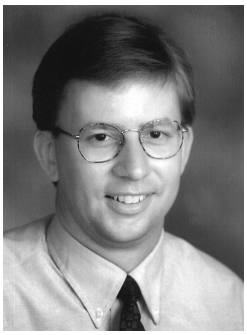
Summer 1999

President's Message



Charles Andersen

There is a law through the operation of which we reap that which we sow. When we select the rule of conduct by which we guide ourselves in our transactions with others, we will be fair and just, very likely, if we know that we are setting into motion, by that selection, a power that will run its course for better or worse in the lives of others, returning, finally, to help or to hinder us, according to this nature. "Whatsoever a man soweth that shall he also reap!"

It is our privilege, as leaders and as human beings to deal justly or unjustly with others, but, if you understand the law upon which the Golden Rule is based, we must know that our unjust dealings will "come home to roost." We cannot pervert or change the course of this law, but we can adapt ourselves to its nature and thereby use it as an irresistible power that will carry us to heights of achievement, which could not be attained without its aid. Hence, not alone is it advisable to "do unto others as you wish them to do unto you," but to avail yourself fully to the benefits of this universal law we must "think of others as you wish them to think of you."

"Sow a thought, reap an action. Sow an action reap a habit. Sow a habit, reap a character." It starts with how we think, not how we act.

It is with mixed emotions that I share with you that shortly after the National APPA conference, Paul Gundersen passed away. He was a good friend and a wonderful person and will be missed. Our prayers are with Beverly and the Salt Lake Community College extended family.

I also want to extend my appreciation to the Facilities Management Department at Yavapai College. They have been a wonderful group to work with and I will miss them. As many of you know, I have accepted a new position at Minnesota State University, Mankato. Even though this is a little outside of the Rocky Mountain Region, my heart will always reside there. I intend to stay a member so that I can continue to hear about the great things that are happening in RMA. Even if RMA is the smallest region in membership, it is the greatest region in leadership.

Again, I encourage you to attend the Annual Conference in Albuquerque, New Mexico, October 6-10. I know Harvey and Team have worked long and diligently to organize and host a wonderful conference this year. Make sure you get your registrations in soon, as it will be very busy with the Annual Balloon Festival occurring at the same time. I look forward to seeing you there and again thank you for your help and support through out this last year. It has been a wonderful experience for me.

APPA Calendar of Events

January 23-27, 2000
Institute for Facilities Management. San Antonio, TX.

March 19-24, 2000
The APPA Leadership Academy: Individual Effectiveness Skills. University of Notre Dame. Notre Dame, IN.

April -14, 2000
The APPA Leadership Academy: Organization Skills. Stanford University, CA

July 16-18, 2000
APPA 2000: Spurring Change. Educational Conference & 87th Annual Meeting. Fort Worth, TX.

July 22-24, 2001
APPA 2001 Educational Conference & 88th Annual Meeting. Montreal, Canada

47th Annual Educational Conference

October 6 -10, 1999

Albuquerque, New Mexic

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STATE/PROVINCE REPORT

CANADA REPORT

By John Watson

Gathering some input for articles like this is always both challenging and rewarding. Trying to catch people and then finally enjoying the conversation or ongoing e-mail traffic. It's the sort of thing that causes us to realize we should chat more often, even if it's just to know that the mood seems a little gloomy everywhere. Although it's nice to hear from everyone, an antidote for this gloom was in order for this submission. Who could I seek out for that inspiration?

The call went out to 'the Sage', seeking the wisdom of the ages if you will. ESP signals were weak and success at the first telephone attempt is rare, but yesterday was my lucky day. "Hello dare" was the highly professional greeting on his direct line. I could envision his smile form 400 miles away (just picture Yoda with grey hair, same height, same dialect, same ears). His advice was crystal clear: "Fish where there aren't any mosquitoes, put it all on someone else's desk, retire in November, and above all, keep it simple." Do not question this advice, but recognize please that it does come from Saskatchewan and from a man who has actually succeeded at all that his advice implies. You may recall from past news that his powers are not to be toyed with since he has been known to cause evacuations, crumbling structures, and massive re-construction merely by being there, and hopefully in that order. Having recaptured positive clarity, on with the news.

No news from Athabasca. Rumor has it that Burck found one of the two lakes in western Canada that have no mosquitoes. We expect a fresh batch of bear jokes upon his return.

Vern in Regina is swamped with project related activity. No mater how busy he is though, he always keeps in touch. He put his update in perspective by recapping last summers utility upgrades and comprehensive campus planning exercise, which laid the groundwork for their anticipated expansions. Growth is largely in the form of two projects related to the new research park in partnership with the Saskatchewan Opportunities Corporation, a 6,200 sq. M. addition to the Education Building, as well as funding being finalized for the Saskatchewan Indian Federated College campus. The process here is pretty much traditional design-bid-build, with contractor expertise on constructability brought in as early as possible. Vern is a wise person, and will therefore be in Albuquerque, but he does not remember Yoda at all.

Down at the University of Lethbridge, Wayne left it all on Brian's desk, who still owes me a lunch so he's afraid to call me back. When I was last down there for a visit they were finishing a science building and starting a general purpose building intended to meet growth demands. Their in-house project manager retired (last November, I think) and there were signs of scrambling to meet fall session. They will succeed due largely to the dedication of those involved, the simplified construction methodology, and the project management technique commonly know as dig-the hole-design-and build-like-hell. This technique allows for critical decision to be made in a highly flexible fashion, after the building is occupied.

Gordon called from Edmonton, prompt and reliable as always and ready to engage high level philosophy. It sounds like construction to the tune of $50 million this year with another $100 million in the pipe. Everything from new residences, to adaptation of old residences, new engineering buildings, an IT complex or two, another steam turbine for co-gen, and the ever popular turkey barn renewal project. Construction management is the popular route at the U of Alberta, with a recognized need for strong project management at the helm. They are embarking on an outsourced effort to fill this need via a collective firm's resources. The conversation turned to the way these projects come to life, with multiple funding sources that usually have self serving timelines, ie. if it isn't spent by such a date, then you don't get the cash. Our environment has a number of provincial or federal funding bodies that massage one another's matching grant muscles for various portions of a project. The scenario unfolding is shortsighted enough to put our campuses at risk of inadequate infrastructure for the future, inadequate operating dollars, and inadequate life cycle management especially given the high tech nature of these facilities.

