

A 360° View of Masonry

With an increasingly specialized design and construction industry, teamwork is more critical than ever. That's where Team IMI comes in.





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Bridging the gap

When an owner wants to build a facility, the most common approach is to hire an architect to design it, a construction manager or general contractor to oversee construction, and specialty contractors to play their parts. Design, manage, build. It sounds pretty simple, right?

The reality is that it takes another component: teamwork. Working toward a common goal – and sharing the information necessary to achieve it – has to be there from the beginning.

Designers not only have to produce appealing and precise documents, but must also pass along their vision to the builders. When you add in tight timelines and budgets, plus increasingly sophisticated building systems, the task becomes even more daunting. How often have you heard, “It looks good on paper, but can it be built?”

Answering that question affirmatively by bridging the communication gap is a top priority at the International Masonry Institute. We do that through our training and educational programs for all the players: building owner, designer, manager, contractor and craftworker.

The following article looks at the educational programs and project services available to the design and construction industry from IMI, to achieve the common goal of quality masonry construction.

To learn how we can enhance your projects, call 1-800-IMI-0988, or visit us at www.imiweb.org.

Tom Nagy

Director of Market Development and Technical Services

International Masonry Institute Ohio Area Office



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CENTER OF ATTENTION The John J. Flynn BAC/IMI International Training Center (above) in Maryland serves as the national campus of the International Masonry Institute and offers specialized training programs and events, plus education programs for designers and builders.

A 360° View of Masonry

By Hazel Bradford | Photos courtesy of International Masonry Institute

High performance building systems, intricate designs, newer technologies, aggressive schedules and tight budgets make collaboration among construction teams more important than ever. To facilitate both collaboration and the end goal of quality, the International Masonry Institute (IMI) provides a full range of services that reach in all directions, for everyone from owners, architects and engineers to construction managers and contractors.

IMI understands the needs of each group because its staff members represent all those professions. “Team IMI” consists of architects, engineers, construction managers, skilled craftworkers and instructors, offering what no other group can: expertise in training, craftsmanship, design, installation and marketing, all in one place.

Lifelong training

IMI was created in 1970 as a strategic alliance between the International Union of Bricklayers and Allied

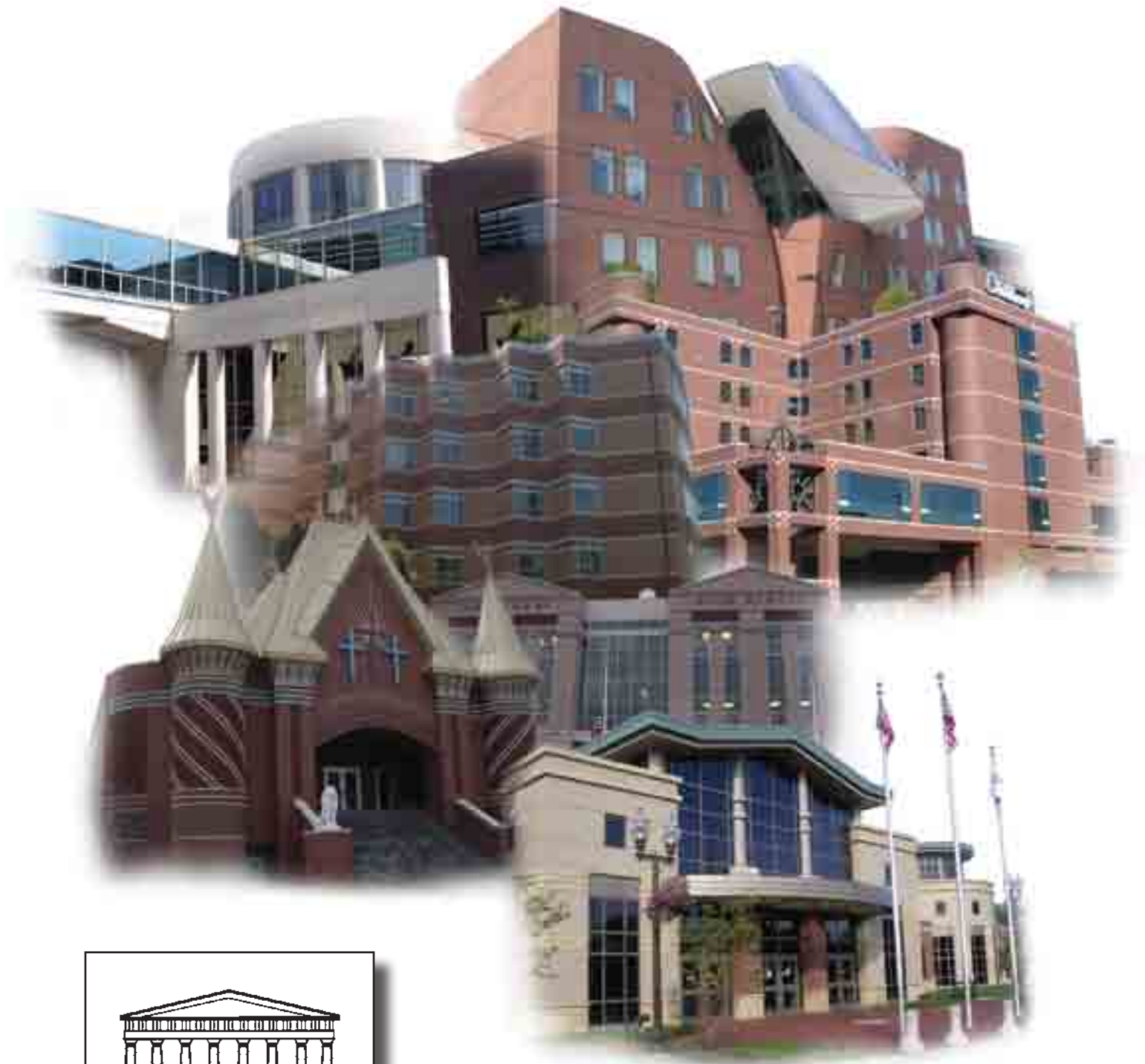
Craftworkers (BAC) and union masonry contractors to promote quality masonry construction. Its core missions are skilled training for BAC members at all stages of their careers, and technical assistance and education for designers and builders.

