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2007 - 2008

April 2008

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EVENING PROGRAM

DATE: Tuesday **April 15th, 2008.**
 Tech Session: 15:30 Social: 17:30 Dinner: 18:30 Program: 20:00
 CLEO Banquet Center, 156 Cleopatra Dr., Nepean, Ont., (613) 224-8700

TECH SESSION Maintenance for Sustainability
 Wine and cheese!

THEME: **ASHRAE Research**

PROGRAM: **The People of our Industry – The Human Seven Deadly Sins in the Use and Construction of Buildings**

SPEAKER: **Richard H. Rooley, FEng,**

OVERVIEW: At the beginning of the 21st Century, the construction industry remains one of the most human industries. Most companies involved are very small. There is no recognizable driver. It has even become difficult to define who the client is. It is an industry of diverse education, unique but separate skills, and different methods of training. Each section of the industry speaks a different language and has some difficulty in understanding the language of the other sections. Not only are there social differences among the professions, but there is a strong hierarchical structure of professions, trades, tradesmen, operatives, specialists and labourers. It has had a number of investigations and reports welcomed by some, but opposed, almost as a reflex action, by the majority. The talk addresses the deadly sins, has a survey of leading professionals, and points to solutions.

SPEAKER BIO: Richard H. Rooley (FEng FASHRAE) is a Consulting Engineer in London, England. He has designed HVAC systems and developed operation and maintenance procedures for commercial, health, public buildings and housing. He has worked with universities in research on indoor air quality and investigated problem buildings and achieved solutions. He acts as an expert in litigation, and as an arbitrator and mediator in disputes. In seeking solutions to problems in buildings, he has used teams of professionals, from inside and outside the HVAC industry. Mr. Rooley has been a member of ASHRAE since 1976, and has served on many standing and technical committees. He has chaired the Administration Council, Education Council, Publishing Council, Member Council, and ASHRAE Planning Committee. He is an ASHRAE Past President (2003-2004), past Treasurer, and has served as a Vice President for three years. He is a Fellow of ASHRAE, has received the Distinguished Service Award, the Regional Award of Merit and the International Activities Award. Outside America, Mr. Rooley is a Fellow of the Royal Academy of Engineering, a Fellow of the Institution of Civil Engineers, Mechanical Engineers, and the Chartered Institutions of Building Services Engineers. He has been Master of The Worshipful Company of Engineers in London, is a freeman of the City of London, and is a Licensed Lay Minister (Reader) in the Church of England.



Menu

Spring Salad followed by Chicken breast with potatoes and rice
 Strawberry Shortcake

Chapter Members: \$30.00 Guests: \$45.00



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President & CRC Delegate



President's Message

By Robert Lefebvre
P.Eng., LEED AP
2007-2008 OVC President

Hi Everyone,

Each month, I struggle to put together some interesting insights for my monthly President's message. So for this month I thought, why not tackle global warming? I mean really, how hard can it be? So here is my take: Is global warming caused by mankind? I haven't got a clue. I have watched the Al Gore video, An Inconvenient Truth; I have heard speeches from scientists that the video is load of political hogwash; I have read articles written by very educated people both for and against mankind causing global warming. They all sound very convincing. I have come to the conclusion that I don't think anyone really knows for sure whether global warming is a result of humans. What I do know is that mankind has altered the balance of nature, especially since the industrial revolution, and that as long as our population continues to grow exponentially, so will our ecological footprint and demand for natural resources. So regardless of whether mankind has caused global warming or not, does it not make sense to reduce our impact on the earth and its resources? By designing energy efficient systems, not only will this help our environment, but with the price of oil going through the roof, it will help economically as well. Seems like a win-win situation to me. And, hey, if it turns out that mankind is causing global warming, then we would be helping that cause too. Let's not get bogged down by the semantics of global warming; let's be leaders in our industry and do the right thing for our clients' pocket books and the environment.