At the U of Calgary, we welcome Barry Kowalsky as our new Director of Campus Planning. Barry has had an initiation to the issues Gordon mentioned, and certainly seems committed to tackling the challenges described in the scenario above. The concept of achieving stakeholder sign off on a project charter is now in place as a guidance tool for project management here. I'd be happy to share a format with those interested. It serves well internally to develop awareness for the overall planning implications. There is still a broader audience for us all to educate.

As a general observation, the more traditional routes for project delivery seem trusted in our area. Some have been burned on design-build, some have been successful. Project management expertise and schedule seem to be the drives. There appears to be cautious exploration of third party approaches but no real financial motivation to go there.

Meanwhile, back at his desk in Saskatoon, Paul Janaeu reflects on his month long fishing and touring vacation with its absence of mosquitoes. He looks out with content at his desk, now empty. He looks forward to November, when Paul Becker from UBC steps in to take on his leadership role. Apparently where Paul is, it's really simple; the money comes mostly from the province, and that money with anything else is funneled into the VP's offices via Physical Plant for preliminary estimating, where they assign a total funding approval and give it back to Paul to get to work on, in the traditional method he enjoys.

Regards from Calgary RMV

MONTANA REPORT

Bob Lashaway

As is probably true at many campuses, MSU-Bozeman is in the later stages of completing one of the most intense construction periods in campus history. Most of the new construction and many of the major renovations were funded with non-state funds, at a time when state funds were decreasing. The result was having to handle a significantly increased project load with steady or decreasing staff size. By way of comparison, in 1990, the Office of Facilities Services carried about $16 million worth of projects in the various stages of planning, design and construction on our active project list, managed by what was considered to be a lean-and-mean project staff; by 1998, project load had grown to over $110 million, however, our project staff had "increased" by only three FTE. In addition, we had to redirect existing staff away from important-but-not-urgent duties, to cover the remaining gap on the project management side of the house. Consequently, we fell behind on planning and space issues, managing as-built infrastructure and building data, etc. However, I am pleased to say that we never skipped a beat on our regularly scheduled Facilities Condition Inventory (deferred maintenance audit) through the entire period.

Our projects spanned the entire spectrum of institutional space types, including new residence halls, a major renovation of the existing fieldhouse, a new football stadium, a new engineering building, a new bio-tech lab building, major science facility renovations, a complete overhaul of campus parking facilities and over 8000 lineal feet of utility tunnels to serve the central campus. In Montana, we have two basic methods of managing projects. The state Architecture and Engineering Division can provide project management or, for projects that are funded with non-state sources, the A&E Division can delegate project authority directly to a campus - if they feel that the campus has adequate professional resources to properly manage the project and meet all statutory requirements. All state work in Montana is required by statute to be competitively bid, and projects are awarded to the lowest bidder.

In 1995, MSU and UM requested and received a special legislative exemption from statutory requirements to bid several projects. In MSU's case, the exemption covered our new stadium project, which allowed us to use a design-build approach for the first time, which would otherwise have been prohibited by statute. The design-build approach worked to our advantage in that it allowed the project to be completed in the time allowed from the end of one football season to the beginning of the next. However, while the design-build approach worked well in this situation (constructing in a short window to not miss any football games comes at a cost), I would not represent the design-build approach as the great panacea for all our construction headaches. Design-build work is no easier to manage than is low bid work - it's just different, and it comes with its own baggage. As with any method, constant vigilance is required.

In 1999, most of the work is completed and we can now begin to evaluate what it is that we have worked so hard to create. In general, it appears that we did not make any significant errors in judgement, which could be due in great part to the fact that both the planning and the long-term maintenance responsibilities are consolidated in the Facilities Services department at MSU. Currently, we have only two major projects in design - a $13 million new lab addition to the Chemistry Building and a $7.5 million renovation/deferred maintenance project for the university library and archives. As our massive construction effort scales down, our biggest challenge will be to re-focus on those important-but-not-urgent duties that have been deferred for so many years.

Over the past six years The University of Montana has administered approximately $140 million dollars of construction projects. We have implemented the commissioning process in one form or another on many of these projects with varying degrees of success. As a result, for future work we are now incorporating specific procedures for the commissioning of the building systems into both our construction documents and the owner – architect agreement.

Since the implementation of this process requires participation and cooperation of the architect/engineer, general contractor, appropriate subcontractors, the Commissioning Authority, and the University, each party's role will be clearly defined as to their participation in the commissioning process. The general contractor, and appropriate subcontractors provide the labor and material necessary to complete the commissioning. All costs will be included in their bids.

The University will retain a Commissioning Authority on a per project basis. The Commissioning Authority will be an outside consultant not associated with the design engineer. The structure of the process has been carefully delineated in the specifications so that it will not matter which Commissioning Authority is used since we cannot insure that we will get the most qualified consultant appointed due to the nature of the State's selection process.

We have found that if there is faulty design we have a better chance that it will be disclosed during the process if there is no association between the Commissioning Authority and the design engineer. We understand that there is an overlap in the roles of the two disciplines and strive to keep duplication of duties and their related costs to a minimum.

It is our intent that at the end of the commissioning process that we will have building facility systems that perform interactively in accordance with the design intent and our operational needs.

Montana State University

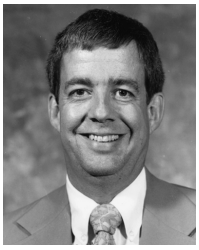
Since arriving here just over two and one half years ago, we've put in place approximately $20 million worth of construction on the MSU-Billings campus and have another $15 million programmed or under design. Unfortunately, state codes mandate firm fixed price sealed bids and often times you end up with just that - the least priced product. As such, it is imperative that you spend the extra time to design in quality both from the maintenance as well as the aesthetic viewpoint. Customer requested change orders after bid opening will devastate a project budget. The best advice I could give

someone is to insure that your completion time is realistic. Require your architect/engineer to develop a schedule and make sure it makes sense with respect to a critical path and long lead procurement items. Then make sure it overlaps your school schedule and construction seasons in a logical fashion. Establish intermediate milestones throughout your project to insure your schedule stays meaningful and review progress with respect to that schedule at least bi-weekly.

