data, will report preliminary findings.
- *APPA/HEFT Policy Forum on Low-Bid Purchasing.* Results of the March forum and steps to be taken next will be reported by forum participants, including

APPA's President-Elect Dorsey Jacobs.

- *Energy Issues.* Frank Stewart, director of state and local assistance at the U.S. Department of Energy, will discuss developments in energy, current and pending regulatory changes, and trends in energy management.
- *Hazardous Waste.* Robert J. Knox, hazardous waste ombudsman at the U.S. Environmental Protection Agency, will review regulations and trends for the 1990s in hazardous waste management, asbestos, PCBs, right-to-know, and other areas.
- *Finance/Accounting Practices.* This session will focus on new accounting standards and practices proposed by FASB and GASB and how these standards will affect accounting and auditing in higher education. Leonard V. Wesolowski, comptroller and associate vice president of Yale University, will examine how these standards will create incompatible financial information.

- *In-House vs. Contract Custodial Services.* Representatives from a university and a contracting company will look at advantages and disadvantages of running your custodial system in-house or hiring a contractor to handle the operation.

Other Sessions

Attendees have the opportunity to choose from more than 20 other presentations given by their colleagues. Monday's offerings include: Training Craftsmen for Work on Historic Buildings, by J. Murray Howard, University of Virginia; Mandatory Recycling at a Major University, by Vernie R. Coston, Rutgers University; Planning and Implementation of a Fiber Optic Local Area Network, by Donald P. Alexander, Georgia Institute of Technology; Computer Applications in the Management of Custodial Services, by Herb Fong, Stanford University, and Peter Vesanovic, Acme Building Maintenance Co.; Planning and Implementing an Inte-

Tappa 89 See El Paso/Juarez!

The 1989 Annual Meeting of the Texas Association of Physical Plant Administrators is to be held in El Paso, Texas at the beautiful Westin Paso Del Norte Hotel, just 4 blocks from the border!

Your host, the University of Texas at El Paso, has created a program for you and yours to enjoy. The itinerary is to include a tour of the new Physical Plant facilities, U.T.E.P. highlights, trips to Juarez, Mexico, and a walking tour of Historic El Paso.

**Make Plans to attend April 15-18.
Look for more details in the near future.**

Call Jim Gray • 915/747-5516

Educational Sessions

grated Waste Management Disposal and Incineration Program, by Lawrence F. Doucet, Doucet and Mainka; and Carpet: Its Problems and Solutions, by Robert F. Burch, George Washington University.

On Tuesday the choices include: Improving Customer Relations, Even During Tough Times, By Ronald T. Flinn, Michigan State University; Marketing Your Deferred Maintenance Program, by Joseph P. Metro and Michael K. Getter, Oberlin College; Negotiating the Labor Contract—A Strategy for the Physical Plant, by F. Spencer Hall, Virginia Polytechnic Institute and State University; Relevance of Life Cycle Costs and Its Impact on Building Delivery Systems, by William J. Humble, University of Queensland, and Maurice R. Pawsey, University of Melbourne; Developing Positive Visibility: A Marketing and Sales Strategy for the Physical Plant, by Robert Hutson, San Francisco State University; Eagles 100%—Turkeys 0: Hiring Practices That Really Work, by Katie Smothers, University of California/San Diego; The United Kingdom Universities: A Buildings Officer's View, by Fred J. Tims, Aston University; Campus Lighting: Criteria for Projects, by David W. Safford, University of Rochester, and Leroy W. Brown, Lozier Architects; Superconductors: Hot Prospects in Cold Materials, by Mohammad H. Qayoumi, San Jose State University; Practical Roof Management Program for Colleges and Universities, by William R. Steinmetz Jr., Midland Engineering Company, Inc.; Electrical Power Distribution System Design for a Small College Campus, by Glenn H. Schott, University of Pittsburgh, and Patrick E. Flanagan, R.T. Patterson Company; Budgeting for Adequate Operation and Maintenance—Treating the Disease, by John A. Burnett, University of California; and Who Motivates the Motivator? by George B. Wright Jr., The George B. Wright Company.

Wednesday's program offerings are: Telecommunications and Systems Intelligence in the Health Science Related Institution, by Alan B. Abramson, Electronic Systems Associates; Environmental Issues, by Diana L. Wilbur, The Mogul Division of the Dexter Corporation; Animal Care Issues and the Operation and Maintenance of Research Support Facilities, by Paul F. Barrett, Massachusetts Institute of Technology, and Nickolas J.

Sojka, University of Virginia Medical Center; and The Multi-Campus Long Range Master Plan, by Nathan Ivey, Dallas County Community College District.

Also offered on Wednesday is "Best of the Regional Papers" featuring two papers drawn from regional meetings last fall: the Central States region will present *Grounds Maintenance as a Recruiting Tool* by Herb Collier, Dr. Wayne Sigler, and Raymond Dale of the University of Houston; the Eastern region will offer *The American Campus in Transition* by Richard S. Hawks of the State University of New York.

Most presentations will be accompanied by a paper for inclusion in the *Proceedings of the 75th Annual Meeting*, one copy of which will be sent to all APPA Institutional Representatives. Additional copies will be available for sale. More information to come in *APPA Newsletter*.

Exhibitor Educational Sessions

Exhibitor Technical Sessions, offered on Monday afternoon, will allow exhibitors to participate in educational activities. Five programs are being offered: Choosing Proper Elevator Maintenance, by Early and Associates; Concrete and Masonry Restoration: Considerations for the Directors of Both Small and Large Physical Plant Operations, by The Western Group; Designing or Modifying Central Heating/Cooling Plants for Maximum Energy Conservation, by Flack and Kurtz Consulting Engineers; The Greiner FMIS-Graphic and Data Capability, by Greiner, Inc.; Hot Water Management: New Technology Leads to Energy Efficiency, by Vanderburgh Enterprises; and Improvements of Cooling Water Treatment Programs Through Computerized Automation, by Nalco Chemical Company.

EXHIBIT SPACE RESERVATION FORM

1989 TEXAS ASSOCIATION OF PHYSICAL PLANT ADMINISTRATORS
April 16-18, 1989/The Westin Paso del Norte

Spaces are multiples of 8' x 10' and cost \$500 per unit. To hold a space, simply return this form with a deposit of 50%, or call Jim Gray, Exhibit Manager, at (915) 747-5516.

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Company _____

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P.O. Box 642, U. T. El Paso
El Paso, Texas 79968
(Not later than August 15, 1988)

Job Corner

Job Corner Deadlines

Job Corner classified advertisements cost \$20 per column inch; display ads cost \$25 per column inch. There is a two-inch minimum charge on all ads and no agency discounts are available. Upcoming Job Corner deadlines are **August 10** for the September edition, **September 2** for the October edition, and **October 10** for the November edition. Send all ads, typed and double-spaced, with an official purchase order to Diana Tringali, Job Corner Advertising, APPA, 1446 Duke Street, Alexandria, VA 22314-3492. Or send your ad via FAX machine, 703/549-APPA (703/549-2772). Call 703/684-1446 for more information.

• • •

Associate Director of Facilities Management. University of Wisconsin—Eau Claire. Responsible for supervision of mechanical, electrical, and plumbing shops; preventive maintenance; energy conservation; technical advice to heating plant superintendent. Qualifications: B.S. in mechanical engineering. Prefer Registered Professional Engineer. Experience as plant engineer desirable. Start: September 1988. Salary minimum: \$34,082. Send letter of application and resume to: Director of Personnel, UW—Eau Claire, Eau Claire, WI 54701 by **July 30, 1988**. *EEO/AA*.

Director of Administrative Services/Facilities. Central Michigan University is seeking an individual to be responsible for the administration, operation, and direction of administrative services/facilities group of the facilities management office. Includes business operations, systems management, budget preparation, fiscal management, internal auditing, training and development, formulating policies and procedures, personnel programs, work control, maintenance reserve and renovation, and systems analysis. Assists assistant vice president for facilities management. Requires a bachelor's degree in business administration, accounting, or finance, five years' related experience in university/educational business affairs units, at least three of which are in business and operations management, and formal training or experience in accounting and fiscal management. Master's or MBA, knowledge of budget preparation and administration, and knowledge and experience in computer application, language, and systems desired. Salary commensurate with qualifications. To apply, send letter, resume, and names, addresses, and phone numbers of three references by **July 25, 1988** to Personnel Office, 109 Rowe Hall, Mt. Pleasant, MI 48859. *CMU is an Affirmative Action and Equal Opportunity Institution.*

Supervisor of Mechanical Maintenance. Arizona Western College seeks a supervisor of mechanical maintenance to plan and supervise the college's mechanical, electrical, water treatment, and preventive maintenance systems and programs. Salary range from \$23,248 to \$28,595. Requires associate degree or equivalent experience in mechanical/electrical systems. Knowledge of or experience with preventive maintenance, computerized or automated facilities, maintenance control systems, water treatment systems, and automotive repair requirements. Minimum of three years' experience in supervision of journey-level employees in the maintenance of mechanical systems and/or equipment. Closes **August 8, 1988**. Submit application, resume, transcripts,

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Submit letter of application, current resume, and 3 letters of reference pertinent to position to:

Kay Meier
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ASSISTANT DIRECTOR, ENGINEERING SERVICES

Easton Hospital, a 369-bed eastern Pennsylvania hospital, is seeking an experienced Assistant Director for our active Engineering Department.

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and three current letters of recommendation or placement file to Arizona Western College, Personnel Office, P.O. Box 929, Yuma, AZ 85364; 602/344-7504. *Arizona Western College is an Affirmative Action/Equal Opportunity Employer.*

Physical Plant Director. Old Dominion University invites applications and nominations for the position of director of physical plant. The director reports to the vice president for administrative services and is responsible for the administration and supervision of facilities maintenance, grounds and landscaping, housekeeping, motor pool, work management center, and other related support service opera-

tions for a 130-acre urban campus. Position dimensions include an \$8 million operating budget, 23 major buildings totaling 1,300,000 square feet, and 175 FTE support personnel. Required qualifications are a bachelor's degree in business, engineering, or related field, and considerable facilities management experience. Strong leadership ability, excellent oral and written communication skills, and the ability to work effectively within a highly complex and challenging environment are important elements for success in this position. An advanced degree in business, engineering, or related field is highly desired. Salary is commensurate with education and experience.

An attractive fringe benefit package is also provided. The search will continue until a successful candidate is found; however, **the search committee will begin screening application materials August 15, 1988.** The employment date is negotiable. Qualified candidates should submit a detailed cover letter, resume, and the names of three professional references to Mr. Matthew A. Krakower, Chair, Physical Plant Director Search Committee, c/o University Employment Office, Old Dominion University, Norfolk, VA 23529.

The University of Texas at Austin

The University of Texas at Austin is located in central Texas. Austin is the gateway to the Texas Hill Country and the Highland Lakes. It is convenient to Dallas-Fort Worth, Houston, San Antonio, and the Gulf Coast. The University of Texas at Austin is a preeminent educational and research institution with a fall semester enrollment of 46,000-48,000 students. In late 1988 the University will begin construction of a 130,000-square-foot Microelectronics and Engineering Research building. Because of the nature of the research to be conducted, and the complexity of the various mechanical, electrical, and other systems within the building, the University wishes to fill the Facility Manager position before construction begins. The successful candidate's initial assignment will be as a construction inspector during construction and subsequent installation of equipment, as a member of the University Construction Management Team.

Facility Manager Microelectronics and Engineering Research Building

Requires a Bachelor's degree in mechanical, electrical, or chemical engineering plus five years' recent experience in managing facility functions in a semiconductor research or manufacturing facility. Must have thorough knowledge and understanding of all functions and services provided in such a facility including mechanical, electrical, electronic, hydraulic, air balancing, monitoring of hazardous materials, environment and safety assurance, hazardous waste disposal, and security. Supervisory experience and superior communications skills are essential. Must have the ability to recruit the necessary personnel to operate the Facility.

Will supervise and direct the activities of a dedicated building staff, including a Safety Officer and technical specialists having the skills listed above. The position reports to the Dean of the College of Engineering and maintains close liaison with the Division of Physical Plant.

Salary will be commensurate with qualifications. Excellent fringe benefits. The starting date is negotiable. Submit letter of application, resume, and other supporting materials by **September 1, 1988** to:

Rebecca De Los Santos
The University of Texas at Austin
Employment Center
P.O. Drawer V
Austin, Texas 78713-7449

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SUPERINTENDENT OF BUILDING SERVICES FACILITIES DIVISION

Auburn University is seeking applicants for the position of Superintendent of Building Services, Facilities Division.

This position is responsible for the management of a large 160-employee in-house custodial operation. Duties include: staffing; submitting budget requests; staff development and training; quality assurance; selection of materials, supplies, and equipment; goal setting; and planning and implementation of a modern custodial maintenance program.

Applicant must have five to seven years' related experience. Prefer applicants with bachelor's degree in Management, Public Administration, or a related field.

This position reports to the Director of General Services.

Salary is competitive and fringe benefits are excellent with Alabama's largest university. Applicants should send current resume and statement of interest to:

Ms. Mary Prather,
Personnel Specialist
University Personnel Services
Auburn University, AL
36849-3501

Applications will be accepted until **August 15, 1988** or until such time as the position is filled.

Auburn University is an equal opportunity, affirmative action employer. Minorities and women are encouraged to apply.

Coming Events

APPA Events

Contact the APPA Educational Programs Department at 703/684-1446.

Jul. 24-27—APPA's 75th Anniversary Annual Meeting, Washington Hilton & Towers, Washington, DC.

Aug. 21-26—Institute for Facilities Management, Charleston, SC.

Sept. 15-16—Hazardous Waste Management, Philadelphia, PA area. Cosponsored by National Association of College and University Business Officers (NACUBO).

Oct. 6-7—Hazardous Waste Management, Tampa, FL. Cosponsored by NACUBO.

Oct. 6-7—Custodial Staffing and Standards, East coast location.

Oct. 13-14—Direct Digital Control Systems, San Diego, CA.

Oct. 23-26—Information Management Workshop: Computer Applications for the Physical Plant, Durham, NC.

Jan. 12-13, 1989—Hazardous Waste Management, Anaheim, CA. Cosponsored by NACUBO.

Feb. 21-22, 1989—Custodial Staffing and Standards, West coast location.

Mar. 23-24, 1989—Hazardous Waste Management, Dallas, TX. Cosponsored by NACUBO.

Apr. 9-14, 1989—APPA Executive Development Institute for Facilities Managers, University of Notre Dame, South Bend, IN.

Regional Meetings

Sept. 21-24—Rocky Mountain Region Annual Meeting, Calgary, Alberta, Canada. Program Chair: Bill Mutch, University of Calgary; 403/220-7555.

Sept. 24-28—Midwest Region Annual Meeting, Cincinnati, OH. Program Chair: Jim Landers, Xavier University; 513/745-3151.

Sept. 24-28—Southeastern Region Annual Meeting, Memphis, TN. Program Chair: E. Dudley Howe, Rhodes College; 901/726-3870.

Sept. 25-28—Central Region Annual Meeting, Kearney, NE. Program Chair: Tom Jones, Kearney State College; 308/234-8533.

Oct. 2-5—Pacific Coast Region Annual Meeting, Fresno, CA. Program Chair: C. Ron Hicks, California State University/Fresno; 209/294-2027.

Oct. 16-19—Eastern Region Annual Meeting, Valley Forge, PA. Program Chair: Frederick Klee, Ursinus College; 215/489-4111.

Other Events

Jun.-Sept.—Johnson Controls Institute Courses. At new training center in El Segundo, CA, four miles south of Los Angeles International Airport. Current offerings include building automation systems, digital system controllers, and pneumatic control systems. Call 800/JCI-8540 for more information.