Together, BAC and IMI operate North America’s only professional training programs in all masonry crafts: brick and block, tile, terrazzo, stone, marble, plaster, cement and restoration. To ensure quality masonry design and construction and an adequate supply of the best-trained craftworkers, IMI provides

a wide range of training at all stages of a BAC member’s career.

Ohio-based BAC members and contractors have the double benefit of two training facilities, one local and one national. The 36,000-square-foot Ohio Administrative District Council/IMI Regional Training Center in Hudson offers apprentice and upgrade training in all the masonry crafts. And IMI’s national campus, the 110,000-square-foot John J. Flynn BAC/IMI International Training Center in Maryland, offers even more specialized training programs and events,

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Photos by Ken Krych

HOME BASE Locally, the 36,000-square-foot Ohio Administrative District Council/IMI Regional Training Center in Hudson offers apprentice and upgrade training.

plus education programs for designers and builders.

IMI training begins even before apprentices set foot on a jobsite. The pre-apprentice program provides an intense, full time introduction to their craft. The result is a more confident – and productive – apprentice from the first day on the job. BAC apprentices then spend up to four years taking hundreds of hours of classroom and on-the-job training on both classic and state-of-the-art techniques and materials.

It doesn't stop there. To increase their marketability and value to contractors, BAC members can cross-train in other masonry trades and skills that offer numerous career paths, including instructor, foreman, supervisor, or even contractor.

The trainers themselves embody the BAC philosophy of lifelong learning. In order to be “certified” IMI instruc-

tors, they must complete the 200-hour Instructor Certification Program (ICP), and are encouraged to return for post-graduate updates. The annual program is a unique opportunity for instructors from all over the BAC/IMI training network to polish their technical skills and learn the craft of teaching.

“The classes enabled me to organize better, plan better, and teach better,” says Ohio instructor Jeremy Caylor, a 2008 ICP graduate.

Fellow graduate Lee Kurtz agrees.

“It was the greatest experience of my entire working career,” Kurtz says.

At all levels of training, safety and health training is mandatory. Another hallmark is flexibility, which lets IMI help designers and managers with custom project needs and to rapidly address changing industry trends. For example, with more attention being paid to overall building per-

Project Spotlight



Photo by Ken Krych

Case Western Reserve Dormitories Foti Contracting

One of the best examples of recent masonry building on a large scale was the new CWRU Dormitory Complex. The building program consisted of seven buildings and provides housing for 750 students, which presented some unique challenges during construction, explains Ron Neese of Foti Contracting, an IMI member and specialist in masonry and stone contracting. This was due to the immense volume of masonry and precast stone required for the project, along with the building's design details.

The dormitory's exterior masonry veneer consisted of over one million modular face brick and 5,700 pieces of architectural pre-cast stone that was manufactured by American Artstone Company in Minnesota. The seven buildings featured 14 prominent bay window assemblies made with the pre-cast stone weighing over 7,000 pounds per floor level. These assemblies were installed as a continuous unit from the second floor to the fourth floor roof line and were anchored by welding to steel plate embeds in the building's concrete structural frame. The complexity of the pre-cast design details was such that the shop drawing, engineering and fabrication process took a total of 16 months to complete.