Our next big project is the development of a Comprehensive Master Plan. The vision will have a 15 - 20 year perspective and embrace the principles of our Strategic Plan. Additionally, it will address such issues as: (1) Enrollment projections; (2) Zoning & real estate acquisition; (3) Utilities (centralized, decentralized or satellite); (4) Internal/external circulation (pedestrian, vehicular, ADA & mass transportation); and (5) Community/private/legislative involvement (developmental & informational). The architect will facilitate an advisory board made up of major stakeholders within the University. The master plan will include a Capital Improvement Plan with the necessary documentation for the legislative Long Range Building Program for the next five years. We will keep you advised as to our progress. RMV

Our apologies to Wyoming. The winter and spring articles were inadvertently left out of the newsletter. The following are those articles.

WYOMING REPORT



Frank Fox

Today (August 2, 1999) is the first day of our annual shutdown to service the main steam plant and the associated distribution system. During the next two weeks, the residence halls will be provided steam from a University owned semitrailer truck mounted boiler and Athletics will receive steam from a permanently installed boiler. It is during this time frame that the boilers are gone through and inspected/repaired as required as well as the steam distribution system replacement/repair of valves, expansion joints, pipe support systems, etc. This time of year was selected due to summer school ending last Friday and Fall classes don't begin until August 30; in addition, it is the warmest time of the year.

Currently, there are three new structures in the planning stage for the campus. One is a student center for student athletes, the second is an addition to the Fine Arts Building for the Dance Department, and the third is addition to the BioChemistry Building.

The academic areas of the university have completed the "Academic Plan for 1999-2004" so now the support services are engaged in writing the "UW Support Services Plan" in order to facilitate the Academic Plan." The purpose of the Academic Plan is to guide decisions concerning the number, scope, and focus of academic programs; the activities of academic personnel and staff; and the allocation of resources and institutional energy. With this in hand support units will prepare self-studies that examine, among other things; what function(s) are provided and the services or products delivered to fulfill the functions(s); the institutional need for each service or product; the quality, cost, and efficiency of delivery; and whether or not alterative delivery systems are available and should be considered. All in all this should be challenging, educational, and productive. The self study is due for completion in October. The first draft of the Plan is due in December with the final plan being completed by April 2000.

The University of Wyoming Physical Plant is currently in the initial stages of installing a new computerized work order system. This system is capable of tying in to all of the other systems whether it be CMMS, CAAD, GIS, etc.

Currently, GIS is only used by isolated departments on campus. CAAD is used primarily by Facilities Engineering, Facilities Planning, and the Space Management Office. As well as various academic areas.

CMMS is used in the form of Metasys by Johnson Controls. This network covers roughly 24% of the campus and can be monitored from three separate locations.

A project to re-roof the domed Arena-Auditorium at the University of Wyoming has been completed at the expense of the roof manufacturer. Siplast Co. of Irving, Texas, was not contractually obligated to replace the roof but elected to do so because company officials were concerned with their reputation as a leader in the roofing industry. Siplast made the original copper foil roof that was placed on the Arena Auditorium eight years ago by B& M Roofing of Boulder, Colorado. B & M also did the re-roofing project. The contract called for the company to replace the roof if leaking occurred. Even though that did not happen and consultants for UW and the company had been unable to identify the exact cause of the blistering, Siplast felt it was important to do what was necessary to resolve the problem. Siplast was outstanding in their cooperation throughout the negotiations on that project. They wanted to ensure that this was a high quality roofing project indicative of their premier reputation in the roofing industry. They replaced the roof without cost to the University of Wyoming.

The Central Wyoming College campus is located in Fremont County on the outskirts of Riverton, a city of about 10,000 on the banks of the Wind River. The campus and community lie in the Wind River Valley, a large lowland area bounded by mountains on three sides. The area has a wide range of environmental zones from cold desert to alpine. Lakes and streams are abundant. Gannett Peak, Wyoming's highest mountain, is in close proximity to where the Wind River Mountains adjoin the valley.

The valley has a rich and varied history. A large portion is presently occupied by the Wind River Indian Reservation, home of the Shoshone and Arapahoe tribes. The rendezvous of the mountain men was held in the south portion in the early 1800's. Gold mining in the Wind River and Absaroka Mountains has now yielded to oil, gas, uranium, molybdenum, and copper. The abandoned Oregon and Mormon trails are nearby and even today can be traced for great distances.

Recreational opportunities are unlimited. Yellowstone National Park, Grand Teton National Park, Hot Springs State Park and extensive forested lands are within easy driving distance. Outdoor activities include skiing, snowshoeing, ice-skating, hiking, backpacking, hunting, fishing, photography, horseback riding, golfing and swimming.

Two electronic classrooms in the Central Wyoming College classroom wing are completed and are soon to be "connected to one of the most sophisticated control rooms in the Rocky Mountain region," Vice President Joe Dolan said. By January, the control room will be connected to electronic classrooms at schools in Riverton, Lander Valley, St. Stephen's and Fort Washakie and to the rest of the schools in CWC's service area later in 1999.

"We will also be connected to the state telecommunication system when it is finished, which will allow for delivery of distance education courses statewide," Dolan said.

Also new is the instructional technology lab constructed in the Administration Wing this summer. The sophisticated lab will allow faculty to redesign curriculum for distance delivery using the latest in multimedia techniques.

The electronic classrooms and instruction technology lab were made possible by the $10 million Star Schools grant awarded to CWC last August. Several faculty members spent time this summer developing their distance education/multimedia courses, including the nursing faculty who will be delivering their program to students in Jackson this fall.

"These courses will enhance campus instruction and provide increased access to off-campus students," Dolan said. "New learning environments created through the use of instructional technology is a very exciting avenue and everybody in this project are to be congratulated for their hard work and patience."