This month's theme is ASHRAE Research. Each year our Research Chair comes knocking on your door asking for ASHRAE Research donations. As ASHRAE members, you obviously see value in the work that ASHRAE does and espouses for our industry. The money you donate goes directly to help keep ASHRAE at the leading edge of new technologies and practices. In turn, the results of the research gets disseminated to the membership through the ASHRAE handbooks, standards and seminars. It is a worthwhile cause that hopefully you can help out with.

I don't know how many of you have experienced this, but I find it very frustrating when you design an energy efficient system and you go back months later only to find that the building operator has bypassed all the controls. This is as much the designer's fault for not making the energy efficient system intuitive to use, as it is the building operator's for bypassing the controls. Somehow our industry needs to find a way to bridge the gap between design and operation (how many of you attended the commissioning seminar last month?). Lucky for us, we have one of the foremost experts on Operations and Maintenance flying in from England to speak to us at our April chapter meeting. We are honored to have former ASHRAE president, Mr. Richard Rooley give two presentations to our chapter. The first will be a wine and cheese tech session on "maintenance for sustainability" and the second will be our evening presentation on "the human seven deadly sins in the use and construction of buildings".

I look forward to seeing you at the April meeting.

Yours very truly,

Robert Lefebvre, P.Eng., LEED AP
ASHRAE Ottawa Valley Chapter
2007-2008 President



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President-Elect & CRC Alternate



Tech Session Overview

by François Bélair, P.Eng.
2007-2008 President Elect

In the last few years, high-performance buildings, culminating in net-zero energy buildings, have been identified as performance targets by ASHRAE, the federal government and other organizations. To date, much of the work towards these targets has focused on design of such buildings. Commissioning, operation and maintenance are just as critical to achieving actual energy performance as design. The talk will share pertinent information and thoughts on the importance of operation and maintenance (O&M) to achieving buildings that actually reach net-zero energy performance and illustrate what can happen to performance when O&M is not implemented well.

Committee Chair



Membership

by Christine Kemp
2007-2008 OVC Membership Promotion Chair

ASHRAE Ottawa Valley Chapter would like to welcome the following new members:
Allan Smith, Robert Rideout, David Fowler, Eric Stewart, Mahmud Biswas & Patrick MacLaughlin.

We also have one new student member, Harun Oria.

We are glad to have you join our group and we hope to see you all at our April meeting.

Christine Kemp
Membership Chair Person



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What You Missed

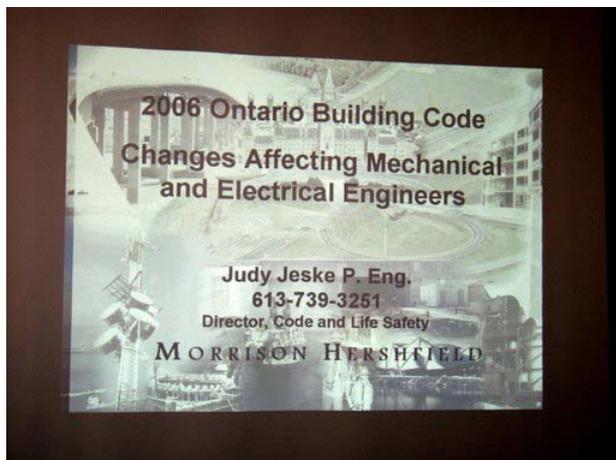
by Patrick St-Onge, P.Eng.
2007-2008 Secretary

The March monthly meeting was a spectacular one! The day started off with a full day seminar on commissioning, our second seminar of the year. This seminar was another great success. Rick Cassault, President and founder of Cassault Engineering and a specialist in commissioning, was the speaker for that event. Mr. Cassault presented very good material, well organized with relevant examples that were of great benefit for the 40 participants. Paul Sra, from PWGSC also exposed the government's approach to commissioning.

The topic of the evening's speech was the Ontario Building Code (OBC). While it may sound like a pretty dry topic for some of you (most of you?), your opinion would have changed after listening to Judy Jeske. Judy is not only a code expert, but also a terrific speaker, one of the best we have received at the OVC. The presentation focused on the differences between the 2006 code vs. the previous version (1997), in particular about section A of the code. This section allows the designer to be innovative if he can demonstrate that the design meets or exceeds the intended performance depicted in the prescriptive portion of the code. The speaker used pertinent examples from real projects to illustrate how this can be done.