Aug. 8-12—Variable Air Volume Control, Milwaukee, WI. Sponsored by Johnson Controls Institute. Other courses scheduled through September. Contact: Johnson Controls, Inc., 507 East Michigan Street, P.O. Box 423, Milwaukee, WI 53201; 414/274-4286 or 800/JCI-8540.

Sept. 8-9—Fire Safety Training for Health Care Institutions, Marriott Marquis, Atlanta, GA. Sponsored by the American Society for Hospital Engineering of the American Hospital Association. Contact: Yvonne J. Delaney, Program Coordinator, ASHE, 840 North Lake Shore Drive, Chicago, IL 60611; 312/280-6180.

Oct. 3-6—Electrical Systems Design for the Non-Electrical Engineer, The Wisconsin Center, University of Wisconsin, Madison, WI. To obtain course information call toll free, 800/262-6243, in Wisconsin call 800/362-3020. Ask for Engineering Information or Dr. E.K. Greenwald, P.E.

Oct. 18-20—Fall National Plant Engineering and Maintenance Conference, Georgia World Congress Center, Atlanta, GA. Sponsored by the American Society of Mechanical Engineers. Contact: National Plant Engineering and Maintenance Conference, 999 Summer Street, P.O. Box 3833, Stamford, CT 06905; 203/964-0000.

Nov. 2-5—Urban Land Institute's Fall Semianual Meeting, San Francisco, CA. Contact: ULI, 1090 Vermont Avenue, NW, Washington, DC 20005; 202/289-8500.

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Books, Etc.

Books Available for Review

The following books are available for review. Reviews will be published in future issues of APPA's quarterly magazine, *Facilities Manager*. When you submit a completed book review you may keep the book you reviewed with our compliments. You will also receive copies of the issue in which your review appears. Call Beth Rosenfeld at 703/684-1446 for more information or to reserve a book.

- *Authoring: A Guide to the Design of Instructional Software*
- *AutoCAD Database Book*
- *Building Blocks: Final Report of the Task Force to Review COU Space Standards (Canada)*
- *Cogeneration and Small Power Production Manual*
- *Corporate Planning: A Systems View*
- *Costing Human Resources: The Financial Impact of Behavior in Organizations*
- *Data Center Operations: A Guide to*

Effective Planning, Processing, and Performance

- *Dossier Society: Value Choices in the Design of National Information Systems*
- *Financial Management of Colleges and Universities*
- *Formal Recognition of Employer-Sponsored Instruction: Conflict and Collegiality in Postsecondary Education*
- *The Gower Handbook of Management*
- *Guide to Natural Gas Cogeneration*
- *Handbook of Management Skills*
- *Human Factors in Project Management*
- *Institutional Real Estate Strategies*
- *Looking Good in Print: A Guide to Basic Design for Desktop Publishing*
- *Managing Pension Schemes*
- *Natural Gas Applications for Air Pollution Control*
- *New Opportunities for Purchasing Natural Gas*
- *Personnel Procedures and Records*
- *Supervisor's Guide to Custodial and Building Maintenance Operations, Volume II*
- *Systematic Job Evaluation and Comparable Worth*
- *Technology and Employment*
- *Working Effectively with Trustees: Building Cooperative Campus Leadership*

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Next Year!

Celebrating APPA's First 75 Years

by Christy Wise

The first known photo from an APPA annual meeting. J.M. Fiske, fifth from the left in the front row, is credited with starting the association in 1914.



Over the course of its seventy-five-year history, the Association of Physical Plant Administrators of Universities and Colleges (APPA) has become a more professional organization at the national and international levels while maintaining much of the fellowship and camaraderie of its beginning years.

That is the consensus of members emeritus and retired past presidents who were asked by *Facilities Manager* to discuss the history of APPA. In July 1988 the association celebrates its 75th Annual Meeting; the 1989 Annual Meeting will continue APPA's celebration of its founding in 1914.

For this history, former members

recalled their favorite memories of their first contact with APPA—usually an annual meeting—and reviewed the many changes that have occurred both in the higher education physical plant profession and in APPA itself. Many of APPA's changes were prompted by changes and growth in the field, proving APPA's ability to adapt to the evolving needs of its members.

In the past seventy-five years, the job description and responsibilities of a physical plant manager has changed vastly. They have gone from being supervisors of buildings and grounds, usually under the aegis of other university managers, to being highly professional administrators in their own rights, with significant jurisdiction and responsibilities.

Since the early days of APPA, the facilities management profession has faced enormous upheaval such as growing enrollment and expanding

Christy Wise is a freelance writer based in Bethesda, Maryland. She wrote about the National Asbestos Training Centers in the Winter 1986 Facilities Manager.



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physical plant departments, shrinking enrollments at some institutions, increased federal regulations, automation of mechanical systems, computerized record keeping, formation of labor unions, increased paperwork, and a rise in vandalism, all while physical plant administrators continued to work with fewer funds than were needed to maintain a well-functioning physical plant. The high goals and standards of achievement of APPA's facilities professionals remained the same throughout.

APPA, too, experienced tremendous changes during the past seventy-five years including growth in membership to include junior colleges and other institutions, the establishment of a national office, incorporation as a non-profit educational association, purchase of its own building, the creation of many new programs such as the Energy Task Force and the Institute

for Facilities Management, and the publication of a professional manual.

Some of the controversies that existed through the expansion and growth of APPA are evident in members emeritus' current comments and recollections. Despite the conflicts and difficulties, however, almost everyone speaks about APPA with great fondness and affection. As Bruce Rutherford of Washington State University said, APPA provided "the opportunity to meet with and talk to some of the best people in the business and to pick up new ideas and procedures—some proven and some not."

The organization, according to George O. Weber of the University of Maryland and APPA president in 1970, "grew originally from a small gathering with primarily 'experience exchange' sessions into a professionally oriented organization with struc-

tured programs and support from suppliers through exhibits and annual meetings and advertisements in newsletters."

The Teens and 1920s

APPA was the brainchild of J.M. Fiske, superintendent of buildings and grounds at the University of Iowa in Iowa City, Iowa. In January 1914 he sent letters to the superintendents of buildings and grounds of several mid-western universities and colleges asking about their interest in forming an organization of superintendents.

Many responded and the first meeting was held in 1914 at the Sherman Hotel in Chicago with fourteen people attending. The group formed the forerunner of APPA, the Association of Superintendents of Buildings and Grounds of Colleges and Universities, and that name was retained until 1948.

Although the history of APPA's first



Group shot from the 1930 annual meeting at the University of Kentucky.

fifteen years is somewhat sketchy, the records do show that the annual meetings during those first years were held in the Midwest at Big Ten schools. Roy Lund, who started at the University of Minnesota in 1922 as a draftsman, attended APPA's annual meeting in 1927 at the University of Minnesota.

"There were about fifteen present," Lund recently recalled, adding that the meeting was "mostly 'bull' sessions. Discussions were mainly on custodial problems—painting, classroom lighting—and watchman services." Lund, who retired in 1970 as assistant vice-president and director of plant services, said, "I attended twenty-six national conventions in the United States and Canada. I fondly remember my early contacts with Paul Elleman, Ed Pardon, Henry Pearson, Al Gallistel, and Ed Kinney."

In 1928, the location of meetings expanded to include institutions adjacent to the Big Ten group.

The 1930s

The structure of the meetings

changed in 1930 from a roundtable discussion to a format where members could present papers on current topics affecting the physical plant industry. That year the meeting was held at the University of Kentucky in Lexington with twenty-five people attending. By 1933, attendance had increased by two for the annual meeting at Purdue University in Lafayette, Indiana. The total assets of the association were \$150.

The University of Illinois in Urbana was the site of the 1936 meeting, and for the first time members of the host institution's faculty were asked to present papers. Professor E.R. Watson gave a presentation about acoustics in buildings, a relatively new concept not yet ten years old.

Attendance nearly doubled for the Ohio State University meeting in 1937 with forty-eight people attending. All of the presentations at this meeting were given by members. Paul Elleman, the newly appointed superintendent at Ohio State, hosted the group. Elleman had taken over the hosting duties from W.C. McCracken, former

superintendent at Ohio State and one of APPA's charter members.

Discussions were held during this period about which institutions should be invited to the annual meetings. Some members favored limiting attendance to those within the Midwest, while others suggested it would be better to invite a select few from outside the area. The latter format prevailed and the 1938 meeting was held at Harvard University in Cambridge, Massachusetts.

That meeting was attended by APPA member Cecil A. Roberts, who started at Harvard in 1925 as a construction engineer and retired from the same university in 1969 as director of buildings and grounds and the planning office. Roberts said that during his forty-four years in the profession of higher education physical plant management, the field "became a profession" and APPA became "a full-time organization and received recognition as such."

F. Dudley Chaffee was also present at the 1938 meeting. Through APPA, Chaffee said he "made many friends from colleges in nearby areas." Chaffee, who retired in 1972 from his post as university engineer at the University of North Carolina at Greensboro, commented, "My first job as physical plant director paid \$3,000 per year. My last job as engineer paid me about \$16,000 per year. I wish I could start again now in 1988 at current salaries. Obviously I got into the business too early!" Over the course of its existence, Chaffee said, "APPA became known as the professional society to which one must belong."

During the meeting at Harvard, members decided the Association needed some form of constitutional bylaws to regulate such matters as membership. Thus, at the 1939 meeting at Michigan State, the fifty-five members in attendance adopted a constitution, a simple three-page document. There were two representatives at this meeting from west of the Rocky Mountains—one from Washington and one from California.

The 1940s

In 1940 the association broke tradition and held the annual meeting on

the West Coast at the University of Washington in Seattle. Only eighteen of the total membership of sixty-three attended this meeting, and only one from west of the Rockies.

However, those attending made the significant decision to have representatives of APPA meet with representatives of other college administration groups. Subsequently, a meeting was held in Chicago with representatives attending from the American Council on Education, the four sectional Business Officers Associations, the Educational Buyers Association, and the Superintendents of Buildings and Grounds [APPA].

Meeting attendance dropped off during the war years, with about twenty-five to thirty people present at the two or three meetings that were held. In 1945, regular meetings resumed and thirty-five members attended the meeting that year at Indiana University in Bloomington.

At the 1946 meeting at the University of Nebraska in Lincoln, the group discussed the possibility of forming a West Coast section and of creating a newsletter, neither of which happened at the time. The Nebraska annual meeting was the first one attended by George Weber, who vividly remembered "the dominance of the Big Ten schools that had started the organization in 1914 [and] the experience and competence of the members and their efforts to share problem-solving techniques."

In 1947, attendance increased considerably with about 100 people attending the meeting at Ohio State University in Columbus. Evan H. Walden remembered the group as relatively small, mostly from Big Ten schools. Walden began his forty-one-year career in higher education facilities management at Graceland College in Iowa as superintendent of buildings and grounds; he retired in 1971 from Grinnell College in Iowa as director of physical plant.

Sam Brewster was at Auburn University when he gave his first talk at the 1947 annual meeting, which was also the first APPA meeting he attended. He said he "met some great fellows who became good friends." Brewster shared the common observa-

tion of many longstanding APPA members emeritus that over the past thirty or forty years, the higher education physical plant field gained recognition as a profession.

"In the early days, it was not generally recognized as an administrative function," Brewster recalled, explaining that physical plant administrators were generally under the jurisdiction of the business manager, "and very secondary to him."

Walter Hartmann remembered the 1947 meeting as "the year Paul Elleman was president" and his most vivid recollection was Elleman's skillful organization of the meeting. Hartmann began his career in physical plant management in 1946 as assistant director at Ohio State University and retired thirty-five years later as director of the same plant.

"During the first few post-war years, the major effort was to get things done," Hartmann said. "Now, procedures, regulations, and paperwork consume much of the administrator's time." According to Hartmann, APPA's greatest accomplishment during his affiliation with the organization was "its contribution to higher education."

John Sweitzer, then of Fisk University in Tennessee, also remembered Paul Elleman at the 1947 meeting. "It was a whole new world for me," Sweitzer said about his first exposure to APPA. "I was trained as a mechanical engineer but I didn't know anything about maintenance or institution administration. To find a group of people who did know about this and did want to help was a real eye opener." There were a couple of hundred members at the meeting in 1947, Sweitzer said. "It was a small, very friendly group. It was just what I needed. There were some good role models there, too, starting with Paul Elleman."

Roland Bureau, then of the University of Montreal, also valued the Ohio State meeting for the opportunity to meet experienced members. "It was the first time I was meeting building superintendents of different universities and colleges," Bureau recalled. "At the time, the University of Montreal was fundraising and we expected to build residence halls for the students.



The 25th Annual Meeting was held at Harvard in 1938.

We didn't have the experience for that at the time. I was able to meet the people [at APPA], and they gave me lots of information."

In 1948, eighty-one members of the organization met at the University of Minnesota in Minneapolis and voted to change the name to the National Association of Physical Plant Administrators of Universities and Colleges from the Association of Superintendents of Buildings and Grounds. This was the first name change for the association since its inception and was representative of the change in professional status of physical plant managers. "Plant administration changed from a custodial/handyman attitude to a highly professional administrative responsibility where top university administration began to realize its importance," explained Seldon Kempton, formerly of California State Polytechnic College in Pomona. Much of

the discussion in 1948 centered around campus planning.

The University of Arkansas at Fayetteville hosted APPA's 36th annual business meeting in 1949. That was Lloyd Durow's first APPA meeting, and he particularly appreciated the "exchange of information and willingness of members to assist me—a green and starting administrator—sharing their knowledge and experience in discussing some of my problems." At the time, Durow was superintendent of buildings and grounds for Washburn University of Topeka in Kansas, the same plant from which he retired as director more than thirty-eight years later.

"It was so small," Durow said about the meeting. "What social hour there was consisted of informal gatherings in various people's rooms. After the presentation of the technical papers, it was actually a continuation of experi-

ence exchange in the room. As I recall, there weren't experience exchanges as part of the formal program." Durow said the quality of papers was just as high as the papers presented today. Everyone who attended the meeting was invited over to the house of L.L. Brown, host of the meeting. "Not everybody went, but everybody was invited," Durow said. "That would be impossible today."

Ralph Gates traveled from the northeastern part of the country to the Arkansas meeting on a special train car. He was working at Amherst College as an assistant to the superintendent. "Mr. Henry Thatcher was the superintendent and let me go in his place that year," Gates recalled. "The association was very much smaller than it is today. There might have been sixty members attending the national meeting."

The 1950s

The organization gathered at Yale University in New Haven, Connecticut for the 1950 annual meeting. The members turned down a proposal for the group to affiliate with the Building Owners and Managers Association.

Walter Kraft hosted the 1951 meeting at the University of Oklahoma in Norman. Kraft was a strong APPA leader and initiated an informal newsletter which he produced by mimeograph and distributed three or four times a year.

Creating regional meetings was the subject of much discussion during the 1952 annual meeting at the University of Michigan in Ann Arbor. The association took formal action approving and encouraging the creation of regional groups. Wesley Hertenstein responded by inviting forty or fifty physical plant administrators from West Coast institutions to a meeting at the California Institute of Technology. About fifteen members responded and decided to form a Pacific Coast branch of APPA.

The 1952 meeting was the first APPA meeting attended by Ted Simon of Michigan State University. Simon later became president of APPA in 1972. As a relative newcomer to the field, Simon appreciated APPA's "esprit de corps" among delegates and

John Sweitzer, APPA Secretary (l.), and Walter Wade, President, in 1977.



the open exchange of operating and management experience."

Bruce Rutherford traveled to Michigan that year from Washington State College (later University) in Pullman, Washington, and was impressed with the football stadium and also "surprised that beer was being sold on campus at the student union building."

"In the earlier days," Rutherford observed, "it seemed that more physical plant directors 'grew up' with their institutions and changed institutions far less than appears to be happening today."