Meanwhile at the University of Wyoming the remodel of the Half Acre Gym is drawing to a close and on the horizon are an addition to the Fine Arts Building, a Student Athlete Center, and Renovation of the Student Union. More to follow on these projects. RMV

UTAH REPORT

Salt Lake Community College has been experiencing tremendous growth over the last few years, and with growth comes the need for expansion. To meet the expanding needs of the college, and in order to make education available to and serve all areas of the valley, Salt Lake Community College is expanding its campus to include three new facilities.

The college is in the process of completing construction on a new facility donated by Larry Miller. This facility will become one of our future small campuses and is to be used by the Entrepreneurship Training Center and Small Business Training programs. This facility will consist of about 37,000 square feet which will include smart classrooms, computer labs and a 3,000 square foot conferencing center which will be available for business and industry training and community activities. Even though this is a donated building, the operation and maintenance costs will be absorbed by the institution and not be funded through educational and general funding. We will start furnishing and setting up the Larry Miller building around Thanksgiving for occupancy in January of 2000.

Acquiring a donated site is filled with different challenges than going through the normal channels for acquisition of a new facility. It was much easier for a private individual to put the wheels in motion than it was for us to deal with legislative requests, state funding and having the state oversee the project.

Another project we are currently working on is the construction of our Jordan Campus on 90th South and Bangerter Highway. This facility will initially consist of two buildings in the first phase and is presently under construction and approximately 25% complete. The first building will be a utility distribution center from which chilled and hot water will be distributed for the campus HVAC systems.

The first classroom teaching building will contain a home for our Dental Hygiene Program and will consist of smart classrooms, open computer labs and a technology learning resource center. Occupancy is expected to take place in time for Spring Semester of 2001. The utility distribution building will consist of 12,000 square feet and the classroom area will be approximately 84,000 square feet.

We have also recently acquired an existing facility known as the Detroit Diesel Building. This facility consists of ten acres with an existing 70,000 square feet of building space. This site will be used for some of our heavy vocational programs; Truck Driver Training, Heavy Duty Mechanics, Refrigeration, Non-Destructive Testing and a space for our continued relationship with the Ford Asset Program.

It is anticipated that a short master planning effort will take place to determine overall use of the site and existing buildings and remodeling will begin mid-year 2000 for use by Spring/Summer Semester of 2001. This is an older facility that has been used commercially for a number of years and bringing it up to educational teaching standards will take extra effort.

Coordination of all users of these new facilities has presented many challenges in planning for use and furnishings; including colors, fabrics, finishes, tiles, etc. To make these transitions easier, throughout the years Salt Lake Community College has developed a standard that all buildings and satellite campuses must adhere to whether they are new or existing buildings. These standards have helped to make Salt Lake Community College a campus we are proud to be a part of.

Quarterly meeting of the PPCA

On July 8 and 9, Salt Lake Community College hosted the quarterly meeting of the Physical Plant Craft Association on its campus. Colleges and Universities from as far away as Kansas and Nebraska to California participated in this meeting. Excellent training sessions as well as tours and shop demonstrations were some of the highlights of this meeting, as well as a catered lunch at their Facilities Pavilion.

The Physical Plant Craft Association was found in 1988 by Mr. Scott Goodwin who was Crafts Manager at Utah State University. His vision was ". . . to share knowledge and information among the crafts at various institutions so that they could maintain quality service and productivity." The Association began and has spread across the western part of the United States.

The next meeting of the Association will be held at Stanford University in November 1999. We would like to take this opportunity to invite you to participate and support this Association by attending this next meeting. RMV

Colorado Report

By John Bruning

Colorado institutions of higher education are likely to see significant reductions in state-funded capital development under new Republican Governor Bill Owens' administration. Priority for state-funded capital development looks to shift more toward state highways and corrections divisions. For the past several years, Colorado has enjoyed a budget surplus, but Owens has set a course to cut taxes which will further reduce the amount of funds available for capital development. In addition, the newly appointed Director of the Colorado Commission of Higher Education, Tim Foster, has made it clear that higher education will find it harder to justify new capital construction until the institutions can demonstrate higher utilization of their existing facilities.

For many institutions, this trend may be a blessing in disguise, as the volume of capital construction projects statewide has stretched our capacity to manage all of the projects effectively. During a recent tour of state buildings by the Colorado legislature's Capital Development Committee (CDC), several of the CDC members commented that if funding for capital projects is reduced, there should be an increase in state-funded controlled maintenance in order to reduce the backlog of statewide deferred maintenance estimated between $300 - $400 million.

The recent period of intense capital development has resulted in successful renovations and new construction on many of Colorado's college and university campuses. Colorado State University in Ft. Collins has just completed $18 million 53,000 GSF addition and 160,000 GSF renovation of their Engineering/Physics complex. The renovation work brought the late fifties built facility up to current standards while the addition provides needed program space. Tommy Moss, CSU Campus Architect, said the hardest part of the this project was working in occupied areas of the building and trying to minimize disruption, while keeping the project on-time and on-budget.

Tommy also reported that a $3.8 million addition and renovation of the Student Recreation Center for volleyball, weight training, aerobics and locker spaces is ready to go for the fall semester, as is a $6 million renovation of their Moby Gym and addition to the Fum McGraw Athletic Center. Trying to meet program needs within the available budget was the biggest challenge, Tommy said (sound familiar?). A $340,000 flood mitigation project, in the form of berms and retention areas, around the Lory Student Center, Eddy Hall and the Education Building, was also completed recently and additional storm drainage improvements are planned in response to the 1997 flood.

The Colorado School of Mines is working on the final phase of a $20 million renovation and addition to Hill Hall, a metallurgical and materials engineering facility. The project includes a 30,000 GSF addition and 60,000 GSF renovation. The project has particular focus on improving the ventilation and mechanical systems to support the program, according to Paul Leef, CSM Planning and Construction Manager. Paul commented that the project was frustrating in that the general contractor went through three project superintendents and CSM was compelled to go through a painful value engineering process to get the project in budget.

Looking ahead for CSM, a $12 million, 35,000 GSF classroom building has been funded and is scheduled to begin construction in the spring of 2000. In addition, several auxiliary projects are in the planning stages such as ADA renovations in the Student Center, a new fraternity house, family housing facilities and a dorm renovation.