The presentation generated many questions from the audience, some of which were very precise and specific. Mrs Jeske impressed everyone with her knowledge of the code, referring to code articles and relations between them without ever looking at her book. The answers were also clear and very well explained, something that you would hardly expect when talking about the OBC.

The audience was one of the largest crowds we have had this season and I am confident that no one had any regrets in staying for the presentation.



The evening's main program



Judy Jeske receiving a big thanks from Robert Lefebvre.

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Jack Teevens
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Support our Students

By Stephen Lynch
2007-2008 OVC Student Activities Chair

It is not easy for students to get involved in our activities nor is it easy for us to free up time from our busy schedules to generate student interest. This has been a successful year and I feel confident that we have reached out to more programs, teachers, career councilors and students. I have been getting some great feedback from these groups who are impressed with the support our ASHRAE chapter can provide.

Now is the time to support their efforts. I would like to encourage everyone to try and take time to attend these next few events listed below and show your support of student efforts (not to mention some great plug time for ASHRAE, print out a few membership forms before you go <http://www.ashrae.org/students/page/698>).

In particular I would like to see our members get out to Algonquin College and support their Applied Research Day. David Thibodeau and Brock Hutchinson have been in contact with me regarding a Student Chapter. If you get a chance, thank them for their support and involvement in our chapter.

As with all other monthly meetings, we encourage individuals or companies to support a student through sponsoring their meals. Please let the greeters at the front know that you would like to sponsor a student for the night. If you would like to sponsor student meals throughout the year we will recognize your contributions by issuing you a receipt for your investment in Student Activities, publish your name and/or company's name on our website, and include you in our list of previous donors in the Capital Communiqué

Thank you for your support,

Stephen Lynch

More student related information from ASHRAE:

Dates to remember:

Thursday, April 10th (8:00 am – 1:00 pm); Applied Research Day at Algonquin College
<http://www.algonquincollege.com/appliedresearch/AppliedResearchDay.htm>

May 10th – May 18th (University of Ottawa); Canada-Wide Science Fair
<http://www.cwsf2008.ca/>

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Table Top Display

By Frank Bann, P.Eng.
Governor

This month's Table Top is presented by Martine Ménard from Sonitech.

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This month's Table Top is also presented by Chris Fudge from Trane.,



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- Dynamic V8 Air Cleaning Systems were used throughout the ASHRAE headquarters LEED renovation. Exceeds MERV 13 Minimum IAQ Requirement
- Uses 2/3 less energy than passive filters
- Greatly reduces CO2 Emissions
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John Lowery, P.Eng.
Senior Territory Manager



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Committee Chair



2007 ASHRAE Curling Wrap-up

by Chris Healey
2007-2008 OVC Committee Chair



The 2008 ASHRAE curling bonspiel was held again this year at the Nepean Sportsplex on Friday March 14. A great day was had by all. The tourney winners were a last minute ad-hoc team consisting of: Gary Hartmann, Joel Primeau and Ernie Moser. Thanks to Stan Millross for handling the MC duties and to Capones Catering for the meal.

See you next year.

Chris Healey

Here are some highlights of the day!!!



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Past President



Research Promotion

By Glenn MacLean
P.Eng.
2007-2008 OVC Past President

Due to a scheduling conflict that I had, Rob has graciously agreed to change the Research theme night to April instead of its normal March slot. Thanks Rob - we'll be honoring some of our investors that we missed in October, so I did want to be present.

We are coming into the final few months of this year's campaign - all donations must be received by June 30th in Atlanta to count toward this year's research investment goal. Our goal for this year is \$18,500 for the Ottawa Valley Chapter. Currently we are at 25% of this goal and our investors to date include:

Longhill Energy Product
Robert Brownstein
Eric Van Benschoten
Lan Chi Nguyen Thi
Breck-Mar Sales and Service
Walmar Ventilation Products
Joel Primeau
Michael Swayne
Steve Moons
Your Chapter Executive (Full Circle Award)

If you've contributed in the past but missed out over the last couple of years, we'll be calling to give you the opportunity to get back on the investment track.