R.W. Olmsted of Dartmouth College in Hanover, New Hampshire, attended the 1952 meeting and appreciated the "willingness and enthusiasm of elders to share information." Olmsted devoted thirty-six years to physical plant

management at Dartmouth, retiring in 1976.

Sam Brewster hosted the 1953 meeting at Alabama Polytechnical Institute (now Auburn University) in Auburn, Alabama. "In 1953 the hottest topic was the future status of APPA," Brewster recalled. "The discussion lasted one night until 2:00 a.m." A committee that had been appointed to revise the constitution proposed some major changes, including one to abandon the national meeting on an annual basis, and another to create regional groups in all parts of the country and obtain APPA members only through regional groups.

The consensus was that the group did not want to abandon the annual meeting. Brewster, the new president, was instructed to appoint a constitu-

Sam Brewster (l.) and Charles Daveson at the 62nd Annual Meeting in 1975.





Group photo from the 1948 meeting at the University of Minnesota, at which the membership voted to change the Association's name.

tion committee which later met in Chicago and wrote a revised constitution, detailing the relationship of the national association to the regional groups. During 1953 Brewster started the newsletter on a formal and regular monthly basis.

The regions were not subdivisions of APPA, explained Thomas B. Smith, formerly of Ohio State University and APPA president in 1981; "they wanted to maintain their own identities." The regions "were the parts from which APPA was made," Smith said. "They felt they were as important a building block as APPA was, but not the other way around."

Orrin Bickel of California Institute of

Technology attended the 1953 meeting "to observe the meeting and to gather information for hosting APPA's meeting the following year." He said APPA's greatest accomplishment has been making available to members a continuing flow of valuable information relating to the profession through newsletters, publications, technical papers, and annual meetings.

"It was good to see APPA grow, but I missed meeting on university campuses and the smaller number in attendance as we had during the earlier years of my membership," Bickel said.

John Korbis' first association with APPA was in 1953 when he attended the Pacific Coast APPA meeting at the

University of California in Los Angeles. He was most impressed by the "diversity of personalities and backgrounds of administrators." Korbis began his career as heating plant engineer in 1949 at Idaho State College (now University) and retired in 1979 as director of physical plant at the same location.

Fifty-two APPA members met at the California Institute of Technology in 1954 and adopted the revised constitution, which has essentially remained in its original form. It provided for annual meetings of the association and a Board of Directors with officers and one representative (now two) from each region. The constitution also allowed two members from each institution to join APPA, one being the superintendent or director of the physical plant and the second being that person's assistant or the person in charge of campus planning.

"At the annual meeting at California Institute of Technology, I presided at the business meeting and it was almost unanimous to go national," Brewster recalled. "The organization has grown in size and service ever since. The earlier meetings were more fun, but the service it now renders is so much greater." Brewster later retired from Brigham Young University in 1974 and wrote the APPA book, *Campus Planning and Construction*.

The next annual meeting was held in 1955 at the University of Wyoming in Laramie. The 1956 meeting took place at the University of Wisconsin in Madison. George Moore, then assistant director of the department of buildings and grounds at the University of Cincinnati, attended his first meeting in 1956 and remembered the beauty of the campus along Lake Mendota.

He said that during the 1950s, one of the biggest problems facing the profession was that "university presidents and boards allowed their schools to over-build with no provisions to maintain them. Financially, it caught up with them in the 1960s and 1970s." Moore was one of several members emeritus interviewed who lamented APPA's change in ambience as the organization grew.

"I can remember going to these

APPA's two executive directors: Paul T. Knapp (l.), 1972-1985, and Walter A. Shaw, 1985-present.



meetings when they were very, very small groups, and they were a lot more fun that way than the large outfits getting together," Moore commented. "But I still say that APPA is one of the greatest organizations I've ever belonged to."

Tulane University's George Johnson linked up with APPA for the first time in 1956 and appreciated the opportunity to join "an organization of most congenial and informative members." Johnson retired as director of physical plant from Tulane in 1975, after thirty-six years in the profession, all at the same institution.

Harry Ebert also made his first contact with APPA during this time, and he recalled the camaraderie, warm, personal friendships, and one-on-one information exchange at his first annual meeting. Ebert, who became APPA's president in 1976, retired in 1979 as director of the physical plant at Rice University in Houston, Texas after forty years in the profession. "I have come to realize that people respond to their environment," Ebert said. "An attractive, functional, effective, and economical campus is as great a positive contributing factor to higher education as is any other single element."

The 1957 meeting was held at Temple University in Philadelphia, Pennsylvania with ninety-six members attending. This was the first meeting at which suppliers and manufacturers of building materials were asked to present exhibits. Most of the presentations were by professionals outside the organization.

At this meeting, APPA authorized Jack Adwers to look into forming summer workshops. George Deemer, then with Carnegie Institute of Technology (now Carnegie Mellon University), attended the meeting at Temple. "The opportunity to visit the campus of

member institutions was interesting and enlightening to those of us who had the responsibility to operate and maintain our own campus," Deemer said. "The annual meetings always afforded the attendees that opportunity." Deemer said as the organization grew, it was necessary to give up meetings on college and university campuses. On the other hand, Walter Wade of Purdue University pointed out that that responsibility could often become too much responsibility for the host member.

Wade said establishing a national office "was a major step forward. Up until then the host for the annual meeting ran the whole show. He arranged the program, he arranged the hotel, and this from a member of APPA who just volunteered to host the annual meeting. It got to be quite a chore." During his career as a physical plant administrator, Wade said universities and colleges experienced enormous growth, requiring expansion of staff as well. When he started at Purdue in 1946, there were four administrators involved in operation of the plant. "When I left Purdue, I must have had 105 administrators working for me and the staff was roughly 900 people altogether," Wade said. The population of the campus had grown from 7,000 students to roughly 32,000 in that time.

In 1958 the group met at the University of New Mexico in Albuquerque and instituted the Meritorious Service Award, giving recognition to Al Gallistel, Paul Elleman, and Sam Brewster. Gallistel was also honored for his twenty-nine years of service as APPA's secretary-treasurer.

A. Clayton McGarvey, of Thiel College in Greenville, Pennsylvania attended the New Mexico meeting and said that he will never forget the ox roast that was held one evening.

J. McCree Smith attended the 1958 annual meeting from North Carolina State University and remembered meeting M.F. "Fife" Fife, Bob Houston, and others from across the United States. He said through APPA he "formed lasting friendships with men that profoundly influenced me."

In 1959 at Kansas State University, APPA members changed the constitution to create a first and second vice-president, rather than a single vice-president, each of whom would host upcoming annual meetings. The first summer workshop was held that year at Purdue and became an annual event.

"When we arrived at Manhattan [Kansas] we were on the fringe of a tornado," remembered John E. Tronoff of the University of California at Berkeley. "I had never seen anything like it before. Everything was flooded. Four days later, as we left, the ground was dry and the dust was blowing everywhere."

That was Tronoff's first exposure to APPA, an organization he said brought professionalism into the physical plant during the twenty-four years he was a member. "It is now a well-known fact that the physical plant must be headed by a professional with the education, knowledge, experience, and training in physical plant operations," Tronoff added.

William Macy Stanton, who retired as director of physical plant at Swarthmore College in 1984, attended the 1959 meeting and remembered the "hot hotel and a young fellow named John Sweitzer who was elected secretary."

Fred Day of the New Mexico College of Agriculture and Mechanic Arts attended a regional meeting in 1959 held in Bozeman, Montana. "'Moose' Whalen held a barbeque at his ranch," Day said. "The food and scenery were outstanding. One of the 'stunts' was a cow milking contest. Bob Houston, with enough booze under his belt, made that one of the funniest events I've ever been involved in. Those cows were probably never the same after that."

The 1960s

Members of APPA met at the Mas-

The first PCAPPA meeting, held at Caltech in 1952.



sachusetts Institute of Technology in Cambridge in 1960 and adopted the procedure of informally selecting an annual meeting site two years in advance.

Thomas Smith attended that meeting and remembered a talk by Steve Fuller on labor relations and a warm acceptance by other members. Smith said as more of the labor force became unionized, it was important for physical plant administrators to learn about dealing with organized labor and union contracts. "At the 1960 meeting, Ted Simon and I were the youngest members present," Smith said, "but we soon got over that!"

That was also the first meeting for Paul Davis, superintendent of buildings and grounds for Smith College in Northampton, Massachusetts. He considered it a privilege and a pleasure to meet with APPA members such as Sam Brewster and Al Gallistel, among others. Peter Welanetz of Williams College and Harold Ingram of the Rhode Island School of Design also attended the meeting at MIT.

In 1961 the association met again on the West Coast at Oregon State University with 102 members attending. Dick Adams was the host and gave the

group its first big fish fry and introduced the general membership to Dr. Glockenspiel, editor of the newsletter. "Special mention should be made of Dick Adams and his single-handed effort to keep the newsletter going," said Philip Koehler, APPA president in 1980 and retired director of facilities management at the University of Hawaii.

"The old informal newsletter, edited by Dick Adams, had a feature called 'Della's Dillies', which included strange and funny communications received by somebody's physical plant office," remembered Foster Jacobs, then of Princeton University. "At one time I thought we should publish these in book form. The only one I remember now was a work order, handwritten, which said something like 'Send plumbers to Administration building to fix a leaky registrar.' Things like that helped one to survive what otherwise could be a frequently stressful occupation."

APPA traveled outside the United States for the first time for the 1962 annual meeting at McMaster University in Ontario, Canada. By this time the assets of the organization were almost \$10,000 and dues were raised to \$25.



At this meeting a role was made for an additional vice-president who was to be given responsibility for editing the newsletter.

Elbridge Bacon of Stanford University was present at the 1962 meeting and recalled "close control of the organization by a very few older members." Louis DeVries of Pan American College (now University) attended the Canada meeting and said Ruel Purvis of Trinity College (now University) in San Antonio questioned the grouping that put Texas and North Dakota in the same region. DeVries also remembered "when those in the northern tier were fighting freezeup and snow removal, I was busy burning prickly pear cactus to feed cattle."

Seldon Kempton, who retired in 1983 as director of physical plant at California State Polytechnic University, said, "In 1962 when I joined, APPA had an unpaid secretary who was an APPA member and plant director. A newsletter was put out by the director at Oregon State College—so you can get an idea of what has changed."

APPA celebrated its 50th anniversary May 19-23, 1963 in Chicago with more than 150 members present and a gala program including an entertain-

ing evening honoring sixteen of the then-retired members and their spouses.

The June/July newsletter of that year noted, "One of the more interesting papers on the program was delivered by Julian H. Levi, executive director of the South East Chicago Commission, on 'Urban Renewal and Universities.' The conditions that he described and the means of combatting these conditions, to some of us, are a preview of things that we ultimately must face, and the experience that they have had in Chicago will be invaluable to administrators all over the country in years to come."

The meeting in Chicago was Duane Nollisch's first and he enjoyed "meeting and talking to 'wise old hands.'" Nollisch retired from his position as physical plant director of the University of Iowa in 1986.

At the 1964 meeting at Trinity College in Texas, the constitution was changed to allow institutions to have three members and the newsletter was taken from the responsibility of the second vice-president and vested somewhat permanently with Dick Adams.

In 1965 at North Carolina State University, the incoming president was instructed to appoint a professional affairs committee to investigate, develop, and implement ways of establishing good professional standards applicable to APPA and its members. This committee has remained active, concentrating its efforts on encouraging members to write and publish professional papers as well as exploring ways of advancing the profession through new programs and services such as the new Awards for Excellence in Facilities Management.

Harold L. Taylor Jr. of the University of Virginia remembered visiting North Carolina, Duke, and Wake Forest universities during the 1965 meeting, as well as enjoying the banquet and watching "cloggers."

The meeting at Stanford University in 1966 drew 202 of the 507 association members; participants came from forty-nine states, many provinces of Canada, Puerto Rico, the Philippines, Ceylon, Australia, and Lebanon. The treasury balance at this meeting was

\$17,806.05. Kempton was particularly impressed by a paper given at that meeting titled "Candlelight Schools in a Satellite Age."

Many remember the meeting in 1967 at the University of Montreal as one of their favorites. Expo '67 was held in Montreal that year and provided a special attraction outside the meeting. Art Chisholm of Dalhousie University in Halifax, Nova Scotia said several annual meeting presentations related to EXPO and the physical plant problems there. "One whole day was out at the EXPO site," Chisholm remembered.

At the annual meeting itself, "there were sessions on different topics and different problems that were common to a great many universities. The experience exchange was just as popular then as now. With smaller numbers there were opportunities to get a little more exposure and a little more in-depth information." Chisholm added that one learns in two ways from APPA annual meetings: "You learn from the papers that are presented but you learn just as much from the people—some of whom become really good friends."

Of the association's 586 members, 482 attended the Montreal meeting, including 117 spouses. During this occasion, the groundwork was laid and constitutional requirements met to enable the association to change its name and to make significant changes the following year.

During the 1968 meeting at Colorado College, the association officially changed its name to the Association of Physical Plant Administrators of Universities and Colleges and revised the constitution and bylaws. Major changes included the method of selecting the national president and membership classification. Charles Butler, who became APPA president in 1979, remembered the excellent educational program of the Colorado meeting and "the friendly, brotherly, companionable members of the organization."

At the University of Maryland in June 1969, APPA moved toward expansion by amending the constitution to accept two-year colleges that met specific requirements, and approved the changing of the dues structure and



the appointment of an interim executive secretary. There were 658 members of the association at this time.

Richard Neidhard, then of the University of Cincinnati, attended the meeting at Maryland and recalled "campaigning to get the membership to come to Cincinnati for the 1972 meeting—which they did!"

The 1970s

In 1970, APPA went south to the University of South Florida where the association officially changed its constitution to allow selected two-year colleges be eligible for membership. The dues structure was changed and Gerald Hawk, director of physical plant at Eastern New Mexico University, was named interim executive secretary.

"It was talked about for a few years before it happened," Ralph B. Gates remembered about the change to

include two-year colleges. "Some members thought that those colleges did not have the same problems that the four-year colleges and universities did. Most of them were much smaller and their needs were not as pressing as some of the larger universities." Gates started his career in 1937 at Amherst College and retired in 1980 as superintendent of facilities at the Harvard Law School.

"We went through many years of discussing whether or not we ought to admit the junior colleges or whether or not we ought to have associate members," remembered Sweitzer, who retired from Earlham College in 1983. "Those were major issues." However, by the time the vote actually came up, members had discussed the point for so long that it finally became accepted, said Sweitzer. "For one thing, junior colleges grew and a lot of junior and community colleges were consid-

erably larger than the small four-year colleges in APPA, so their people were just as professional, if not more so." The admission of junior colleges and other institutions allowed APPA to grow, Sweitzer said. "There was no way APPA could support a central office in those days," he said. "If you wanted to support a central office, you needed to grow." Sweitzer served more than twenty years as APPA's secretary.

Also in 1970, the association approved the format of an APPA reference manual prepared by the Standards Committee and directed the committee and the secretary to proceed with publication of the manual and distribute it to all association members. By early 1971 the APPA reference manual was completed and distributed to all members; during APPA's annual meeting in April of that year at the University of Arizona, a



Attendees at APPA's Golden Anniversary Meeting, held in 1963 in Chicago.

system was established for keeping the manual current.

The members also voted to make changes in the constitution and to hold two workshops each year, one in the east and one in the west. A total of 703 people belonged to APPA at that time, and the proposed operating budget for the coming year of \$63,600.

"In 1972 I was chairman of the national meeting in Cincinnati," recalled George C. Moore, then of the University of Cincinnati and APPA president in 1973. "We had over 100 exhibitors and made \$35,000 profit for the APPA treasury. The minutes of the meeting were printed, edited, and mailed out to the members within six weeks of the meeting. I know it never happened before and, I dare say, not often since. APPA was a fun group and helped me through the years. I hope I gave as much as I got out of it, because I sure got plenty from it."