The Colorado School of Mines is located in Golden, Colorado and has a student enrollment of 3,3000 using one million GSF of general-funded facilities. Graduates of the unique mining and engineering programs at CSM realize the highest percentage of job offers at graduation of any Colorado institution of higher education.

Al Mages, Director of Physical Plant Services at Ft. Lewis College in Durango, Colorado submitted the following updates on capital construction activity at Ft. Lewis:

> The facility construction and renovation program at Fort Lewis College currently exceeds $40 million, the most aggressive program the college ever initiated. The program consists of Capital Construction; Controlled Maintenance, ADA Accessibility and college funded projects. The four new capital construction projects, including their gross square footage and appropriation, are as follows: Science Expansion (38,372 sf, $9,373,198), Center of Southwest Studies (49,825 sf, $7,774,033), Hesperus Hall Replacement (55,362 sf, $9,733,455) and the Student Life Center, a student recreation facility, (48,566 sf, $7,642,46). Other major projects include reconstruction of the primary east-west sidewalk to meet ADA guidelines, replacement of the roofs on the Gymnasium and the Library, replacement of the ventilation systems in the Natatorium and College Union kitchen and construction of a 63-foot high clock tower in the center of campus. Dust has not been a problem this summer; rain on the other hand has hampered progress. All things considered, the work is progressing well.
>
> The most notable success of the year was the completion of the new exhaust and make-up air system serving the cafeteria kitchen. The entire kitchen except for the dishwashing area was disassembled to facilitate the construction. With the help of the design consultants, contractors and Physical Plant Services staff, the project was completed in a little over two months.
>
> The replacement of the roof on the Gymnasium has also been a challenge. While asbestos abatement had been scheduled as the first step of the project, the late discovery of asbestos containing fireproofing on a major structural member got the project off to a slow start. Once the abatement work was completed, the rains came. With strong perseverance, the roofing contractor was able to complete the re-roofing just in time to allow the gymnasium floor-refinishing contractor to complete his work just the week before the beginning of classes. Now some might call that "cutting it close". We prefer to classify it as "just in time scheduling".

The capital construction projects are progressing. All four are being managed using the Construction Manager/General Contractor method. The time demands managing the work in this method is more significant than expected. The good news is that we have been able to have designs completed that fall within the respective budgets.

Thanks Al for that report! Here in Boulder at the University of Colorado, we have $38.3 million of construction underway, highlighted by the $13.8 million Humanities Building, the first new facility, solely dedicated to the College of Arts and Sciences, built in the last fifty years. Occupying the last building site in the Norlin Quadrangle Historic District, the 59,000 GSF facility will incorporate state-of-the-art classroom technology.

Ten projects are currently in the design phase totaling out at $67.8 million, while another twelve projects are in the program-planning phase for another $271 million. Many of the projects in the program-planning phase are likely to wait in line for state funding as I noted earlier. Frankly, the biggest challenge we're having in Boulder is trying to deal with all the projects we have going while keeping the campus open and safe. We joke that we'll have to start handing out hard hats to the students at orientation and that most students will never see this campus in a stable condition without major construction activities. I guess we'll ride this horse till it drops, but it's a wild ride! Hope to see you all in Albuquerque! RMV

New Mexico Report

By Harvey D. Chace

It seems like new construction is both a blessing and a curse. To facility managers and particularly to the operators and maintainers, a new building looks like an opportunity to instantly improve customer satisfaction. We all want to be partners in the progress represented by new construction. But, if we fail to assert ourselves throughout the planning, design, and construction process we will likely inherit an under-performing facility and bear the criticism of building occupants for decades to come. Rather than a mere team player, Physical Plant Directors (PPD) must be aggressive partners in new construction.

"Aggressive Partnering" is my personal slant on the time - honored construction-partnering concept introduced by the U.S. Army Corps of Engineers over a decade ago. Aggressive partnering means insisting on a seat-at-the-table during the planning, design and construction process whether or not your institution's facility planning process routinely includes you. If your university's leadership always calls you and asks your advice before they make a facility renewal or construction decision, then skip to the next article. But before you go, e-mail me the name of your V.P. for inclusion in the RMAPPA Hall of Fame.

The first place the PPD or representative needs to be is at the University Strategic Planning Forum. Strategic Planning is making the rounds again as a corporate-management must do. And that's a positive sign. But a surprising number of executive level strategic plans fail to integrate the institution's vision with a realistic financial plan. That's were the PPD can add value to the process. The Plant representative can accurately provide construction renewal and life cycle operating cost estimates for various classes of construction and program use. Integration of facility cost, capital constraints, and the university's vision about its academic program imperatives result in a well grounded institutional strategic plan and a complementary Strategic Facility Plan. Without your early, high-level participation and feedback, effective strategic planning won't occur and facility planning and programming will continue to be an adhoc process.

The programming phase of the design process is the second arena where aggressive play can pay off. Normally, the realm of the architect and the customer, physical plant proactive participation (how's that for alliteration) can improve the process. During this crucial phase, PPD facility maintainers, custodial management and grounds care directors can set the stage for a successful new construction project. Custodial space standards, trash collection and compaction, landscaping, assessment of the actual delivery capacity of the central plant, space for free standing mechanical equipment, satellite maintenance shop space, and infrastructure upgrades (which must be part of a comprehensive facility renewal), are just a few of the issues that should be discussed and placed in the programming document.

During the programming phase its time to consider building-commissioning services. Some would argue that every new facility or renewal project should be scrutinized by an independent commissioning agent who reports directly to the university's facility manager. At a minimum, I suggest that you insist on commissioning services for a facility whose HVAC and electrical systems must absolutely meet every planning parameter (ex. research facilities). Not only does the commissioning agent assure operational performance, he or she reviews every phase of design and construction to assure that durability maintainability, and component access standards are met.

Review of plans and specs at the completion of the preliminary design, design development and construction documents phases of planning offer additional opportunities to ensure that you will inherit a reliable and maintainable facility. But what level of review constitutes aggressive- partnering? It is unlikely that the university's in-house engineering staff has the resources to perform a multi-layered, light-table review of mechanical and electrical plans. But even if you are the sole resident engineer, as well as the PPD director at a small college you can aggressively ensure that you won't inherit a "sick-building" by applying a lessons-learned checklist. Simply list your building performance pet peeves, lingering punch list items from previous projects, and premature system failures that have compromised your maintenance budget. Insist that the design team demonstrate the actions taken to avoid the critical issues you have raised. Or, if you have hired a commissioning agent, ensure that he or she is aggressively pushing maintainability and durability issues during the review process.