If you're new to ASHRAE and are looking for some information on what ASHRAE Research is about and what their focus is, please review the [ASHRAE Research Strategic Plan \[PDF\]](#) posted on our website.

See you on the 15th, and if you haven't done so, please bring your cheque book.

Regards,

Glenn MacLean, P.Eng.
ASHRAE Research Chair

Mike Tomkinson, P.Eng.
Sales Manager



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ASHRAE OVC Annual Golf Tournament

by Adam Beales
Committee Chair

FORE !!!

With this winter being as long as it has been, we know that you will be encouraged by this clear sign that the good weather is just around the corner....

The 2008 ASHRAE Golf Tournament is scheduled for Tuesday June 24, 2008 at the Loch March G&CC. (No, your eyes do not deceive you, we have indeed moved the date up from the traditional late summer fixture).

Registration forms with full details will be emailed shortly to all Chapter Members and last years guests. At that time we will also be extending an invitation to the Membership to get involved as Hole Sponsors and Gift Bag contributors. As we are all aware the beneficiary of this day is ASHRAE Research and accordingly, the more we put into this effort the more we will gain as a community.

As always we expect a quick sellout so don't delay in returning your responses, and getting your game in shape!

Sincerely,

Your 2008 ASHRAE Golf Tournament Organizing Committee

Treasurer



Student Sponsors

by Jason Alexander
2007-2008 OVC Treasurer

The Ottawa Valley Chapter would like to thank the following individuals for sponsoring a student meal at the March meeting:

Joel Primeau of Genivar

As with all other monthly meetings, we encourage individuals or companies to support a student through sponsoring their meals.

Jason Alexander

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President &
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News Update

By Robert Lefebvre
 P.Eng., LEED AP
 2007-2008 OVC President

Technical News:

BACnet Unplugged: Updates Made to Building Controls Standard

February 20, 2008

ATLANTA – Advances related to the BACnet standard, including recommending public review for an addendum that would tunnel BACnet over ZigBee wireless networks, were made during ASHRAE's recent Winter Meeting.

Proposed Addendum q would lead to a significant reduction in the cost of installation at the sensor and controller level by reducing the amount of wired networking required in a building automation system, according to Jerry Martocci, convener of the BACnet committee's Wireless Networking working group.

"Marrying these two technologies seemed obvious," said Martocci. "BACnet already had the object and services model designed specifically for building automation but no wireless network, and ZigBee had the wireless capabilities but no object model for building automation. We just had to put the two together to benefit from the synergies."

The addendum recommendation began about two years ago with meetings between BACnet and ZigBee experts. "During this time we learned about ZigBee's data communications, and they learned about BACnet's networking and objects and services model," said BACnet chairman Bill Swan. "Together, we looked at a number of approaches and discussed the pros and cons of each."

For various technical reasons, battery-operated devices, including sensors, will probably be ZigBee only, but powered controllers would have BACnet/ZigBee capability. Martocci notes that the "mesh" networking among ZigBee nodes leads to self-healing networks, so that even if a link between two nodes is obstructed, the "mesh" network can route around the obstructed link, leading to reliable networks.

In other developments, the BACnet committee worked toward approval of nine additional addenda during the meeting. "Only a few of these are going out for first public review," said Swan, "but it is our expectation that these are all likely to pass without significant comments."

One such addendum is Addendum j, support for physical access control. This was drafted by the Life Safety and Security working group, comprised of BACnet and experts from the physical security industries. Public reviews of Addendum j have been announced in journals and other media serving the security industry, with long review periods to help ensure it gets the most complete review possible.

Another addendum being prepared for public review is Addendum i, support for lighting applications. This addendum was drafted by the Lighting Applications working group, comprised of representatives from lighting controls manufacturers and BACnet experts.

The BACnet committee continues to work on a broad range of other items, such as integrating buildings and the energy utilities, developing standard profiles for various building automation devices, CCTV control, and elevator monitoring.