At the meeting in 1972, the constitution and bylaws were amended again, changing the method of selecting annual meeting sites, the methods for electing officers, classification of members, requirements for a quorum, and the method for correcting inconsistencies.

This meeting was also the occasion for a major change in APPA's structure—the naming of Paul T. Knapp as the association's first executive director and the opening of the new central office in Washington, D.C. on June 12, 1972. Knapp and one secretary were the entire staff in 1972.

APPA was given space at the One Dupont Circle offices of the National Association of College and University Business Officers (NACUBO) for the first several years before getting its own office space at Eleven Dupont Circle. D.F. Finn, head of NACUBO at the time, was one of the business officers

who recognized the importance of the physical plant administrator to the operation of universities and colleges and was quite supportive of APPA and the establishment of a national office.

"Some, including me, felt the national office tried and did take away from the membership control," said George Moore. But others, such as Paul Davis of Smith College, said the development of the association's office was one of APPA's major accomplishments during his affiliation with the organization. "It not only was a source of information and help, it gave a proper stature to the members of the association," Davis said.

In 1973 the annual meeting was held in Honolulu, Hawaii, the first annual meeting away from the North American mainland. Philip W. Koehler of the University of Hawaii at Manoa and APPA president in 1980, said he delights in remembering "the call in January from then president Ted Simon asking if we should cancel the April Hawaii meeting because of slow pre-registration of attendees and exhibitors. We did not cancel this first, and only, meeting outside the continental limits and, as I recall, we had one of the greater attendances to an annual meeting up to that time. We also made an unexpected profit mainly because our facilities management staff handled everything, negotiated everything, energetically pursued contributions, and provided most of the entertainment with in-house talent," Koehler recalled. "As I recall, we made a \$28,000 profit, an unheard of amount in those days despite putting on the one and only weeklong convention in the history of APPA. From all reports, it was possibly the most memorable as well."

At the 1973 meeting, the one-thousandth member was admitted to APPA. In November of that year, the membership voted to incorporate and change the tax status from that of a trade association to that of an educational organization.

"As treasurer at that time, it fell upon me to shepherd APPA through the process of incorporation," Pete Welanetz said. "I conducted the portion of the meeting in Hawaii that authorized incorporation. Since there

Harry Ebert (l.) and Harold Buddenbohm at an annual meeting in the 1970s.



Outgoing President Charles Butler (l.) receives award from incoming President Philip Koehler in 1980.



Tom Smith (l.) and Jim Murphy at the 71st Annual Meeting.



was significant opposition to the idea of incorporating, it was a difficult, but exciting, process. The favorable decision to incorporate was, in my mind, second only to the original founding of APPA in its importance in the history of the organization."

The constitution was dissolved at the 1974 meeting in Houston, Texas, and articles of incorporation were drawn up along with new bylaws. APPA became a non-profit educational organization. In the midst of the national energy crisis due to the OPEC oil embargoes, APPA decided at this meeting to put in motion the Energy Task Force, a joint effort with NACUBO to obtain short-term grants to perform research and studies about energy matters. "The association took an active part in investigating methods of reducing energy consumption and disseminating the word to member institutions," recalled Tom Smith.

"I thought it served a very important function," John Sweitzer said about the Energy Task Force. "It certainly helped me a lot. We got a lot of money for help on energy conservation and a lot of ideas of what we could do."

The 1974 meeting was the first APPA meeting attended by Rex O. Dillow of the University of Missouri-Columbia and APPA's acting executive director in 1985. Dillow remembered the exhibit hall and the cooperative spirit of the participants at the Houston meeting.

APPA's first manual, titled *A Basic Manual for Physical Plant Administration*, was edited by George Weber and published in 1974. This was the first time APPA published a major reference book for the physical plant profession.

In 1975 at Salt Lake City, Utah, APPA created the Office of Special Projects in the national office, including adding a new vice president. The first project by the new office, inspired by a federal ruling in the early 1970s, was to develop programs and publications to provide access to the handicapped on college and university campuses. Also in 1975, APPA and NACUBO jointly developed a standardized classification of accounts for physical plant that is still in use today.

Deferred maintenance was one of the main topics of discussion at APPA's annual meeting in 1976 held in Atlantic City, New Jersey. "APPA's effort to get higher education administrators, Congress, and state legislatures to recognize the seriousness of deferred maintenance is very important," said Dick Neidhard.

In 1977 the annual meeting moved south to Hollywood, Florida, and the national office moved into its own leased quarters at Eleven Dupont Circle with a staff of nine people.

The annual meeting in 1978 was held in Minneapolis, Minnesota. That was the first meeting attended by Ken Niessen of Carroll College in Waukesha, Wisconsin. "During four of the meetings I took my entire family," Niessen said. "In particular, my wife enjoyed the activities."

Also in 1978, according to Rex Dillow, "upon the request of President Walter Wade, Sherry Reynolds (Crittenden) and I developed and administered two preventive maintenance seminars in Salt Lake City and Nashville. These were the forerunners of the seminar and Institute program."

Seattle, Washington was the site of the 1979 annual meeting. When Charles Butler became president that year, he said, "President Walter Wade came to my room on Sunday evening and handed me the gavel. He said he had to go back to Lafayette, Indiana due to his wife's illness and that I was in charge. What an eye opener! I learned quickly, though." Butler began his thirty-year career in physical plant management at the University of Tennessee in Knoxville and retired from the University of South Florida in 1982.

The 1980s

APPA convened outside the United States for the 1980 annual meeting in Toronto, Ontario, Canada. Dillow was active that year as well. "I was appointed to a three-year term as coordinator of the two-and-a-half-day Workshop. That year we converted to the week-long Institute for Facilities Management with three courses of prescribed curricula."

In 1981 APPA members met in Okla-

homa City, Oklahoma, then moved further west in 1982 to Phoenix, Arizona. "The two years as president-elect and president were a high point for me," said Smith, APPA president in 1981. "The Midwest APPA meeting in Columbus in 1981 was greatly enjoyed."

Louisville, Kentucky was the site of APPA's 70th annual meeting in 1983. Most attendees remember the hot, muggy weather and the paddleboat dinner on the Ohio River.

In 1984 APPA met in Columbus, Ohio. A new reference book, *Facilities Management: A Manual for Plant Administration*, was published that year. This 864-page hardcover publication was edited by Rex Dillow, who had retired in 1983, and is still actively in use as the basic text for the twice-yearly Institute for Facilities Management. In July 1984, APPA purchased its own building in Alexandria, Virginia and moved the national staff of twelve across the Potomac River.

"My most special memory of APPA," said Dick Neidhard, "was the banquet at the 1984 meeting in Columbus when I was presented with the Meritorious Service Award. That kind of an honor is seldom enjoyed by many people."

San Diego, California was the site of the 1985 annual meeting. That year marked a change in executive directors, with Paul Knapp leaving after thirteen years with APPA to join the American Institute of Architects, and Walter A. Schaw became executive director (now called executive vice president) in August. That year also saw the publication of the first issue of *Facilities Manager*, the association's professional quarterly magazine. In that same year, the Institute for Facilities Management was redesigned and expanded, with particular emphasis placed on high-quality faculty and additional special programs in areas of member interest.

At the 1986 annual meeting in Boston, APPA announced the formation of the Higher Education Facilities Trust (HEFT), a fundraising effort that would enable APPA to provide additional development programs, policy forums, and other professional services that could not be funded through

the general operating budget. Funding sources would include corporations, suppliers, and foundations. In 1986 APPA held a series of workshops on the purchase of natural gas as a result of recent deregulation.

APPA held the 1987 annual meeting in New Orleans, where the fundraising drive for HEFT was kicked off at the President's round-table breakfast. In that same year, APPA sent President H.C. Lott Jr. and eleven other facilities experts on a study tour to the People's Republic of China. This landmark visit resulted in the first-ever agreement of its kind between professional facilities associations in both countries to work together for a continued exchange of ideas and activities.

This year, for APPA's 75th Annual Meeting, a record 1,400 members are expected to attend the association's first meeting in the nation's capital, Washington, D.C. Special highlights will include keynote addresses by Ernest Boyer, president of the Carnegie Foundation for the Advancement of Teaching, and Linus Wright, undersecretary of the U.S. Education Department. In addition, the meeting will feature a series of workshops on Critical Issues in Facilities in Higher Education, campus tours of George Washington and Georgetown universities, and announcement of the results of the joint APPA/NACUBO major study of capital renewal/deferred maintenance needs at our nation's colleges and universities.

Conclusion

As university and college physical plants have grown and become more sophisticated, APPA, too, has kept up and often led the changes. Many members affiliated with APPA through the years would agree with Ted Simon's estimation that APPA's greatest accomplishments have been the ability to "grow professionally, keep pace with new technologies and procedures, and become more influential in directing the flow of dollars to the facilities function. APPA has become nationally recognized as the authority on higher education facilities."



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A Commitment to Professional Development

by Beth A. Rosenfeld

Participants in this Year's Executive Development Institute: front row, left to right-- Francis M. Nataluk, Cranbrook Educational Community (MI); Howard A. Wells Jr., Oregon State University; James McCoy, Virginia Polytechnic Institute and State University; Edward C. Bogard, University of Nebraska Medical Center; James M. Kaufman, University of Michigan; Philip G. Rector, University of Arizona; Jack Hug, University of California/San Diego; Rodolfo M. Roman, Contra Costa Community College District (CA); Donald G. Lumley, Kent State University (OH); Larry E. Nokes, Pittsburg State University (KS)

center row, left to right-- Drew M. Chidester, West Virginia University; Edward E. West, Murray State University (KY); Bob Hascall, University of California/San Francisco Medical Center; Charles E. Bailey, University of Minnesota; Dean H. Fredericks, State University of New York at Buffalo; H. Allen Stearns, Prince George's Community College (MD); J. R. Swistock, University of Virginia; John E. Wright, Schoolcraft College (MI); Donald B. McCulloch, Bloomsburg University of Pennsylvania; John Ezyk, Ryerson Polytechnical Institute (CN)

back row, left to right-- Dan Castellan, University of Windsor (CN); Robert A. Silvagne, University of Minnesota; Anita L. Zimmerman, faculty member; Dennis Gilbertson, North Dakota State University; Jon H. MacLeod, University of Iowa; Thomas A. Smith, Ball State University (IN); Millard C. Jorgenson, Illinois Wesleyan University; Todd M. Bemenderfer, Executive Programs Division, University of Notre Dame; College of Business Administration

Beth Rosenfeld is assistant editor of Facilities Manager and editor of APPA Newsletter.

"Professionalism in physical plant is important, and executive development is a key element in professionalism," says Philip G. Rector, APPA's 1987-88 Vice President for Professional Affairs and director of physical resources at the University of Arizona. This is just one of the reasons why Rector attended the second APPA Executive Development Institute for Facilities Managers last April. Other reasons are that he feels the need for such a program every three or four years as a refresher and for stimulation and increased executive training.

The APPA Executive Development Institute for Facilities Managers, conducted at the University of Notre Dame, provides senior facilities managers with skills needed to assure productive, service-oriented facilities support organizations at educational



institutions. The Institute provides training in facilities-related institutional policy making, financial management, and strategic planning.

The first Institute, held August 16-21, 1987, was attended by twenty APPA members. Based upon their evaluations and suggestions, the twenty-seven participants of the second Institute, held April 10-15 this year, were accorded an enhanced accounting session, a public relations session, a group problem-solving session, a free afternoon in the middle of the week, and a tour of Notre Dame. Both Executive Development Institutes were enthusiastically received.

Rector, a physical plant director for more than twenty years, appreciates the technical aspects of the Institute for Facilities Management; however, he feels the Executive Development Institute allows him to hone management skills. He explains, "I have been

in the business a long time and there are still things to learn."

The Need for Executive Development

"Everywhere in higher education today, there is an increasing awareness of the importance of good management of facilities assets and programs. More than ever before, the successful higher education facilities manager must be both a skilled manager of facilities assets and a leader who can inspire effective organizational performance," explains APPA's Vice President for Educational Programs William D. Middleton, of the University of Virginia. The Executive Development Institute, he says, was established to meet this need.

Michael J. Etzel, Executive Development Institute faculty member and professor of marketing at Notre Dame, believes that executive devel-

opment programs introduce and familiarize participants with new ideas and concepts, broaden their orientation, allow them to step back and think about things outside the job, and provide a morale boost. Emphasizing the value of peer contact, Etzel adds, "The participants get as much from each other as they get from the faculty."

Professor Desmond D. Martin, who conducts corporate executive training programs and is director of the executive development program at the University of Cincinnati says, "The opportunity for learning and development does not and should not stop." He adds that executive development offers "learning for people in dynamic situations" such as those faced by physical plant management. APPA members might be familiar with Martin who is a faculty member at APPA's Institute for Facilities Management and whose articles on executive development are published in several APPA publications.

Martin, coauthor of the new book *Management for Professionals: Insights for Maximizing Cooperation*, considers executive development more important now than ever before. Echoing Etzel's opinion of the value of peer contact, Martin adds that executive development programs enable peers to get together to discuss their problems and interact in the context of the course material designed specifically for them. Because there are fewer people in upper level management, he says, most training programs have a supervisory slant. Executive development training, however, emphasizes strategic planning and other topics of interest to upper-level management. Although he conducts more programs for manufacturing executives whose top issue is quality of products, Martin feels that quality of services is the top issue in the higher education facilities profession—an issue that is best addressed at the top management level.

Upper Management Concerns

Thomas A. Beckett, director of facilities maintenance at Contra Costa Community College District in Pleasant Hill, California, attended the



first Executive Development Institute in August 1987 because of the program's focus on upper level management. Even though he has attended other executive development programs, Beckett says, "I got more out of [this program] than any other I've attended. It was good to get away and to be able to look at things in a different way." He says that he also obtained several good ideas and the comfort in knowing that others share similar experiences.

Higher-level planning concerns were also the reasons why John Collins, director of physical plant at the University of Hartford, West Hartford, Connecticut, attended the first Institute. He calls the marketing session a "pleasant surprise" because it reinforced his opinion that physical plant is a service organization and that marketing is an integral part. As a result, he feels that he can now communicate to his staff about a sense of cooperation in their work. In fact, he

"Overall, appreciated high quality of approach."
 "A good experience."
 "Thanks for a good program!"
 "A good direction for APPA to go in."
 "Very good choice of location and instructors."



says that the information from the marketing session was used as criteria in filling two crucial positions in his department this year.

Jack Hug, assistant vice chancellor of physical plant services at the

University of California/San Diego and APPA's 1988-89 President-Elect, attended the second Institute for the stimulation, sense of renewal, and chance to refocus and take a closer look at things he does each day.