Finally, take the most obvious action. Monitor the construction. But, pay attention to job site protocols. Your staff engineer or a senior technician will probably do more harm than good if your "inspector" starts barking orders at a subcontractor. Aggressive partnering must first be effective partnering. Make sure the Physical Plant's on-site technical review is done in coordination with the project manager, the general contractor and the commissioning agent. The general contractor will probably appreciate feed back on the

performance of specialty subcontractors, but make sure that communications flow through the project manager and the general and not through the sub's employees. Also pay particular attention to design-build construction. It can be a very effective and low cost construction technique. But that is only true if the institution is willing to commit the appropriate level of oversight to the project. Assignment of a full time, on-site, multi-disciplined staff engineer or engineering manager to the design-build project may be necessary. If you skimp on design-build project oversight, you may find that you were value-engineered into a poorly constructed, under-performing facility.

Aggressive partnering is the right management technique for facility maintenance and operations directors whose needs are always in competition with construction cost per square foot limitations. Balanced with an attention to protocols and recognition of existing planning and design processes, can assure that new construction offers many more solutions than problems. RMV

Arizona Report

Arizona State University
by Dave Brixen

ASU's Facilities Management Department has used some non-traditional construction processes in recent years to accomplish certain types of projects. One method used is a form of turnkey contracting. The turnkey contracting is a modification of the design-build concept. The process has been used several times by Ray Tena, Manager, Utilities and Engineering. This method has been used primarily for installation of major pieces of mechanical equipment, such as boilers and chillers. This process has been very successful. One example is the installation of a 60,000 lbs./hr. high-pressure steam boiler with feed water pumps and accessory equipment at a cost of $900,000.

Under the traditional method of contracting, ASU would have had to hire a consultant to engineer the project and produce detailed drawings and specifications. Then, a formal bid process to hire a contractor to perform the work would be used. This process typically resulted in numerous change orders. Using the modified process, however, ASU in-house staff identifies the major piece of equipment to be installed, provides a preliminary engineering layout for bidding along with performance measures fully defined and then goes to bid. Hence, the successful contractor must meet certain performance criteria given the dollar amount of their bid. In this boiler project the results were such that ASU was commended by the State of Arizona Boiler Inspector for efficiency and low polluting emissions relative to the new installation. This method of contracting saved substantial time and dollars over the more traditional method.

Should you like more information about this process, please contact Ray Tena at (480) 965-1835.

Downtown Career Center - Arizona Western College
by Bill Cheatham

In an effort to accommodate our increasing off campus enrollment and the federally funded JTPA program, we constructed a 22,000 square foot, three facility complex in a city-owned commerce center. Initial planning for this project entailed a land swap with the City of Yuma and the college's agreement to meet aesthetic overlay district standards for the historic downtown area.

The project was funded by a combination of pledge revenue obligation funds and college auxiliary funds. Because of this financial approach, a fixed dollar ceiling was established for its construction. To prevent exceeding that ceiling, value engineering was instituted at the schematic, design concept and construction document phases. For example; Integral colored concrete was used in all corridors and hallways, four and eight inch masonry block was used for the exterior instead of brick, Glu-Lam beams were used vice steel for the roof, and the owner contracted for flooring and roofing through state contracts to reduced the final cost of construction.

The Director of Facilities Management and Planning fulfilled the responsibilities as project manager and, in coordination with the architects, managed the construction from schematic workshop to substantial completion. The only significant problems encountered during this project were issues surrounding City jurisdiction in construction projects involving state agencies. Community colleges are technically state entities and therefore must comply with applicable state statutes and, with the exception of the City Fire Code, are not governed by city requirements. The fact that we do not require city inspections, do not have to comply with city zoning ordinances, and do not require a Certificate of Occupancy led to some conflict during the project's progress. Although the City had dealt with several federal agencies in the past, we were one of the first state agencies. I think at the conclusion of the project is was looked back upon as a valuable learning tool for both.

RMV

Editor's Corner

By Paul Smith

It was really interesting to read about all the happenings in the Region. I appreciate those of you who have provided your state/province correspondent with the articles which have allowed our newsletter to be so informative. There is a lot going on in every state/province so I ask you to keep the excellent articles coming into the correspondent. The September Institute is in Montreal and January's Institute is in San Antonio. I urge you to go. This is a great program and is really helping to make us more professional. The Region offers scholarships and I encourage you to get the applications into the system for next year. Sooner is better.

Harvey's program for our Regional meeting looks exciting and should deprive us of a few hours of sleep. I look forward to seeing you in Albuquerque and on the golf course.

Bill Rose

Bill Rose was killed in a plane crash near Lake Clark Pass in Alaska on August 5, 1999. Bill was Director of Facilities Services at Montana State University-Bozeman from December, 1987 through August 1993 and was also a member of the Rocky Mountain Association throughout that period. Bill served as editor of the Rocky Mountain Views from Associate Vice Chancellor for Administration at UMass/Amherst. Bill remained active in APPA and served on many FMEP teams. He began his higher education career in 1978 at Penn State University, serving in a variety of facilities management positions. At the time of his death, he was the Vice Chancellor for Administrative Services at the University of Alaska, Anchorage.

Paul R. Gundersen

On June 29, 1999 Paul R. Gundersen passed away following a massive heart attack while at work at the Salt Lake Community College in Salt Lake City. Paul was an active supporter of UAPPA and RMA and always willing to share his time and resources. Paul began his career as a math and physics teacher in the old Trade & Technical school and introduced general education into their curriculum. As the program developed he served as Dean. When Paul began his career in facilities 36 years ago he worked out of old and cramped buildings. With the change to a community college and a new campus site, Paul was able to help design a premier campus located in the middle of the Salt Lake Valley. With the focus on community colleges and trades development, Paul's campus spread to two other sites, with the latest one currently under construction in the south end of the valley. He was directing the construction of this newest facility at the time of his untimely death. Ironically and sadly, he and his wife had barely decided that he should retire at the end of this year.