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Sustainability News:

Schools and the Opportunity to Reduce Greenhouse Gas Emissions

January 30, 2008

CALIFORNIA - On January 9th, 2008, the Collaborative for High Performance Schools (CHPS) called together a group of stakeholders to discuss schools and their impact on climate change, and how CHPS can address greenhouse gas emissions in its 2009 Criteria revision. Presenters discussed greenhouse gas emissions and buildings, calculating emissions, building and policy solutions and model programs in other building sectors.

Some of the key findings and ideas from the meeting were the following:

1. School design and construction greenhouse gas (GHG) emissions account for 5-7 times the amount of operating an average school for 7 years.
2. The largest single contributor to GHG emissions in schools on an ongoing basis is transportation to and from school. The major barrier to reducing the impact in this area is student safety on transportation routes to and from school.
3. California State Architect David Thorman stated that the Division of the State Architect (DSA) is working to reduce barriers on new technology adoption such as solar by finding new and faster ways for DSA to approve their use.
4. DSA plans to hold four workshops in the spring to discuss the states "grid neutral" schools plan. There will be a workshop on planning, design, financing and technology.
5. Life cycle impacts need to be taken into consideration in calculating climate impact because a vast majority of GHG's come from indirect sources.
6. Larry Schoff of the US Department of Energy stressed the importance of operations and management of the school on an ongoing basis in ensuring high performance benefits and GHG targets are achieved. How do we modify behavior and encourage collective action?
7. There is a need for more interactive education on school performance to the community. This led to discussion of more formal reporting requirements for CHPS schools.
8. "You can't control GHG emissions if we can't measure them" said Charles Eley of CHPS. CHPS needs to establish a way to calculate school GHG emissions (via a "climate calculator") for new school construction and ongoing operations. CHPS should utilize existing metrics and techniques for measuring emissions.
9. CHPS should consider a higher level of recognition or point offering in its rating system for schools that pursue credits that reduce their greenhouse gas emissions.
10. Federal, state and utility incentives are essential for implementation of many greenhouse gas emissions reducing measures.

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Ottawa Regional Science Fair 2008

By Stephen Lynch
2007-2008 OVC Student Activities Chair

A team of four extremely talented ASHRAE judges gathered at the Ottawa Regional Science Fair on April 5th to determine who was worthy. The team was lead by your fearless Student Activities chair and complimented with the powers of Rod Potter, Joel Primeau, Don Weekes and Stephan Riffault. We poured over the more than 200 exhibits to find three special displays that truly understood the essence that is ASHRAE.

It was another great showing from our local youth and it was apparent that a lot of effort was put into these exhibits. The team had to stay focused on the task at hand to find those ASHRAE diamonds in the rough. Once again the junior categories outshined the others in diversity and effort. Unfortunately, the intermediate categories resulted in nothing related to ASHRAE. The senior category has always had one or two that rise to the occasion. After some careful deliberation over a great brew of Tim Hortons on the patio the team agreed on the winners:



Solar Electricity... The future is in our hands
Amelia Zimmermann of Joan of Arc Academy.

Amelia had one of the most in-depth and well thought out exhibits I have seen. She had the Solar Electricity market covered from every detail. After a well rehearsed presentation, the judges were speechless. Her research led her to Australia to get her results. This leads me to wonder; how can one apply for a research grant at Joan of Arc Academy?



Breathe... At Your Own Risk!
Manel Zeghal of Queen Elizabeth Public School.

Manel had an impressive display that was very professionally put together. She showed some great studies on air quality and how it affects us. Don Weekes was all over this one. I am pretty sure he went back a couple of times to marvel at this exhibit.



La Maison "Verte"
Ramy Botorous and Joe Hanna of College Catholique Samuel-Genest.

Ramy and Joe put a lot of work into their exhibit, building a scale model of a house and applying recycling, solar and energy recovery concepts. They had the majority of the application issues worked out and showed working versions of water recycling and use of PVC's for electricity generation. I am quite confident that Green Peace Barbie would have been more than comfortable.

There were some impressive exhibits, but these shined brighter than others with an ASHRAE feel. I would like to thank my celebrity judges who helped me make the difficult decisions.