The installation of the exterior brick veneer walls required strict quality control measures due to the design details of its other four component parts. The face brick wall assembly consisted of structural stud back-up with exterior sheeting and a vapor/air barrier system with 165,000 square feet of three-inch rigid insulation and 26,400 lineal feet of thru-wall flashing. The quality of installation was a key factor in maintaining the integrity and design performance criteria of the exterior wall system. The fact that a large portion of the exterior walls were erected during the winter months under temporary weather enclosures required additional measures in maintaining appropriate quality controls. —Ken Krych

Project Spotlight

House of Blues Cleveland

Anderson Industrial Construction

Working on the House of Blues project in downtown Cleveland in 2004 presented a host of challenges for masonry subcontractor Anderson Industrial Construction, according to President Al Anderson, partly due to a tight design-build fast track method and partly due to the sort of unforeseen elements commonly uncovered when restoring an older building. Since there were no real drawings of the 1950s-era Woolworth's building as reference, some structural issues set the project back nearly six weeks, which was made up during the remaining schedule. Anderson Industrial was responsible for cutting ten new openings for both the inside and outside of the building.

"We discovered mountains of soot and had to install nine concealed angle irons in each new cut opening due to the thickness as we cut into the three foot thick walls," Anderson says, noting that usually in newer buildings only three are required to support the weight of the building. Much of the company's work is unseen now, such as hidden block walls under the music venue's main stage with three speaker openings built in (and which later had to be widened for proper fitting of the sound system). "The brick work on the proscenium on each side of the stage was sand blasted with yellow tinted sand to give it an older rustic look," he says.

The Anderson team was also involved in work along the main entrance along Euclid Avenue, taking great care in patching and matching marble columns seen as one enters the front doors. On the East 4th Street side of the building, the company was responsible for matching up the green marble base at the entrance with new stone. All in all, masonry work was at the core of the restoration project and the beautiful details will be enjoyed by patrons and concertgoers for a long time to come. —Ken Krych



Photo courtesy of D.A.S. Construction

formance, journey-level classes cover wall systems analysis and construction. Having a craftworker understand "why" a wall or floor section is drawn a certain way directly contributes to a superior installation.

"You have to offer members all the education possible," says Ohio District Council Director Robert Fozio.

That in turn reassures contractors, designers and owners that skilled quality craftsmanship is alive and well, and can make the difference on their projects. In fact, many Ohio architects who recognize the value of IMI training have included upgrade training and certification right in their project or master specifications.

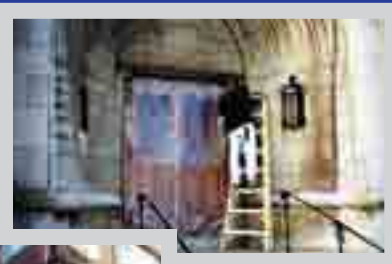
Contractor education

Masonry contractors can take advantage of their own education track through IMI Contractor College, which was launched in 2000. Adaptable for firms of all sizes, it uses an ongoing curriculum to help contractors develop

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Photo by Mark Watt

REGIONAL REACH The Ohio Administrative District Council/IMI Regional Training Center in Hudson is utilized by masonry professionals from Northeast Ohio and beyond.

business tools for growth and to learn from “best practices.” Core modules are Project Management, Financial Management, Human Resources, and Business Strategy/Marketing. Other topics include industry trends, personal finances, and technical masonry issues. For current and potential supervisory staff, IMI has the complementary Supervisor Certification Program.

“A highly competitive construction marketplace demands that subcontractors be equally competitive and well-prepared to serve their role skillfully,” says IMI President Joan Baggett Calambokidis.

“I can’t put a dollar amount on the value of IMI training,” says Alan Anderson, president of Anderson Industrial Construction in Cleveland. “All of my foremen, employees and I are constantly upgrading our training to provide our customers with the most modern, up-to-date installation techniques and give them the biggest bang for their buck. When we show our customers all of our credentials from IMI, they are impressed.”

Design and technical support

IMI staff architects, engineers and construction professionals provide extensive services for designers and construction managers, including technical design assistance, project-specific consultations, educational seminars and resources, all at no charge.

“IMI assists the construction industry with [its] vast collection of informa-



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DAY FOR DEMONSTRATION The recent IMI Masonry Education Day in cooperation with the Ohio School Facilities Commission packed a lot of information into one, fun-filled day for 70 designers and construction managers at the Regional Training Center in Hudson.

tion and resources on any new or old masonry product, from AAC to restoration,” Anderson says. “They are a virtual encyclopedia of information.”