Paul demonstrated skills and perspectives to bring out the best in his departments and employees who make them successful. He shared willingly of his resources and vast knowledge that often was taken for granted because he was always there. His effort and commitment will be missed by the college and those of us who enjoyed his association. We will miss him, but through his work, benefit from that he has accomplished. To his wife Beverly and his family our hearts and best wishes go out to you.

We know that our friend Paul is looking down on us and saying (especially to Bob Clark at Utah Valley State College) "Huh . . . now you will have to find someone else to pick on!" Paul was 65.

MYTHS OF THE MIND

H. Val Peterson

Maturity is a funny thing. It's not like you roll out of bed one day and announce, "Today I am a mature adult." It creeps up on you and before you know it, you're saying things like, "Back in my day, we didn't have MTV and personal computers and VCRs, in fact, I can even remember when TV came to town." I personally watched the test pattern for a month before regular programming started.

Becoming mature doesn't necessarily happen when you graduate from school, or when you start a job, or start a family. And it sure doesn't have anything to do with age. Some people are mature at 16, some (like the Viagra Virtuoso, better know as Hugh Hefner) never get there.

I recall some witticism floating around about the time I graduated from college (back in the good old days) which was accompanied by an appropriately dorky cartoon character that maintained, "Before I graduated from college, I couldn't even spell engineer. Now I are one." As I recall, the cartoon came in the same packet with my diploma. I'll bet it was the Dean's favorite funny. Now that I am fully able to qualify for senior citizen discounts, this saying has evolved to be, "Before I became an overly-mature adult, I couldn't even spell geriatric. Now I are one."

Unfortunately, entrenched in the American psyche is the idea that maturity (sometimes called old age by insensitive types) inevitably brings about the decline of the mind. Contrary to what my wife may say about the state of my mind, I plan to debunk this myth about what happens when the mind ages.

Myth 1: It Only Gets Worse. Tests do show that 70-year-olds often take longer and make more mistakes than 20-year-olds on mental challenges such as memorizing lists or matching photos in a pile. Hidden within those test results is the countervailing fact that, as people grow older, mental performance begins to differ markedly among individuals of similar age. This finding makes it impossible to draw conclusions about an older person's abilities based upon their age. In fact, a quarter to a third of octogenarians perform as well as their younger counterparts. My personal experience is that my mind has improved with age, not unlike the age enhancement of cheese and fine wine. I wonder if that's where the term "cheese-head" comes from? Probably not.

Myth 2: Memory Goes First. The idea has reigned for years that the aging brain's neurons die off by as many as 100,000 a day – taking with them life's cherished memories. Studies have shown, however, that while brain cells may shrink in old age, they *don't* die off in large numbers. The brain's hardware (telephone-line-like connections and relay switches which act as processing equipment) is vulnerable to wear out. Too bad we can't just do an upgrade from the old 486 to a Pentium II brain! The brain's software (the actual stuff that fills up the mind over a lifetime) doesn't necessarily deteriorate. It's sort of like running the latest software program on an old computer. Under this mode of operation the process will take more time and may involve more glitches, but oldsters can still process a

first-rate intelligence while losing some cognitive speed. I still think a brain replacement every few years would relieve megabits of frustration for old folks. It would also provide the opportunity to purge useless information. For example, my wife can still tell you what cologne I was wearing, what song was playing on the car radio and where we were parked when I proposed. Yes, marriage.

Myth 3: Use it or Lose it. While some other vital body parts could be brought into this discussion, I am currently concentrating on the brain. Scientists say there is not a straight connection between mental activity and mental acuity. Huh? The latest word in this area is – using it (the brain) is good, but doesn't guarantee that you won't lose it (stored stuff). Treating the brain to *novel* experiences and stimuli does seem to be the key. An experiment put old rats in cages with new toys and it was found that their brains responded as neurons sprouted new connections. The effect diminished as the novelty wore off and the rats became bored. Other research has found that "watching" doesn't count. When rats passively observed other rats playing, they didn't improve at all. There are two key words here: they are "*toys*" and "*playing*" (not "*tools*" and "*working*"). We can all benefit from this lesson learned from rats: spend more time playing with your toys and less time working with your tools and your mind will thank you. Your boss, however, might fire you.

Myth 4: Sound Body, Sound Mind. In many cases, illness doesn't devastate an aging brain at all. Sometimes we create our own problems. For instance, overeating, inactivity and stress are predictors for both physical and mental decay. Based upon these predictors, I should be dead, but some (such as readers of this article) would argue that I am dead – brain dead. Exercise seems to benefit the brainpower of the healthy and sick, young and old. But not all exercise is equal. For example, 30 minutes of walking a day is much better than 30 minutes a day of sitting at the bar bending your elbow. And working out on a cross-training machine with feet rotating the footpads and hands working the levers is better than working the clutch and break pedals while sitting in the old pickup with hands turning the steering wheel. This last one may be a poor example for facilities-types. I've seen some of their old pickups with heavy-duty springs on the clutch, no power brakes and no power steering. They do give the driver an acceptable aerobic workout on trips lasting 30 minutes or more.

Myth 5: Old Dogs, New Tricks. Some researchers maintain that an aging brain retains an astonishing ability to rejuvenate itself – so even if you "lose it" you might be able to get it back. That is unless the brain's warranty has expired. Getting it back is sort of like an old dog retrieving a stick. Older brains can "rewire" themselves to compensate for losses. If one neutron isn't up to the job, neighboring brain cells help pick up the slack. So as the brain ages, it can actually shift responsibilities for a given task from one region to another. In one group, simple cognitive aids were used to help old folks remember complicated medication requirements and to acquire computer skills. I hope all this heavy stuff isn't giving you a headache. I already have need for this type training and it's comforting to know I can receive it in my old age.