I.M. Knocks at Our Door Drawing Ever Closer

by Rod Potter

Governor, Chapter Historian, Gopher and Webmaster

As some of you are possibly now aware, I live in a world of I.M. awareness. That's "Information Management" to the uninitiated. My lovely wife Lindsay bombards me with I.M. banter on a regular basis because she lives in a world that is dominated by I.M. My eyes glaze over on a fairly regular basis while I try desperately to remain eagerly interested in her stories from her information-rich work-day. While I normally try to keep my I.M. fascination to maintaining a rigid directory structure on my hard-drive, I have to admit that parallels between our industries are cropping up on a frequent basis.

A Government client I have had for almost twenty years has an impressive portfolio of its own buildings and an even more impressive database of record drawings for those buildings. One of the first things I noticed about accessing their drawing database back in the early 1990's, was the existence of a microfiche machine in their print room. The methodology for finding a drawing was to search through a huge dot-matrix binder for the building in question, thereby revealing a code for the drawing microfiche, which was then found in one of many lovely tin boxes. If you were lucky, the range of microfiches found in this way would reveal a good set of record drawings for that fan system that now sounds like it has thrown a bearing. All of this was done with the help of a microfiche viewer that would be more suited to life in the Diefenbunker. It looked something like this:



The microfiche machine was very efficient and should you be lucky enough to find a relevant drawing, you could press a button and the machine would produce a mini-print about 18" wide, which was readable but not really scaleable. The really impressive thing about all of this was that the organization had a reliable database for drawing look-up. Not to mention the fact that someone was actually bothering to microfiche the drawings in the first place.

Alas with the advent of PDF this is now gradually being abandoned because their entire (original hand-drawn) drawing collection is now being scanned. And this organization is lucky enough to have a particularly knowledgeable (now retired) employee in charge of the scanning process.

This is where the I.M. parallel hit me. On a current project involving the DDC upgrade of controls for one of their buildings, I was easily able to find the original mechanical drawing set from the range of hanging pin-bar cases which reside in the basement of their facility. I had of course been pointed towards the right bin by their impressive dot-matrix binders. I was also pointed towards some other later drawing sets that represented changes that had been made to the systems over the years. These drawings were easily viewable on the still-existing microfiche machine, but alas the print function has gone the way of the dodo (and no-one now seems to know how to fix it), so I had to go in search of the original drawings.

To my utter horror these drawings were missing from the case in the basement. So I ventured forth in my hunt to the individual now in charge of the scanning process, who surmised that the drawings I needed were out for scanning at Wade-Tech. This proved incorrect however; it actually revealed that the drawings were "missing". There were some related and slightly older drawings that would be just as valuable, so I asked where they might be, and it turned out that these drawings had been judged as "surplus" because the later (missing) drawings superceded them. Luckily the surplus designation actually meant that the drawings were now residing in large flat cardboard boxes in the darkest bowels of their building, all taped up and stacked on shelves. I was taken down there and together we managed to wrestle the drawing series out of the right box. Interesting to note here that even though these drawings were considered to be "surplus", they still had not been discarded!

This is of course the point where there is a parallel with I.M. and our industry. One of the major questions for the I.M. buff is to decide when a record is no longer a relevant record. When does that email thread become just so much gibberish and not a relevant document worth storing? My client is very fortunate in that he is able to access the services of a past employee with possibly forty years of experience with their buildings. This guy is able to look at a set of original drawings

for a particular building, dating from say the early 1980's, and know with some confidence whether they are worth scanning, or whether they have been superseded by later drawings that make the early set superfluous. This is a daunting task for any organization, and without the advantage of this sort of past experience, the only right thing to do would be to "scan everything" with the corresponding financial burden.

My client is now well on the way to having an entirely digital drawing database, which is accessible through a Microsoft Access interface, having proper search functions. New CAD drawings are automatically stored in appropriate server folders, and the database tells the operator where the PDF version of old drawings can be found. And they even have a large print machine that can grab that PDF and spit out a full-size print of how the widget was made way back in 1975.

Cheers from the office of Rodders CAS.

Swell Guy



Business Card Ads

by Rod Lancefield

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