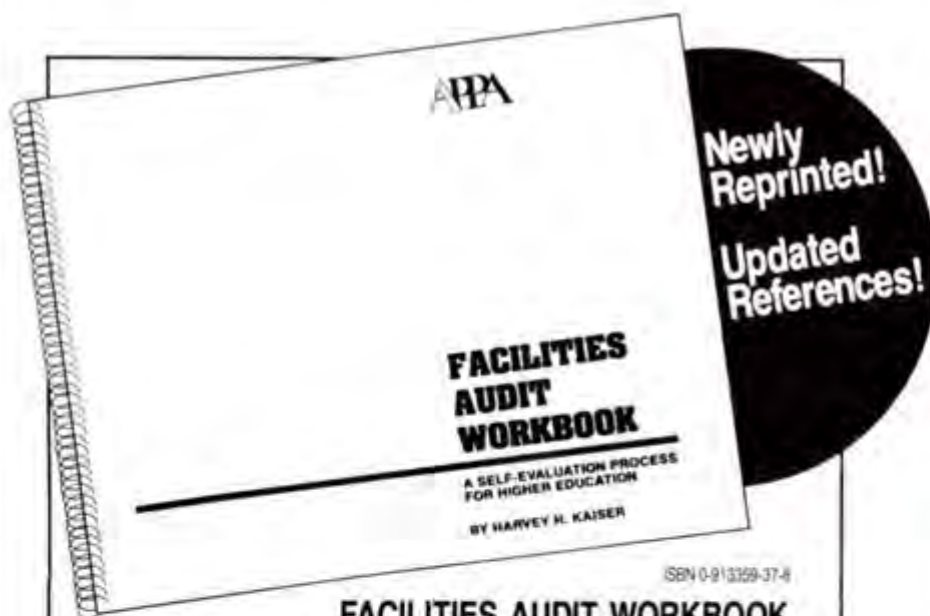
"I got out of [the program] everything I expected and then some," says Hug, a physical plant professional for twenty-five years. "I have been able to apply some new tools in physical plant management. I came away with strategic planning tools that I've since put into place." Having attended other management development programs, Hug says that most programs have a product orientation rather than a service orientation. APPA's program is the first he has encountered that is geared to the service-oriented, higher education physical plant profession.

In addition, Hug says that he is always on the lookout for training programs for his directors. He requires his upper-level managers to attend the Institute for Facilities Management and will recommend adding the Executive Development Institute to the professional training programs of his directors.

Also looking to the Executive Development Institute as training for his managers is Charles E. Bailey, director of physical plant operations at the University of Minnesota. "Management training is important to physical plant," says Bailey, who has 1200 employees. He attended the second program to determine whether it would be appropriate in a training program he is developing. The verdict? Bailey expects the APPA Executive Development Institute to become part of the training program for his directors.

History of APPA's Executive Development Institute

APPA's Educational Programs Committee under the leadership of Bill Middleton, was instrumental in establishing the Executive Development Institute. The Institute is one of the initiatives of the new Higher Education Facilities Trust (HEFT), a permanent endowment that funds expanded educational programs for facilities managers. Commitment to



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the Institute was so strong that the first one in August 1987 was conducted just one month after the announcement of HEFT—in other words, without an endowment and requiring only a modest amount of money for development.

The idea for an executive level program evolved when graduates of the Institute for Facilities Management expressed the need for more advanced management training opportunities. Various universities already offered programs in executive development and training; therefore, APPA's Educational Programs Committee decided to use an existing program, tailored to members' needs, rather than develop a new one. APPA solicited Requests for Proposals (RFPs) from sixty universities that offered MBA-level executive development programs; eighteen RFPs were submitted for consideration. An education subcommittee evaluated the RFPs and selected the University of Notre Dame's College of Business Administration because of the quality of the faculty, the central location that was convenient to most members, the availability of a spring or summer program that did not conflict with the Institute for Facilities Management, and the ability to tailor the program to the needs of physical plant.

APPA's Associate Vice President Wayne Leroy expects the Executive Development Institute to continue and evolve as long as the need exists. Explaining APPA's commitment to executive development, Leroy says, "Physical plant managers get a good foundation by attending the Institute for Facilities Management; the Executive Development Institute then focuses on training for top-level management."

Curriculum

The curriculum of the Executive Development Institute is designed for upper management and includes accounting and finance, strategic planning, marketing of services, creativity and innovation in organizations, decision making, leadership and motivation, and organizational culture.

The accounting and finance ses-

"A very good program."

"All instructors were very dynamic."

The entire program was excellent. Any shortcomings were the lack of time and my inability to absorb everything covered. Thank you for a terrific experience!"



sions address techniques to evaluate capital projects, coverage of payback, net present value, discounted rate of return, depreciation rules mandated for not-for-profit organizations, and the role of goals and objectives for

long-range budgeting.

In the strategic planning session, participants develop a facilities management plan. To achieve the plan, the session includes an assessment of the physical plant organization, analysis of success factors and trends in facilities management, and determination of the "business" of physical plant—relationships between facilities managers and their customers.

Coverage of financial and strategic planning matters is unquestionably valuable to facilities managers. What might not seem as obvious to participants, however, is the inclusion of sessions on marketing and public relations. Michael Etzel, the marketing instructor, explains that because physical plant is a service organization, the manner in which that service is provided and how the department is perceived by the campus community affects every aspect of department functioning.

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According to John P. Thurin, adjunct professor at Notre Dame who conducted a public relations session at the second Institute, physical plant management plays a key role in shaping effective public relations, perhaps to the point of dramatically changing department operations. He explains that making the most out of good situations and achieving positive outcomes from negative situations can only help relations between the campus community and the physical plant department.

To tie all of the program information together, most of the Executive Development Institute is devoted to the human resources element of physical plant. Anita Zimmerman, Executive Development Institute faculty member and visiting associate professor at Notre Dame, conducts sessions on leadership and motivation, organizational culture, and problem solving. A key element in her sessions is that participants are given personality profiles to learn their own style of interaction and motivation and that of others.

Zimmerman believes that leadership and motivation training enables participants to discuss, in a common language, human relations problems that plague their lives. By acknowledging their feelings, participants feel less isolated as they discover that others have similar problems. They then discuss applications to specific problems. The result? Stress and the amount of time devoted to these problems are reduced, thereby increasing productivity.

"Most problems are people problems," Zimmerman says. Leadership and motivation training "raises participants' odds in achieving successful interaction with coworkers." It is the "glue that bonds all of the [Institute program] information together."

The Future of the Executive Development Institute

Phil Rector envisions evolution of the program and hopes that APPA will use the same faculty each year in order that they become more familiar with physical plant needs. He would like to see the program evolve so that

senior managers will be encouraged to return every couple of years, perhaps to an updated program with different topics or a different approach.

Bill Middleton says that APPA's Executive Development Institute is "a program that has the earmarks of being a continuing, successful program." His hope is that more funding will be made available to the Institute, thereby lowering costs and making the program available to more facilities managers.

Emphasizing Notre Dame's commitment to APPA, Todd M. Bemberger, associate director of the Executive Programs Division, College of Business Administration at the university says, "Our goal is to get better, to make the program grow."

The next APPA Executive Development Institute for Facilities Managers will be held April 9-14, 1989. Class size is limited so be sure to sign up early. For more information call APPA's Educational Programs Department at 703/684-1446. Also watch for more details in upcoming issues of *APPA Newsletter*. ■

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The 1988 Olympic Winter Games: The University of Calgary Involvement

by William S. Mutch

In the fall of 1981 in Baden, West Germany, the city of Calgary was chosen as the site of the XV Winter Olympics. After three previously unsuccessful attempts to become host this event, Calgary became the first Canadian city to host the Winter Games. The entire community was excited about the prospect although the event was more than six years away.

The University of Calgary was chosen as the site of the Athletes' Village, the speed skating events, and the opening and closing ceremonies. This choice was no doubt influenced by the presence on the organizing committee of the University of Calgary's dean of physical education, Dr. Roger Jackson, who is also president of the Canadian Olympic Association and a member of the International Olympic Committee.

The additional facilities required for the Games, together with other planned additional buildings, would involve the university's physical plant department in its greatest-ever expansion of facilities. The total university capital expenditures over the period 1982 to 1987 were in the region

of \$300 million—about two-thirds of it for new buildings. More than \$100 million was earmarked for Olympic-related facilities.

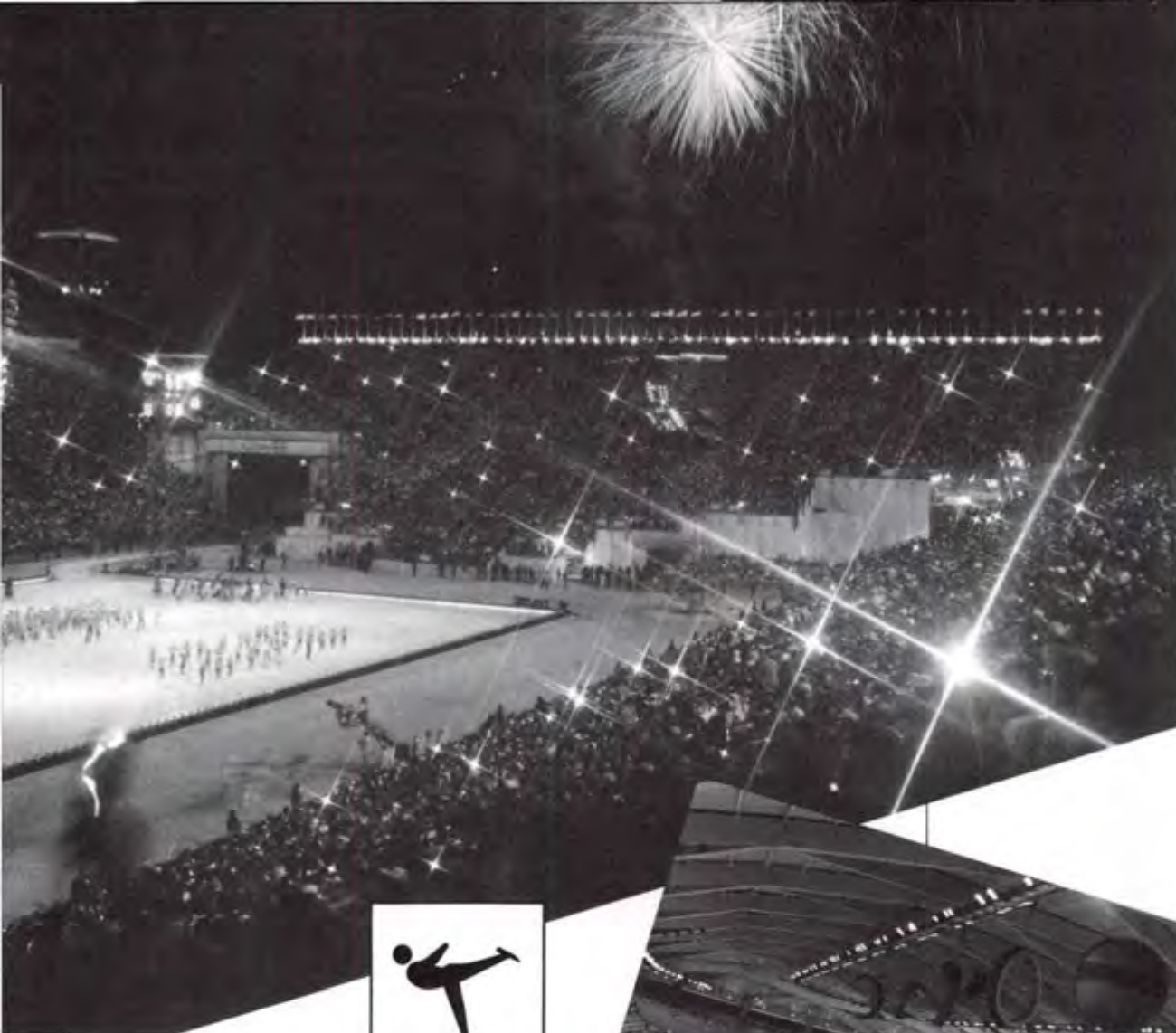
Because of the vast building program required, the department was reorganized. A new department of campus development was created to be responsible for all new construction, planning, and design of additional facilities together with the renovation, alteration, and upgrading of existing facilities. Other physical plant activities were under a separate department of buildings and grounds. Both department directors reported to the same vice president and maintained an extremely close working relationship.

Long before the Calgary Olympic Development Association began to assemble its Olympic bid, the University of Calgary's administration had drawn up a shopping list of needed improvements and facilities. The list included a major expansion to the physical education building, an expansion to the student center, additional housing, and a winter sports complex. When Calgary won the right to host the 1988 Games, the possibility



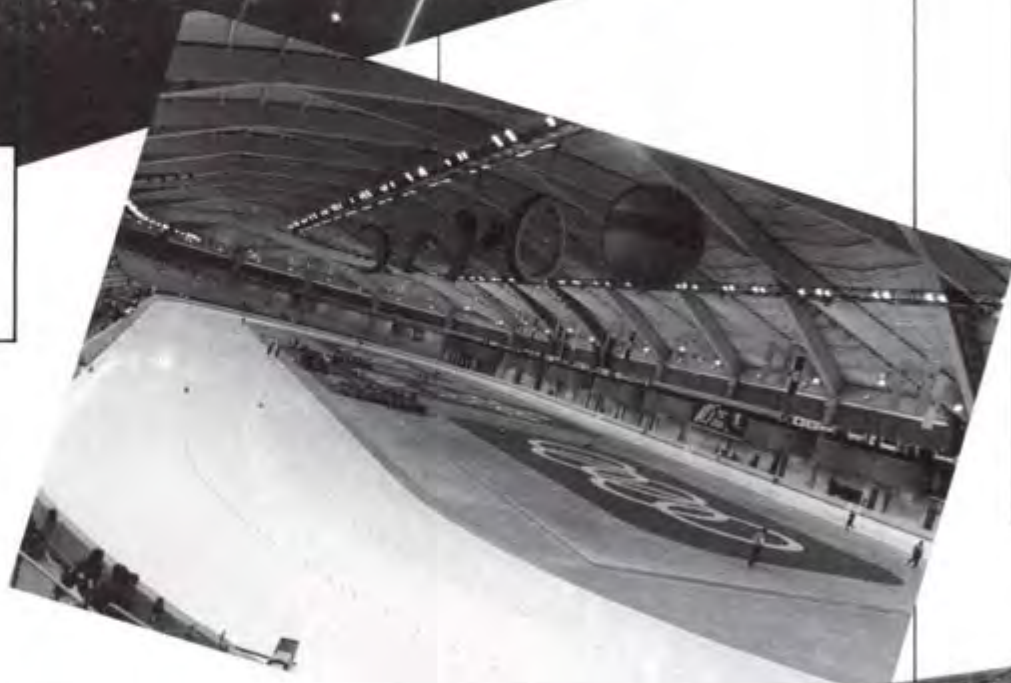
Bill Mutch is APPA's treasurer and is the financial officer, buildings and grounds and campus development at the University of Calgary.

The main Olympic flame which burned during the games and a simulated tepee which was raised during the opening and closing ceremonies at the University McMahon stadium.



Closing ceremonies. Temporary seats under the fireworks held 15,000 people. Note the flags of the fifty-seven participating nations.

Inside the Olympic oval just prior to an event.



Underneath the main section of temporary seating showing the complexity, and a good portion of the 125 miles of steel scaffolding used.



arose to complete all of the projects, which we did.

The university, in the six years preceding the Games, was the most active construction site in Calgary with nine major projects completed. Five of these projects were Olympic-related and were as follows:

	Approximate Cost (Cdn \$)	Gross Building Area Added
Olympic Oval	\$40 million	26,176 m ²
Physical Education Expansion	\$28 million	22,500 m ²
Olympus and Glacier Halls	\$12 million	14,650 m ²
McMahon Stadium Expansion/Improvements	\$17 million	4,476 m ²
Athletes' Village and Related Projects	\$11 million	

All of these projects were completed within time and budget deadlines. Funds for these various projects were provided by the federal government, the provincial government, OCO '88, and the university.

OLYMPIC OVAL

Although this facility was constructed primarily for speed skating events, the Olympic Oval is a multi-functional field house. In winter it includes a 400-meter speed skating track with hockey or figure skating on two Olympic-size ice surfaces. In summer it includes artificial turf and facilities for football, soccer, lacrosse, field hockey, tennis, and track and field events. Electrical conduits cast into the floors allow on-the-spot measurement of athletes' vital signals with direct transmission to the university sports medicine computer terminals.

The support spaces on either side of the Oval contain locker rooms, classrooms, judges' and officials' spaces, Zamboni rooms, turf storage, ice-making equipment, and mechanical rooms. It has a long-span roof structure with an interesting system of segmental precast concrete arches.