Technical design assistance includes drawing and specification reviews, advice on proper masonry detailing, code compliance and constructability. As any experienced construction professional knows, getting the bugs out early during document development can make a big difference in a project’s success.

An emphasis on best practices informs IMI continuing education programs for the A/E communities, which are accredited with AIA and many other professional organizations. At a recent IMI Masonry Education Day for the Ohio School Facilities Commission, 70 designers and construction managers enjoyed technical seminars on brick, CMU, grouting and reinforcing, masonry movement control, and moisture management, plus a hands-on look

at static mockups and a chance to try their hand at bricklaying.

On the jobsite, IMI directors can serve as the link between the designer and contractor for field items that can be addressed either on site or at the training center. One service popular with designers is having an assembly pre-built, to see firsthand “how the pieces actually get put together.”

To get the best design and implementation, IMI has a Masonry Detailing Series, where scores of floor and wall details are shown in a series of views, including isometric, along with field photos and videos. Other resources



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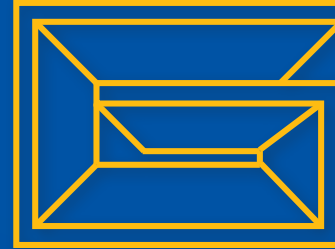
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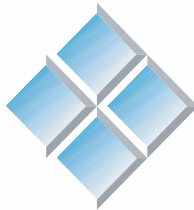
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Project Spotlight



Photo courtesy of Bostwick Design Partnership

John Carroll University Dolan Center Foti Contracting

This massive 266,000-square-foot, brick and limestone structure was finished in September of 2003. The Dolan Center for Science and Technology life-sciences building, houses the university's biology, math, computer science, physics and psychology departments that features three story wings with a 45-foot-high, 8,000-square-foot atrium. Collins, Gordon, Bostwick Architects Inc., provided architectural services and it was built under Turner Construction in a style to match the existing architecture of the existing main campus.

Foti Contracting was responsible for the exterior limestone and masonry work. To provide for exterior texture, the limestone building base gives way in relief features such as brick pilasters topped by stone finials and copings along the stone roof line. Stone accents, in fact, dot the entire brick façade. The exterior also features liberal use of stone arches, some open to allow access to arcades and other in-filled with limestone. To the sides of the atrium, exterior terraces with aluminum railing exhibit designs that tie into the arch theme four large brick chimneys house exhaust ducts. With a compressed schedule the need to stay on budget, the designers and constructors found creative ways to meet challenges. For example, along the bottom of the mansard roof line are copper gutters backed by large stone copings, roughly three feet by three feet by six feet wide and weighing about 800 pounds each. Limestone excavation and fabrication covered 14 months, more than half of the total construction timeframe. It was shipped from out of state and much of the detail cutting was by hand. It was one of the largest scaffolding jobs in Cleveland's recent history with the center's entire perimeter enclosed.

When completed those touring the center had marveled at the craftsmanship needed to make the building so functional and pleasing to the eye. —Ken Krych



LOCAL COLOR The terrazzo floor at Ohio University's Baker Center was the Grand Winner of IMI's 2007 Ohio Golden Trowel Awards.

include Technology Briefs and the IMI Toolkit, which offers answers to a wide range of common questions and demonstrates best practices.

"The IMI team assures designers that the end product will be a long-lasting, maintenance-free building for their customers," says Larry Lencyk, president of Lencyk Masonry Co. in Youngstown. "As a contractor, I want the buildings that we work on to be built with the most up-to-date design details. No one does that better than IMI."

Another innovation is IMI Masonry Camp, where young masons and architects spend an intense week together learning the masonry crafts and the value of collaboration. "You really got to explore what it is that you are drawing," says Warren Bath from Steed, Hammond, Paul Architects in Columbus.

Building masonry's future

For masonry and the construction industry in general, the future depends on creating new opportunities and embracing new technologies. That is why a major initiative at IMI involves

exploring new products and sharing the information with decision makers, as well as providing the critical confidence in proper installation. The IMI LEED Checklist shows how masonry can be an important part of any sustainability strategy.

Another exciting new contribution from IMI is structural design software for load bearing masonry or hybrid masonry/steel. It offers engineers the superior solution of a good, solid wall, at a 10% cost savings over steel frame/stud wall construction.

Golden Trowel Awards

After all these efforts to promote quality masonry construction, it is a pleasure to recognize excellence in design and construction with the Ohio Golden Trowel Awards program. Last year brought more than 80 entries in 10 categories, judged by a jury of industry leaders. **P**

For more information on the International Masonry Institute (IMI), call Tom Nagy at 440.526.6310.

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