It's No Myth: Older and Wiser: Not all cultures see the elderly as frail-minded. Since ancient times, people in Eastern cultures have revered their elders. Tests have found that their cultural norms may be self-fulfilling. For example, in China the elderly perform much higher in tests than their American counterparts. In Western cultures, it seems that old folks get no respect. Scientists who measure "wisdom" in the lab confirm that it's an asset that grows with age. Although it may take older people longer to make a decision, it's often a better one. I plan to share this item with my staff along with a memo suggesting they might show me more respect. Fat chance!

I believe there were some other myths I wanted to address, but I don't recall what they were. It's solace, however, to realize that while my mind may have slowed down I will eventually think of them – maybe next year. More research is needed on the aging mind – but never again should old age be defined as a period of mental frailty. Experts have concluded that old brains aren't inferior, but simply different from younger brains. From my perspective, it may be the younger people who are disadvantaged since they must compensate for a lack of information, experience and wisdom merely with more speedy minds.

A parting comment. Someone once said (I don't remember who), "A clean desk is the sign of a sick mind." From the evidence displayed in my office, I must conclude that I have an extremely healthy mind.

RANDOM THOUGHTS ON SELDOM PUBLISHED FACTS

By H. Val Peterson

If you're like me, occasionally you run across a fact or statistic that really catches your attention. In some cases these items are quite revealing. In other cases, the thought, "who cares" crosses your mind. Then there are those that make you ask, "how can they do that?" Some make you wonder what kind of a research grant funded the far-out fact-finding fetish, fiasco or feat. Was the fact a finding of some advanced-degree dissertation? Generally speaking, they are interesting to contemplate, stimulating to consider and pleasant to ponder.

I would like to offer some thoughts on some facts that recently came to my attention.

Did you know that ***Americans on the average eat 18 acres of pizza every day***? Obviously, this bill of fare is collectively, not individually. At first glance, this seemed like an awfully big piece of pizza but when one breaks it down to what you and I get to eat, it only amounts to a piece that is less than one-half square inch in size! Hardly enough to even bother the taste buds. How disappointing! Anyway, I always thought pizza was sold by the box and not by the acre.

Another one. I recently found out that ***if I yelled continuously for 8 years, 7 months and 6 days, I would have produced enough sound energy to heat one cup of coffee***. If you don't drink coffee, I suppose tea would work. And if neither coffee or tea are allowed, hot chocolate will work too – give or take a couple of minutes of yelling. After thinking about this for not long at all, I've decided this wouldn't work well since it doesn't allow for sleep time and then surely my voice would give out long before the cup of liquid was anywhere near warm. I'll bet

some engineer figured this one out. Probably a consulting engineer since they are not very practical either.

Here's another impractical one. ***If you*** (I wouldn't be caught dead doing this one) ***expelled flatulent body gas consistently for 6 years and 9 months, enough gas is produced to create the energy of an atomic bomb***. Really! First of all, to check this one out, you would get awfully tired of a continuous diet of beans, not to mention the social ostracism that would surely happen. Secondly, the container necessary to store all the gas would be prohibitive in size. I suppose you could compress the gas, but that would probably make it that much more dangerous. And if you smoke, it could prove to be a major catastrophe.

And talking about pressure, I understand that ***the human heart creates enough pressure when it pumps to squirt blood 30 feet out of the body***. I suspect no one wants to challenge that one by doing your own independent testing. I would also suspect that if I was to check this one out right after one of my employee confrontations, I could double the distance. Oh well, I suppose I'll never know since I refuse to sever the old aorta just to find out.

Here's a good one for facilities managers**.** ***Banging your head against the wall burns 150 calories an hour***. I suppose a person could lose weight this way instead of jogging, but the cost of aspirin would eat you up. I lost all interest in the head banging thing when I found out it takes 15 hours of serious head knocking to lose just one pound. It does, however, offer a counter irritant to other things that may bother you.

My wife didn't believe this one but it is nevertheless a fact ***that the strongest muscle in the body is the tongue***. Who would have guessed it? I now believe it since I saw some muscle man on TV pull a truck 50 feet with a cable attached to his tongue. Man alive, you should have seen how far his tongue stretched out in front of his mouth! I have concluded that my wife's tongue must be very strong based upon all the exercise it gets. Just kidding.

Here's one you can verify for yourself. Are you ready? ***It's impossible to sneeze with your eyes open***. I'm told by a reliable source that someone has put up a $500,000 reward for anyone who can pull this off. If you try it, however, be careful. The last guy who made the attempt blew both his eyeballs clear out of their sockets. They say it was a pretty messy sight – kinda like those plastic novelty eyeballs that bounce around on a spring.

I like this one. ***Polar bears are left-handed***. Being left-handed myself, I feel a real kinship to the polar bear. There are other similarities as well – whitish skin, long nose, lumbering gait and a nasty disposition. All the polar bears tested came from the northern hemisphere. Since some things are reversed in the southern hemisphere, I wonder if south polar bears are right-handed? This could be the subject of another research project.

This brings me to a sore point. Mortality statistics show that ***right-handed people live, on average, nine years longer than left-handed people do***. Nine years! This is discrimination at its most heinous level. It seems if lefties don't get killed off early by operating machinery, equipment and vehicles designed for right-handers, they probably die prematurely from strokes and heart attacks that occur because of the high blood pressure generated from living in a right-handed world. A sad plight indeed!

This one may bug you. ***The common garden-variety ant can lift 50 times its own weight, can pull 30 times its own weight*** (I don't suppose they use their tongues) ***and always falls over on its right side when intoxicated***. Just how do you get an ant drunk, you say? Evidently, that's a closely guarded secret not divulged by the researcher. I suppose they don't want to be hassled by the SPCA (Humane Society) and MADA (Mothers Against Drunk Ants). However, if you don't want to be shown up by the lowly ant, work up slowly to lift that 10,000 pounds.

Here's one that's gross. Scientists have discovered that ***a cockroach will live nine days without its' head before it starves to death***. My own personal eradication technique involves a thorough squishing, rather than beheading the bug. Why make the poor things suffer for nine days?

Well, enough rambling. If I find more useful statistics, I may ramble on again some time.

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FUTURE MEETINGS

1999 Annual Meeting	Albuquerque, New Mexico	University of New Mexico
2000 Annual Meeting	Salt Lake City, Utah	University of Utah
2001 Annual Meeting	Tucson, AZ	Pima Community College