The Olympic Oval is one of the finest speed skating facilities in the world. Speed skaters from around the world broke all nine Olympic records and eight of ten world records there.

APPA members attending the Rocky Mountain Regional Conference in September this year will have the opportunity to tour this magnificent facility as well as talk to the engineers who designed its unique features.

Funding for this facility came from the Canadian government.

PHYSICAL EDUCATION EXPANSION

This building, linked to the Olympic Oval and the original physical education building, was described by one writer as "a glistening jewel" and by another as "comparable to a Mercedes Benz." Locally it has been labeled "Rog Mahal" or "the house that Jack(son) built" in deference to the involvement of Dr. Roger Jackson, the dean of the physical education faculty.

Special features of this three-story addition include:

- human performance research laboratories considered to be the most advanced sports science facilities in North America, perhaps in the world;
- a sports medicine clinic with twelve examining rooms, an X-ray facility, physiotherapy facilities, and

lapping, casting, and rehabilitation areas;

- a fitness center with a six-lane, 200-meter, high-performance running track;
- six gymnasia including one for basketball and volleyball with retractable seating that can accommodate up to 4,000 spectators;
- seventeen international squash and racquetball courts;
- an outdoor pursuits area with an indoor climbing wall sixteen meters long, five meters wide, and twelve meters high.

This building, which was funded by the provincial government (Advanced Education), was part of the Athletes' Village during the Olympics and will continue to be used as a training center for Canadian and other athletes from around the world.

OLYMPUS AND GLACIER HALLS

These two three-story apartment-style residence buildings formed part of the Athletes' Village and were funded by the provincial government (Olympic Secretariat). Because the source of funding was not the normal mortgage-type funding, and because of the added rentable space, attractive rents will be available to all students whose rents normally go into the mortgage pool for all residences.

McMAHON STADIUM

The site of the opening and closing ceremonies, temporary and permanent changes were made to this facility to accommodate the Olympic ceremonies as well as future use. Among the changes were:

- replacement of the artificial turf;
- installation of a press box elevator;
- construction of the Olympic Volunteer Center;
- upgrading of the sound system;
- addition of permanent seating;
- improvement of the signage;
- erecting and dismantling of temporary seating;

The funding of these changes (at approximately \$17 million) was shared almost equally by the provincial government (Olympic Secretariat) and OCO '88, the Games organizing



committee. Two of the changes in the stadium deserve some further elaboration.

Olympic Volunteer Center

This is a two-story facility with the lower level containing office and meeting room space and an upper level with kitchen, dining room, and lounge-type space. It was built as an administration and training center for the Games' 10,000 volunteers. It has recently been turned over to the university and will house some university department administrative offices. It will also be used for special events, small conferences, and meetings. The professional football club will also use it during home games as a socializing area for the Red and White Club, a supporters group.

Temporary Seating

This was a fascinating project although it did not carry as large a price tag as some of the others described.

McMahon Stadium, the scene of the opening and closing ceremonies, has permanent seating for 37,000. Initial-

ly we planned to add 13,000 temporary seats to increase the capacity to 50,000. The demand for tickets for the opening and closing ceremonies was so great that the contractor, Anthes Equipment Ltd., suggested that the number of temporary seats could be increased to accommodate 60,000. Therefore, temporary seating to accommodate 23,000 had to be erected prior to the Games and dismantled after the Games. This was accomplished using a unique Canadian-developed scaffolding technique known as Anthes Sure Lock Modular Grandstand. The concept was pioneered at the Alberta Summer Games at Fort MacMurray in 1984 and developed at various large sporting events throughout North America. The contractor's previous experience enabled the work to be carried out within extremely tight time limits.

Other complications were that the temporary grandstands had to be built above existing buildings and large tunnels had to be left to allow access to the field by athletes and

other processions. Both these problems were overcome by using a modular truss system and "bridging" the buildings and openings with the stands built above. The large grandstand rose to 100 feet and required heavy duty shoring.

When completed, the temporary grandstand practically duplicated the permanent seating in design and included aisles, exits, internal walkways, stairways, and cross platforms for lateral access, all designed to meet building and fire codes. A special platform, raised a meter above the last row of seats, formed a walkway where the flags of the fifty-seven participating nations provided a dramatic backdrop to the ceremonies. Television cameras were also stationed on this platform. This was believed to be



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the largest temporary grandstand ever built; the company installed fifty pre-assembled 72-foot-long tresses, over 150,000 pieces of galvanized steel tube, screw jacks, ledgers, and connectors accumulating to 125 miles of steel scaffolding. It took nine rail cars and more than thirty truck loads to deliver the materials to the stadium. The project started with a crew of fifteen and expanded to fifty.

The temporary seating was just part of the transformation of the university's McMahon Stadium. The entire artificial turf was covered with a blanket of white sand in case there was no snow for the ceremonies, which there wasn't. An ice rink was installed in the center of the field with its own mini ice plant. A platform was erected to house the Olympic torch which had its own elevating mechanism to raise it above the platform after it was lit during the opening ceremonies; it was lowered when it was extinguished during the closing ceremonies. A spectacular backdrop to the Olympic flame was also constructed. All of the temporary installations have now been removed and the artificial turf appears to have survived the ordeal.

Relandscaping some of the areas damaged by construction of the temporary grandstand is now being done, and the stadium should be back in operation for the upcoming football season.

Athletes' Village and Related Projects

A total of \$11 million was budgeted for these, with \$7.5 million provided by OCO '88 and \$3.5 million from various university sources.

A new university entrance road loop was constructed in addition to other minor road modifications. Also, a flag display welcoming area, security fencing, surveillance equipment, and special lighting were constructed.

The main dining center, the hub of food services for the campus, also served that function for the Athletes' Village. This building was the scene of upgrading activity to meet the need to feed up to 2,000 athletes. In this build-

The finished temporary seating.



Temporary seating showing the special trusses used to span the buildings and to build tunnels to provide access for parading athletes and floats.



Close up of the versatile "Anthes Surelock" rosette connector.





ing, new loading dock/shipping and receiving facilities were built. The kitchen was enlarged, reequipped, and generally upgraded. The main dining areas were given a complete overhaul, new beverage serving counters were built, and the sound system was improved. New multi-purpose common rooms, a convenience store, video arcade, and dry cleaning area were created for the use of the athletes. The university was required to provide only a fraction of the funds needed for the improvements in this area.

Two buildings of our residential complex are more than twenty-five years old and, although they have been well maintained, were in need of some upgrading. These buildings had the windows replaced, insulation enhanced, and were finished by recladding the entire exterior. New furnishings and lockers were purchased. Spot redecoration and furniture repair was done. Offices, storage rooms, and newly equipped laundry facilities were also built.

The original physical education building was the scene of the biggest transformation, much of it temporary. At the time of this writing a great deal of the temporary changes have been restored to their original function.

Three gymnasias, a dance studio, a classroom, lounge space, and a couple of offices underwent a metamorphosis, emerging as the main entrance to the Athletes' Village, a security clearance area, a waiting lounge for drivers, an information and accreditation zone, and an ABC interview studio. A further development of these same gymnasias became a shopping mall containing a souvenir/book/snack store, a bank, an American Express office, a photo studio, a telephone/telex center, City of Calgary and Province Alberta information centers, an arts and crafts store, and a hair salon.

More development created an administration area for all of the Olympic committees and the Village mayor. A food concession for volun-

teers working in the Village and a chapel staffed by ministers of several religious faiths were among the changes made. A video viewing room with sixteen screens for telecasting live all of the Olympic events was created. Attached to the Physical Education Building, from which its utilities were supplied, was a dental trailer with six chairs. Our campus development group performed miracles in this building and are now in the process of restoring it to its original state. Only two offices and the food concession will be retained as they were in the Athletes' Village.

This was an exciting, vibrant place to be. One of the more colorful spaces was the administration area which, as each nation arrived and was welcomed by the Village mayor, flag was placed high on the gymnasium wall until all fifty-seven flags flew there.

APPA member Ian Duncan, the director of campus development, stated, "I've had great satisfaction from seeing the buildings built on time and within budget. We were working towards a tremendous event, and there were deadlines which simply couldn't be missed. The success we've had in completing the Olympic projects is the result of many people working very hard. We've had an excellent relationship with the Board of Governors, and all of the design and contracting firms have been very competent. The grounds department performed miracles last summer creating new landscaping as well."

BUILDING COMMISSIONING

While much of the activity discussed in the earlier pages involved the staff of campus development, there was a need for involvement of the maintenance department which was, after all, going to operate and maintain the newly constructed buildings.

With the vast building program being carried out there was a need to augment temporarily the engineering in-house staff. We decided to pursue



the relatively new concept of building commissioning. A general call for proposals was made to which fourteen firms responded and from which a mechanical engineering company was selected. The responsibilities of the commissioning engineer was to oversee the electrical and mechanical engineers and contractors.

The commissioning engineer was required to review the drawings and specifications, attend job site meetings, inspect the work, and check the air and water balance reports. He was also to review the maintenance and operating manuals and conduct seminars with the maintenance department staff. His reports were regarded as further assurance that the university was receiving adequate value for its investment. This process started with the Olympic Oval and was subsequently extended to include all of the major projects.

BUILDINGS AND GROUNDS

The department of buildings and grounds at the University of Calgary has the responsibility and authority for the provision, operation, and maintenance of the university's physical environment and associated services.

Specifically, buildings and grounds administers the operations of facilities management, caretaking (custodial), utilities, central heating and cooling plant, communications, security, motor pool, maintenance, grounds, and safety office.

Planning for the Olympics at the executive level began more than two years before the date of the Games. The director was heavily involved in planning the new facilities, the commissioning of those facilities, and ultimately their operation and maintenance. All building and grounds departments were involved in one way or another. Meetings with OCO '88 representatives, the Calgary Police Service, and university personnel were held as required for many months prior to the establishment of regular information exchange meet-

(cont. on p. 48)

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(\$30 of membership dues pays for the APPA subscription.)



Olympics (cont. from p. 46)

ings and final planning meetings during the month of January 1988.

The Athletes' Village encompassed the seven residential complexes, the

dining center, physical education, and physical education expansion. Those, together with the Olympic Oval and a few temporary trailers were the Olympic buildings and as such received special attention. They were all buildings which normally received services from buildings and grounds, but there was a greater urgency during the Games because of the high profile that the Athletes' Village and the Olympic Oval received.

As Gordon Morrison, another APPA member and director of buildings and grounds, said, "From the buildings and grounds perspective, the Village operation was an unqualified success. The university's stature was much enhanced. All those who worked so diligently can take pride in the great accomplishment."

The individual departments were involved in varying levels of activity. Following are a few of the highlights:

Facilities Management

This department provides the university with services in furniture acquisitions, storage, repairs, and the moving of furniture and equipment throughout the campus. The facilities management group was assigned the task of carrying out a "shipping and receiving" function for the Village. The hours of operation meant that they had to operate two shifts instead of the normal one and they incurred a good deal of overtime.

Their daily activities included:

1. Set up OCO-related areas on the campus and received supplies and equipment.
2. Received and delivered goods needing security clearance. This required the coordination of security volunteers assigned to the area and special police services.
3. Provided an initial inspection/direction service to drivers making deliveries through the main security entrance to the Village.
4. Provided assistance for the move in and move out of the athletic teams in the residence area.
5. Provided pickup/delivery of all Canada Post items from the Village.
6. Received and delivered statistical data and tapes from the various venues to the National Olympic Committee Center for review by the teams.
7. Received and arranged courier pick up of OCO-related materials sites and offices.
8. Handled the transfer of Royal Bank pickup and deliveries after hours.
9. Received and shipped equipment and supplies for materials management.
10. Assisted the entertainment committee in the setup and take-down of

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athlete related concerts in the Jack Simpson Gym.

11. Provided continuity of the regular shipping services.

12. Maintained paperwork to track deliveries.

13. Assisted in finding lost or misdirected luggage and equipment.

Delays in students moving out of the residence halls left insufficient time to prepare residences for the move-in of the athletes. The Village began full operation two weeks before originally scheduled. Emergency plans involving large crews of movers had to be enacted. A similar shortness of time accompanied the move-out process. Both move-in and move-out problems increased costs considerably.

As manager Garry Hall says, "Facilities management took a flexible position in dealing with our duties and the challenges as they arose. This greatly expanded the job. Close bonds were forged with OCO '88 and other university staff. There was an absence of negativism and staff all enjoyed this once-in-a-lifetime opportunity to develop new friendships and relationships with people from other parts of the world."

Caretaking (Custodial)

The caretaking department provides cleaning, sanitization, and waste removal services to all university facilities. Elevated levels of service were provided for the period during which the teams of athletes occupied the Village.

Preparation began in the fall of 1987 with the creation of two supplemental crews to deal with unique Olympic requirement. Requirements for supplies and equipment were assessed by mid-December 1987. The equipment underwent thorough preventive maintenance. Equipment and supplies were stored in the area prior to the tight security procedures in order to avoid delays.

Supervisors' shifts were deliberately overlapped to assure good communication from one shift to the next. Staff were assigned six hours of specified duties and one-and-a-half hours were fairly flexible to deal with unusual occurrences. Few problems

The entrance to the Olympic oval (speed skating) showing a mini Olympic flame and one of the several works of art on campus, a metal sculpture entitled "Spire". Note the brown grass and the absence of snow



were encountered. Waste removal proved to be a matter of considerable concern as quantities were much greater than expected. The residences and dining center generated four times as much as normal, while the Olympic Oval and physical education complexes generated twice as normal. Fortunately, our waste removal contractors were prepared to deal with the increased volume.

Central Heating and Cooling Plant

The development of the campus with the additional buildings necessitated an upgrading of the building management system's central processing unit. An upgrading of the water intake at the Bow River pumping station was undertaken in October 1987 to improve the reliability of the river as a source of condensing water. Water softeners and mixed bed demineralizers were installed in the central plant to provide demineralized water, and booster pumps were installed in the chilled water distribution system.

Two transformers were replaced in the plant. These transformers were placed on pads outside as a means of ensuring the continuance of power in

the operation of the plant. Switchgear was upgraded. Electrical equipment that feeds power to the physical education complexes was upgraded and a larger emergency generator was obtained. All of these things were done in order to ensure operational efficiency and reliability.

Communications

This department was heavily involved in the planning, provisioning, operation, maintenance, and repair of telecommunications facilities for the Games. Several members of the staff first became involved two years prior to the Games when OCO '88 made its first appeal for technical planning expertise. Subsequently, nine of the twelve staff became volunteers. Staff played dual roles as volunteers and as employees. This was an excellent arrangement and posed no difficulties.

The department acted as on-site consultants for OCO '88, supervising and testing the work performed by outside contractors. During the Games several staff provided administrative and technical support related to telephone additions, moves, changes, trouble calls, and repairs. The university obtained some of the

cable that was installed either for a share of the cost or for no cost.

The manager of the communications department, APPA member Mal Reader, states, "The biggest benefit was the experience itself. All who helped plan, implement, operate, and manage the telecommunications facilities for the 1988 Olympic Winter Games gained enormously. No technical or managerial courses, seminars, or conferences could ever duplicate the experience."

Maintenance

Planning for additional and special services, extra staff, and specialty contractors for normal and emergency situations was done several months in advance. An intensive preventive maintenance program was carried out prior to the occupancy of the Village by the athletes.

To provide immediate response to mechanical, electrical, electronic, and structural problems a 24-hour labor/trades force was established. Expand-

ed phone/two-way radio/pager facilities were installed. A special phone line was set up which enabled the Village manager to make service requests through one number, answered on a 24-hour basis. The appropriate tradesperson/supervisor within the Village was then contacted by radio and dispatched to the area involved.

We established a depot right in the Village and ensured that it was stocked in advance with supplies and equipment. Workers also worked extra shifts to cover periods not normally covered, such as evenings and weekends. Arrangements were made with contractors to be available on an as-needed basis to assist with emergencies. No major emergency arose.

Safety Office

This department established an emergency evacuation plan in the Athletes' Village. This plan was to minimize the possibility of personal injury or the exposure of occupants to

any hazards, and to minimize disruption in case of false fire alarms.

The plans were modifications of the existing university building emergency ward program. A position of warden coordinator was established. The Village was divided into three major areas: residential, dining center, and physical education complex. Each of the areas had a senior warden who was responsible for recruiting necessary block wardens for their areas.

Procedures were developed by the university safety office committee in consultation with the senior wardens. Operating manuals were written and sent to the city of Calgary Fire Department and the OCO '88 village disaster planning group, with whom a number of meetings were held.

Training sessions were held on the fire alarm control panels and the use of voice communication systems. Fire warden telephones were installed in various locations. Seventeen two-way radios and three pagers were acquired for use by the wardens. The radios

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operated on the normal university radio frequency and one other frequency established for the emergency warden system.

A base station was located in the OCO '88 security command center to monitor these frequencies and to establish radio contact with the warden coordinator on duty if necessary. Finally, daily routines were established to ensure 24-hour coverage and an office was located next to the OCO '88 security command center. Evacuation procedures were printed and posted in various locations throughout the Village.

No major incidents occurred during the operation of the Athletes' Village.

Perhaps the feelings of the buildings and grounds staff regarding their involvement in the Games can be summed up by the comments of the grounds department manager, Rocky Mountain region APPA member Walter Retzer, and his staff. "We welcomed the challenge and now that it's all over we can honestly say it was well worth the effort. Let's do it again sometime."

ADJUSTMENTS

How did we deal with staff and students who were either volunteers or who wished to attend the Games?

The university operated as usual, except within the Athletes' Village, but there were no classes during the two weeks of the Games. These two weeks were declared reading weeks (study periods). Classes commenced in the winter term a week early and extended for a week at the end of the term.

Staff who were permitted by their supervisors to be volunteers were paid for up to ten days of volunteer work. Those staff who were not volunteers were entitled to five days paid leave to allow them to attend the events which took place during their normal working hours. Staff, who because of the nature of their work could not be volunteers or take the leave to attend events, were allowed to defer leave until a later date.

It was exciting for the department, the university, and the city of Calgary to be involved in the 1988 Winter Olympic Games. ■

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Resource Management

A Parking Condominium

Would you pay several thousand dollars for a parking space? You might if you have season tickets to your school's football games. The Crimson Square parking condominium currently under construction at the University of Alabama will contain parking spaces priced at \$9,500 each. The spaces are expected to be purchased by alumni and others who want easy access to football games and other events.

Crimson Square, located only two blocks from Bryant-Denny Stadium, will contain twenty-seven standard car-sized parking spaces. There is no space for vans yet; however, the lot may be expanded. Also, there will be an enclosed area for socializing. The entire area will be enclosed by a decorative wrought-iron fence.

Several other universities have built or plan to build similar structures. Crimson Square is expected to open in time for the fall football season.

Energy Savings

Arizona State University, with the cooperation of the Arizona Department of Transportation, will convert about 100 maintenance vehicles, about one quarter of the university's fleet, to run on compressed natural gas. A \$298,000 Arizona Department of Transportation grant will be used to install a natural gas fueling station at ASU and to equip vehicles with a switch that will change vehicle fuel consumption from gasoline to natural gas. Natural gas, at 60 cents per gallon, is considerably less expensive than the 80 to 85 cents per gallon the university pays for gasoline. Natural gas burns cleaner than gasoline and provides the same mileage. This project will allow ASU to contribute to the move toward use of alternative fuels and help clean up the environment.

Computer-Aided Design

The physical plant department at the University of Idaho in Moscow has acquired and is now using a computer-aided design system. The system allows manipulation of campus facilities on the computer screen in a matter of minutes. The system also helps planners avoid problems and conflicts with utility routes by zooming into areas for close inspection, showing the placement of electrical and telephone lines inside utility tunnels.

Under the direction of physical plant director Ken Hall, hand-drawn one-inch to

Beth A. Rosenfeld

Resource Management is a regular feature of *Facilities Manager*. If your department has developed innovative programs or utilized unusual resources, please share them with us. Send a short description to Resource Management, FACILITIES MANAGER, 1446 Duke Street, Alexandria, VA 22314-3492.

forty-foot topographical maps were entered into the computer data base using AutoCAD software. Maps are placed on a digitizer and a mouse-like instrument, which translates map features into computer language, is moved over the map surfaces. The program assigns features to different layers using color codes. Although it takes as long to enter information into the computer as it does to draft maps by hand, the information never has to be entered again.

Michael George, an instructor at the colleges of engineering and architecture who helped enter information, commented on the potential for programs that check for conflicts and problems. "So far, the brain is still the best computer for that type of work. The program's benefit is in freeing the brain from dealing with the mechanics of drawing for more design consideration."

Earthquake Protection

The first university structure in California built with state money is about to receive earthquake proofing. South Hall, on the University of California's Berkeley campus, was completed in 1873 and has been considered dangerous during earthquakes, as is the case with many other brick buildings. To reinforce walls, technicians are drilling holes into them from top to bottom, filling the holes with steel, and bonding the steel to the brick with a poly-

ester and resin grout. The project is expected to cost \$3.8 million and will serve as a model for efforts to reinforce other brick buildings in the state.

Cogeneration Update

A \$66.5 million cogeneration facility has been completed at Stanford University. The facility will supply all of the university's steam, chilled water, and electricity, will provide emergency backup power to the Stanford Medical Center, and is expected to reduce energy costs at the university.

The plant is located on land leased by Stanford to Cardinal Cogen, the owners of the 49-megawatt power plant. The rent paid to the university by Cardinal Cogen, a joint venture of Kaiser Engineers and General Electric Company, will also help reduce energy costs.

Waste heat produced by the General Electric 39-megawatt MS6001 gas turbine-generator will make 160,000 pounds of steam per hour in a heat recovery steam generator. Part of this steam will be used in a GE steam turbine-generator to produce an additional 10 megawatts of electricity. The remaining steam will be sold to the university for the heating and cooling system. Electricity not used by the university will be sold to Pacific Gas and Electric Company.

Kaiser provided design, engineering, and construction services. Cardinal Cogen oversees day-to-day operations, including the procurement of fuel and the plant's integration with the university and Pacific Gas and Electric Company.

After fifteen years, the university may either renew its agreement to purchase steam and electricity from Cardinal Cogen, or may lease or buy the cogeneration facility.

Waste Disposal

Custodians suffer puncture wounds and cuts and are exposed to infectious diseases when laboratories and offices do not properly dispose of dangerous materials. The University of Washington's Custodial Services Division has developed a "Notice of Improper Disposal Practices" that alerts labs and offices of improper disposal of sharp objects and other dangerous materials. Custodians are permitted to leave the trash in the lab or office along with a notice if guidelines for proper waste disposal are not followed.

Guidelines require that breakable glass, plastic, and fluorescent tubes from campus offices and labs be rinsed of toxic, pyrophoric, and other corrosive materials,

be autoclaved if they are contaminated by blood or are otherwise potentially infectious, and be packaged in puncture-proof containers and secured with fiber tape. The university provides boxes and tape for these purposes.

Other reasons why trash might remain uncollected include: an LSA box used for non-radioactive waste; a radiation sign appearing on or in a waste container; a biohazard sign appearing on or in a waste container; blood or animal bedding or waste in regular waste, not double-bagged and sealed; dead animals or animal parts in regular waste; an unknown powder or liquid in waste container; and empty chemical bottles not rinsed clean and uncapped for collection. Safety awareness is encouraged to extend to hazardous materials accidentally dropped on floors that the custodial crew must clean up later.

Responsibility for enforcing this policy is delegated to Environmental Health and Safety who must inform generators of hazardous waste of proper packaging and disposal procedures, to university personnel who are required to follow these procedures, and to Custodial Management who must warn custodians of waste handling hazards and how to avoid them.

Affordable Faculty Housing

Several years ago, the University of California at Irvine was having trouble recruiting professors despite the promise of generous salaries and good working conditions. The high cost of housing in Orange County, particularly in the attractive Irvine and Newport Beach areas near the university, was making potential professors' career moves prohibitive. The university's solution? University Hills.

Built on a hillside next to the university's academic core, University Hills contains 72 condominiums, 68 townhouses, 108 standard single-family homes, 38 "premium" single family houses, and 13 "custom" houses, all priced below market. The area will eventually contain more than 1,000 homes.

To implement the project, the university started the Irvine Campus Housing Authority (ICHA), a nonprofit state public benefit corporation separate from the University of California's Board of Regents. ICHA leased the land from the university, developed the housing complex, and collects land rents and homeowner fees.

In return for the below-market purchase prices of homes in University Hills, ICHA imposes resale controls. Even though the homes are priced below market, they are competitive with Orange County homes in lot size and outdoor space, square footage,

and quality of design, materials, and appointments.

Ralph Martin of Richardson Nagy Martin, developer of the project, commenting on its success, said: "As corporations consider their employees' commuting problems and difficulties in finding affordable homes, more thoughtful management groups are weighing the possibility of participating in the development of housing. University Hills demonstrates how affordable housing can be created through the use of imaginative financial strategies."

Custodial Employee Handbook

The Ohio State University publishes a handbook for custodial employees entitled *Department of Physical Facilities, Division of Building Services Information Directory*. This fifty-page, easy-to-read typeset manual contains large graphic elements to separate and identify its twelve chapters. Useful information includes what a custodian

should do in case someone makes special requests and how to report and handle various situations such as fire, accidents, illness, maintenance problems, suspicious persons, vandalism, theft, or unusual items found during a work shift.

The first chapter, an introduction to department objectives, was written by James T. Murphy, director, and Kurt Smail and Nathaniel V. Taylor, assistant directors of building services. Another chapter contains organizational charts, including lists of buildings by district and number. The chapter on contract districts covers guidelines for personnel of custodial maintenance contractors. The directory also includes a campus map, emergency and information telephone numbers, policies and procedures, supplies and equipment, routine services, a sample employee work schedule, safety guidelines, and employee job-related information. ■

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Computer aided design/drawing (CADD) programs owe their popularity, even their existence, to increased productivity resulting from increased efficiency. They're a perfect example of matching the tool to the task.

Industry estimates reveal that almost three out of four architectural and engineering firms (even one-person offices) presently use a CADD system or will shortly. They've adopted it to trim costs, increase productivity and, in the case of accounting cost centers, remain competitive. Other advantages include reduced storage needs and filing costs as well as reaping the intangible rewards of the "gee whiz" factor. This latter results from clients impressed with your effortless mastery of a complex technology.

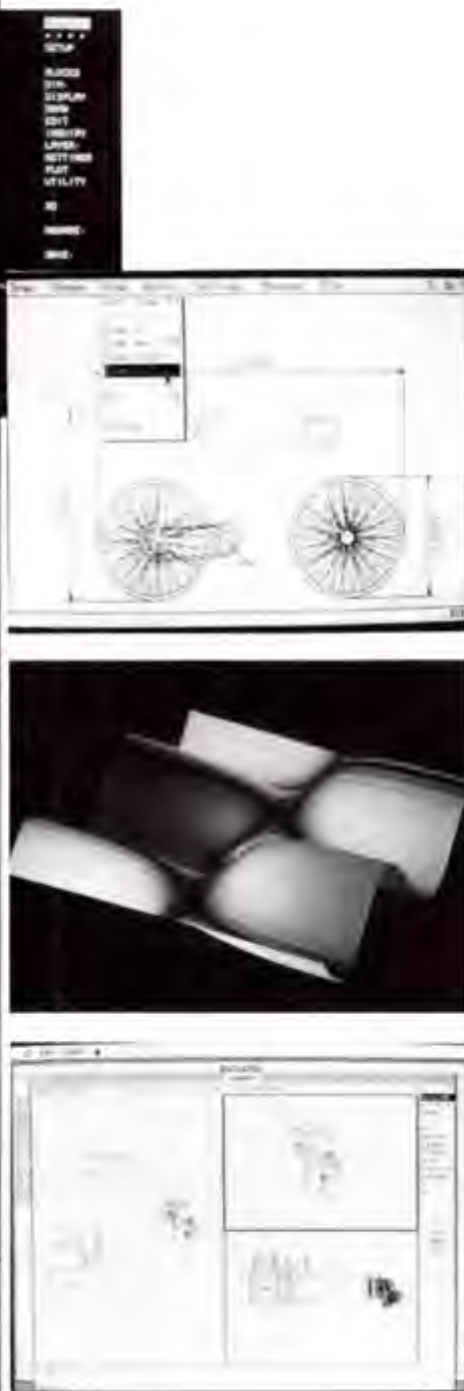
Should your office invest in a CADD system? The answer depends on the amount and type of drafting it does. The more repetitive the work, the more time saved—up to as much as 50 percent. By repetitive, I mean not only the same details repeated on uniform floor plans or elevations but also the same kind of details drawn for similar jobs in different buildings.

There are immediate advantages in

Howard Millman is assistant director of facilities at Columbia University's Lamont Doherty Geological Observatory in Palisades, New York, and Nevis Nuclear Laboratory in Irvington, New York. He is also a freelance technical writer and frequent contributor to several national computer magazines.

Data Base Update

Howard Millman



using CADD during a project's initial design stage, especially for drawings with complex details. Why? Because many CADD programs include "libraries" containing hundreds of frequently used architectural, engineering, and construction symbols. Skilled users eventually create their own libraries of task specific symbols or purchase them ready-made from third-party vendors. More on this later.

With CADD, revising drawings is not what it used to be. It used to be boring. Reducing the tedium of repetitive revisions and drafting enhances the user's frame of mind and allows more time to be spent on the creative aspects of designing instead of the mechanical. Comparing CADD with a manual system is like comparing the SST to a skateboard.

Take note, however. When implementing this state of the art technology in an otherwise traditional office, consider instituting it one step at a time. Introduce innovative technology gradually; doing otherwise is inviting resistance to change.

Costs and Courses

What does this technology cost? Autodesk's AutoCAD, the standard-bearer of the industry, retails for \$2,800. Even though AutoCAD is shipped with a hefty reference manual and includes an extensive on-disk help file, formal training is required. Depending on the trainee's previous experience with computers, architectural drafting, and CADD programs, classroom time will range from six to forty-eight hours. Training is available through consultants, Autodesk's worldwide training centers, or at colleges. Costs vary from \$150 to \$1,000. After 100 hours of combined training and use the operator should be productive.

The one-time hardware costs are also formidable. AutoCAD realistically requires an AT or compatible computer with 640K RAM, a 20287 math coprocessor chip, hard disk, and a high resolution monochrome or color monitor. The math coprocessor is required to increase the program's response time. A similarly equipped "386" machine will further enhance the system's overall response time. A fast dot-matrix printer or, ideally, a plotter, is a necessity for obtaining hard copies.

The total hardware and software costs may reach \$20,000 for a first-rate system. On a local area network the overall initial cost is higher but the cost per station is reduced. In addition to desktop micros, AutoCAD also runs on Sun (UNIX), Apollo (AEGIS) and DEC (VMS) systems. An Apple Macintosh version (\$3,000) was released in May 1988.

This expense can be reduced if your office owns a computer system that can be expanded to handle the additional hardware.

From Paper to Printer

Commands and data are entered three

ways: via keyboard, mouse, or digitizer. The latter is the method of choice.

A digitizer is a tablet containing internal electronic circuitry that's activated by a mouselike "puck." The surface of the tablet holds overlays depicting numerous macros and commands. Moving the puck's inscribed crosshairs over the item and clicking one of its selection keys transports an image of that item onto the screen or executes a command. Digitizer tablets cost approximately \$1,000.

Drawings can be depicted in various scales. When a plan's view is in 1/4" scale, details drawn separately or clipped from a library at 1" scale are rescaled when inserted into the plan or elevation. Associated dimensions are likewise automatically adjusted.

Any component of a drawing can be expanded or condensed. Furthermore, details can be repeated (copied) as drawn, as can sections of plans or elevations.

AutoCAD's dexterity is best demonstrated by its drawing and editing features. Onscreen images can be relocated ("dragged"), expanded, extended, stretched, condensed, closed, scrolled, repeated, and/or rotated on multiple axes. With UNDO, changes can be peeled back one step at a time.

Users have their choice of drawing lines from point to point, in parallel, or at right angles. Arches, circles, and other curves are drawn with equal ease.

Drawings can be displayed in elevation, plan, three dimensions (both solid and wireframe), as well as isometric. AutoShade, an option, adds shading and color to 3D images, creating top-notch renderings.

What about text for including dimensions and notes? AutoCAD offers a choice of twenty fonts. Since AutoCAD draws text instead of writing it, large amounts of text should first be entered with a word processor and electronically pasted into the drawing. Text can be oriented horizontally or vertically. A bill can be extrapolated from the text for material and cost estimates.

Some number crunching is included by default. Area and perimeter (distance) measurements are computed for regular or irregular shapes by just moving the onscreen crosshairs into the enclosed area. Units are in metric or English measurements and are expressed in inches and feet, decimals, exponents, or a combination.

For payroll/chargeback accounting there's time-stamping and time-tracking features.

Since AutoCAD is the standard-bearer of mini- and micro-based CADD systems, there are hundreds of aftermarket support programs available. These include civil, electrical, structural, and mechanical engineering, landscaping, surveying, site planning, underground utilities, estimating, material takeoffs modules, menuing systems, symbol libraries, specifications, project management, and equation-solving programs. And that's just for starters.

Most add-ons are listed in Autodesk's \$5 *AutoCAD Applications Catalog*. It also contains a section of dedicated facility management software marketed by outside vendors.

Besides creating drawings for in-house use, the uses for AutoCAD stretch far beyond the office. For example, if two users have similar telecommunications capability, full-size drawings can be transmitted via high speed modem. Shop drawings can be E-mailed, reviewed, and "re-turned" the same day. Unlike FAX systems, there's no limit to sheet size and, because the transmission is digital, there's no deterioration in quality.

AutoCAD vs. AutoSketch

Fortunately, there's a way to share in some of a CADD system's advantages at a lower cost and commitment. AutoSketch is an entry level CADD program offered by Autodesk and contains many of the same features its big brother offers. Missing are the high-end features such as 3D, the programming language and menu customizing features, extensive symbol libraries, and comprehensive aftermarket support. Also, AutoSketch cannot access extended or expanded memory or use a hard disk for virtual storage.

On the plus side, AutoSketch can be learned in about two hours without out-

side training and it costs less than \$100. AutoSketch is upwardly compatible with AutoCAD in file format and commands, so users who later decide to trade up can consider AutoSketch as an introductory program to upgrade their archived drawings.

AutoCAD is a complex, versatile program. It has undergone numerous revisions incorporating the changes suggested by its more than 120,000 users. The latest, Release 9, offers an improved user interface featuring dialogue boxes as well as pull-down, pop-up, and icon menus. While AutoCAD makes every attempt to simplify and speed its assimilation and use, it nevertheless requires a commitment of capital, time, and talent. AutoCAD will deliver what it promises, providing your staff does its part.

There are those who may still feel this new technology will never supplant the time honored draftsman hunched over the drafting table. And then, there are those who know better.

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Campus Hazardous Waste

Hazardous Waste Management at Educational Institutions. Washington: National Association of College and University Business Officers (NACUBO), 1987. 101 pp. \$27 members, \$40 nonmembers, softcover.

This book is what NACUBO intended it to be—a source of the “majority of the information a business officer needs to gain an understanding of the hazardous waste problem” and a source for those institutions lacking resources and full-time environmental health and safety staff. NACUBO came through for the small college staff with this book. Indeed, as a guide for the small college it is excellent and should be read and retained by the business officer. Environmental health and safety officers at large institutions would find limited use for this book, however; chief administrators at such institutions would only find it a thorough summary of the problem.

Chapter one introduces the reader to hazardous material and waste. It presents methods for creating a management plan including setting objectives, analyzing the problem, implementing solutions, and communication. My personal feeling is that more attention could have been given to these topics and thus create a more useful guide for the creation of a management plan.

Chapter two discusses regulations pertaining to hazardous waste generation, treatment, storage, and disposal, and also offers definitions, rules, and time frames. State agencies and addresses are listed as well as EPA regional offices. This chapter is informative yet concise and answers several questions a business officer may have as to when waste is created, how waste is regulated, what action is required, and where the business officer can get advice.

The next chapter informs the reader that there is little Environmental Impairment Liability (EIL) insurance coverage available today (thanks to Bhopal and Love Canal), and clearly establishes that colleges and universities have high risks and exposures. While they generate less than one percent of the nation's hazardous waste, their exposure is more diverse than that of industry and thus requires sound risk management practices. An eleven-step approach is recommended to help reduce the results of what could be a catastrophic loss.

Chapters four, five, and six highlight important considerations in the location, collection, transportation, storage, treatment, disposal, and reduction of hazardous waste. These three chapters provide the information needed for effective risk reduction and clarify issues in the physical handling and control of hazardous materials and waste. They emphasize that proper control is critical, is a full-time job, and involves the health and safety of many people.

The Bookshelf

Chapter seven briefly discusses related issues such as leaking underground tanks, Right-to-Know, asbestos, PCBs, biohazardous waste, and radio-active waste.

The final chapter discusses trends leading to future considerations. The appendices are exceptional and will be useful to business officers at institutions that do not have an environmental health and safety officer on staff. Included are a sample management plan, procedure for audit, sample bid specification, training program, emergency contingency plan, and an inspection protocol for selecting a disposal/recovery facility.

Hazardous material and waste management is a critical issue today. It is in the media and must not be ignored. As the authors state, “The best time to begin a hazardous waste management program is now. It is likely that there will be fewer options in the future. It is unlikely that disposal services will get any cheaper. In any event, by starting now, you can develop a program without the added pressure of a regulatory agency, the news media or student groups scrutinizing your every move.”

Hazardous Waste Management at Educational Institutions is available from NACUBO, One Dupont Circle, Washington, DC 20036.

—Gary Kent

Assistant Director, Physical Plant
Buffalo State College
Buffalo, New York



The Responsive Manager

Management for Supervisors, by Paul Preston and Thomas W. Zimmerer. Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1983. 352 pp. \$29.67, hardcover.

Physical plant administrators, and especially supervisors who report to them, are often thought of as “the people in the middle.” Supervisors must be able to speak two languages—the language of management and the language of employees. *Management for Supervisors* is a good book that goes into great detail about a wide range of areas that can help supervisors effectively communicate with both

management and employees. Even though the book is not aimed entirely at university or college physical plant employees, it addresses everyday management responsibilities of typical plant supervisors.

Preston and Zimmerer do an excellent job in formatting the book. Each chapter begins with clearly stated objectives and concludes with guidelines for action, discussion questions, and cases from actual managerial situations. Readers may use these cases to make certain they have absorbed text concepts and to see how the concepts apply to on-the-job situations.

The book is divided into four major management functions: functions of

supervision, processes of supervision, personnel management, and challenges of supervision. The authors thoroughly address traditional functions used by managers to set and reach goals, achieve management planning, organize, direct, and control. Steps in the planning process are presented. Using the planning process reaps many benefits, including problem identification, alternative development, focus on the job's important elements, and team-work improvement.

Once the planning process is completed, suggestions are given to help convert plans into actions. The elements of control are described, as well as how standards can be used as an effective management tool. Applications of preliminary, concurrent, and feedback control are illustrated.

The authors describe in detail the steps needed to employ management by objectives (M.B.O.), one of the most used management methods. For M.B.O. to work, goals must be identified by both the superior and subordinate with the main areas of responsibility clearly stated for both.

There are many steps to the process of good supervision including problem solving and decision making. The authors present useful tips on how to gather and sort through problem-related information. Problems must be defined in concrete terms before they can be solved. Informa-

tion must be gathered and sorted in order that realistic alternatives be generated. Only then can a decision be rendered.

The supervision process also requires that managers have solid leadership and delegation skills. Various leadership styles are addressed including autocratic, consultative, democratic, free reign, manipulative, and expert. Even though there are many ways to develop leadership potential, there is no one best style to use in every situation, because of their complexity and different elements involved. A leader's style, the follower's disposition, and the characteristics of the situation affect leadership.

A motivating environment encourages employees to willingly work toward organizational goals; therefore, good supervisors must be good motivators. Supervisors are responsible for providing the climate and opportunities that motivate their employees and help them satisfy some dominant needs. The text deals with two useful approaches to motivation: Abraham Maslow's Hierarchy of Needs and Frederick Herzberg's Motivation Hygiene Theory.

The importance of good communication in the supervision process cannot be over-emphasized. The authors not only cover skills needed to facilitate communication but also skills needed to overcome

potential communication barriers that exist within the sender, message, and receiver.

Because supervisors deal directly with people, solid skills in personnel management are necessary. The involvement of leaders in staffing their departments help ensure a smooth running department. The chapter on staffing shows how supervisors can use the services of their personnel departments to gather and train a top-rate work team. Other sections discuss formulating job descriptions and specifications, recruitment practices, and methods for screening and appraising prospective employees.

Supervisors should not only play a role in staffing their departments but they should also be involved in department training as well. This involvement may be either direct or indirect depending upon organizational policy. Supervisors need to be aware of the various forms of on-the-job and off-the-job training available. Leaders must know the proper role to assume in the training program, as well as how to develop the program.

Along with involvement in staff training, performance evaluation and appraisal is an important responsibility for supervisors. Appraising employees' performance often includes difficult interpersonal communication issues especially with employ-

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ees who have not been achieving acceptable standards in their work. Supervisors must coach and counsel their employees. When bad news must be delivered, it should be done in a constructive manner that motivates employees to change their behavior. The authors present information to help the supervisors communicate with employees in a style that will lessen negative reactions. Better performance and improved productivity of employees should result.

Safety is another area in which supervisors must take an active personnel management role. Leaders must deal with the their employees' on-the-job safety and health. Not only will a well-developed and executed safety program lower accident rates, but it also can enhance employees' attitudes and confidence toward management.

The authors delve into an important area often overlooked—keeping order and maintaining discipline. Among many useful techniques and skills discussed are identifying problems before they become serious, developing a complaint handling system, and using positive discipline and directive and nondirective counseling.

Supervisors face many challenges including managing conflict. Conflict is not always negative or unproductive. If managed correctly, creative conflict can produce positive outcomes. Out of all the

strategies for handling conflict, the best way is to optimize or confront it with a problem-solving strategy. All parties must make a commitment to work toward discovering the solution to the problem.

Labor and management relations in a union shop can be challenging and complex. The book offers procedures to help supervisors construct action files of materials that deal with supervisor-union interactions. It is wise of supervisors to keep in touch with the plant's labor relations specialist on a regular basis.

Most supervisors wish that they had an extra hour or two in the day to complete their many tasks. One of supervisors' greatest and most important challenges can be managing time. Without proper management of time, supervision suffers. Leaders wishing to be successful must gain control of their time. Time must be carefully planned and time wasters must be eliminated. The authors give many timesaving tips to help supervisors invest time wisely, not just spend it.

Finally, to meet the future challenges of supervision, self-audit forms are included for supervisors to test themselves and analyze their supervisory skills.

Management for Supervisors is readable and set up in an orderly manner with clearly-outlined objectives. The seasoned administrator will find the book a good review of management principles and will

pick up some new and useful information. However, the audience that will glean the most from the book is "the people in the middle," subordinates of administrators who manage the plant's hourly employees. This book will help them to become bilingual, to learn to speak both the language of management and the language of employees.

Management for Supervisors is available from Prentice-Hall, Inc., Book Distribution Center, Route 59 at Brookhill Drive, West Nyack, NY 10995.

—Rick J. Beal

Project Engineer
Western Illinois University
Macomb, Illinois

Coping With Bureaucracy

The Empowered Manager: Positive Political Skills at Work, by Peter Block. San Francisco: Jossey-Bass, Inc., 1987, 204 pp. \$19.95, hardcover.

Staying positive in a bureaucracy is a challenge to everyone, according to the author of *The Empowered Manager*. He sees the "process of organizational politics as we know it (working) against people taking responsibility."

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antidotes to the malaise of bureaucracy. The author explores the choices between being entrepreneurial or bureaucratic, maintenance oriented or greatness oriented, cautious or courageous, and dependent or autonomous. He says that choosing to be entrepreneurial and positively political empowers us. He explains, "Empowerment is a state of mind as well as a result of position, policies, and practices."

We need to recognize that within organizational politics there are unwritten contracts based on self-interest between individuals. These contracts vary depending on the support that an individual perceives is available and on whether an individual focuses on career advancement or the values, purpose, and strategy of the organization.

Those interested in career advancement choose the safe course—advancement, high pay, minimal risk-taking, control at all costs, and implementing solutions to obvious problems rather than discovering new problems to solve. Those who are highly controlled understandably feel manipulated and lack energy and motivation. Individuals with entrepreneurial contracts, however, are more autonomous. They are their own

authorities and are responsible for their own survival, they express themselves and encourage expression by others, they make commitments and take responsibility for meeting those commitments, and most important, they believe that management is just.

The keys to empowerment are to enlist the support and involvement of the organization, create a vision of greatness, and confront and discourage passive behavior. The latter can be one of the most challenging aspects because those who choose a bureaucracy as a work place have selected security at the outset.

To explain dependency which perpetuates bureaucracy the author says "our fear that power will be used against us in a destructive way leads us to be indirect and manipulative." We must instead believe that the key to our survival is not fine political footwork, but the quality and integrity of our work. When this happens, autonomy replaces dependency and the entire organization experiences empowerment.

A large section of the book deals with recognizing and facing the realities of the organization. Techniques are suggested for creating the vision, building support for the vision by negotiating with both allies

and adversaries, balancing autonomy and dependence, continuing to act with courage, and enacting the vision. Although the author does not specifically deal with the bureaucracy that exists in higher education physical plant departments, his observations are general enough to be applicable to any organization.

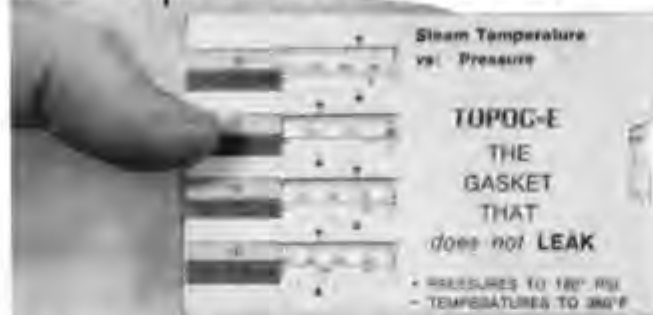
If you are satisfied with your facilities culture, feel that you are achieving your goals, and have a smooth-running and efficient organization, or are uncomfortable exploring the psychological aspects of personal relationships, this book is not for you. However, if you are a bit idealistic, would like to see your vision become reality, want to enlist the cooperation of your staff, and are willing to read a mildly humorous, conversational book, you will find ideas to achieve your goals in *The Empowered Manager*.

The Empowered Manager is available from Jossey-Bass, Inc., 433 California Street, Suite 1000, San Francisco, CA 94104-2091.

—Barbara Pluta

Manager, Design and Construction
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