



THERMAX™

TOTAL WALL SYSTEM



A DIFFERENT APPROACH

Taking a different approach is not new to Mosher, Dolan, Cataldo & Kelly Commercial, a leading Michigan contractor/developer based in Birmingham, near Detroit. Over the last two decades, the firm has made its mark in Southeast Michigan with innovative construction recognized for the finest materials, craftsmanship and attention to detail. When the firm's partners were ready to try a different approach to steel stud construction on a new

multi-use building in Birmingham's Triangle District, Dow offered a simple solution: the THERMAX™ Total Wall System.

"We were doing another project concurrently and were not happy with the exterior 'outsulation' plane of the building, so we started to investigate alternatives," said Steve Marszalek, a principal with Mosher, Dolan, Cataldo & Kelly Commercial. "As we were seeking a company that both understood the technical

nature of our project and could offer a solution to rising energy costs and the high costs of building materials and building systems, Dow was a sure fit. Through one-on-one consultations and a dramatic dew point illustration, our Dow architectural specialist presented a better building-science approach to wall construction and different wall assembly options. The THERMAX™ Total Wall System clearly addressed the challenges we faced."

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“The THERMAX™ Total Wall System is truly innovative because it reduces the number of trades involved in erecting the wall assembly and, because of the spray-applied interior wall insulation, the smallest penetrations are eliminated.”

VICTOR SAROKI, FAIA  
VICTOR SAROKI & ASSOCIATES ARCHITECTS PC  
BIRMINGHAM, MICH.

## A NEW ADDRESS

Strategically located at the edge of Birmingham’s evolving downtown, 735 Forest is the first building to use the THERMAX™ Total Wall System. The three-story, mixed-use building may become one of the most sought-after addresses in Birmingham. It features a bistro, Class A office space (and new home for Mosher, Dolan, Cataldo & Kelly offices), 11 loft style residences and covered parking.

According to architect Victor Saroki, that’s exactly the kind of usage envisioned for the Triangle District, which is guided by a master plan to create an open, vibrant and pedestrian-friendly downtown environment. Saroki’s vision extends to the greater environment, as well.

“As architects, we are concerned that our building designs are energy-efficient, because this reduces the impact on our resources,” said Saroki. “Likewise, our clients share this agenda. With the THERMAX™ Total Wall System, we’re designing a more responsible building for today and for the future.”

Serving as general contractor and building owner, as well as future occupants, Mosher, Dolan, Cataldo & Kelly principals share a unique perspective on the project.

“We’re not in the disposable building business,” said John Kelly, who also serves as president of the commercial firm. “From the building materials to the amenities to the finishes, we select every detail with care. Then we ask: Is it good design? Is it good business? Is it good for the environment? Our perspective on this project mirrors our approach to every building – one founded on overall performance.”

Natural beauty, environmental sensitivity and sustainable architectural elements are evident all around and within 735 Forest, from the soft beige brick façade trimmed with Indiana limestone to the stone walls and floors, FSC (Forest Stewardship Council) certified veneers and abundant daylight openings throughout. Water-saving plumbing fixtures, energy-efficient heating and cooling, and reflective roofing are just a few of the other “green” features that complement the energy-efficient wall system.

“In my opinion, the THERMAX™ Total Wall System will become the standard wall assembly for this industry by providing superior insulation and air barrier protection plus penetration sealing,” said Marszalek. “The system is a well-thought-out approach to enhancing the building envelope. It considers life span and speaks to the type of firm we are and aspire to be.”

The simplicity of the THERMAX™ Total Wall System offers definite appeal over the typical gypsum-based wall system.

“Our firm has designed many commercial buildings with the insulation located outboard of the wall sheathing,” Saroki said. “But the THERMAX™ Total Wall System is truly innovative because it reduces the number of trades involved in erecting the wall assembly and, because of the spray-applied interior wall insulation, the smallest penetrations are eliminated. We are very enthusiastic about this wall assembly and look forward to detailing it in our future projects.”



## CONTINUOUS INSULATION

With more than 30 years of proven performance, THERMAX™ (ci) Exterior Insulation features a distinct free-rise technology for better product consistency, durability and fire performance than generic polyisocyanurate insulations. An integral, durable acrylic-coated aluminum facer provides a drainage plane and water-resistive barrier. And the foam core provides one of the highest R-values available (R-6.5 at one inch) for immediate insulation and weather protection on the job site, as well as long-term thermal performance.

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### CONSIDER THE TOTAL WALL

The THERMAX™ Total Wall System is more than an insulated wall – it's a systematic approach to achieving efficiency at every level: simplified design, streamlined construction and optimized energy consumption for a reduced carbon footprint.

"Dow is pleased to join with Mosher, Dolan, Cataldo & Kelly Commercial on this project," said Mike Kontranowski, senior market manager, Dow Building Solutions. "The THERMAX™ Total Wall System fills a previously unmet need in the industry by providing a three-in-one solution from a single-source supplier. Not only is this a major achievement for Dow, we also see this as a notable advancement in the building and design community."

### THE ENERGY OF SYNERGY

The potential synergies of the THERMAX™ Total Wall System are especially evident during construction.

"It's one thing when you have the promise on paper, but when

the steel is up and all the trades are on the building site, that's when everything has to come together," said Marszalek.

Carpentry/drywall firm Dun-Rite Finish Systems, Inc. has enthusiastically embraced Dow's new wall system. "The THERMAX™ Total Wall System provides a better quality exterior shell package with greatly improved vapor and moisture seal," said Dun-Rite owner Bruce Schihl. "The dew point is moved to the exterior finish of the wall area, virtually eliminating condensation behind the brick line. The ultimate outcome is significantly less labor and material costs, while providing a higher quality end product. This increases overall productivity and efficiency, resulting in a win-win for the contractor and the building owner."

According to Jerry Vanderpool, carpentry/drywall foreman with Dun-Rite, a typical gypsum-based wall begins with a layer of gypsum, using two guys to muscle the heavy boards into place. "Then you have to install the rigid foam, a base coat of the waterproofing membrane and finally, a



The durable acrylic-coated aluminum facer of THERMAX™ (ci) Exterior Insulation provides a drainage plane and water-resistive barrier, eliminating the extra step of installing a membrane or building wrap. Butyl-based WEATHERMATE™ Flashings protect critical areas against moisture penetration.



"Look at this – there's no frost on these screws. Typically at this stage only the gypsum would be installed and in this cold (outside temperature: 20°F), you'd really get to see thermal bridging at work: little ice cubes along the stud screws. But THERMAX™ (ci) Exterior Insulation covers the studs and blocks those thermal bridges."

JERRY VANDERPOOL, CARPENTRY/DRYWALL FOREMAN



THERMAX™ (ci) Exterior Insulation weighs just 12 pounds per board, compared to exterior gypsum at about 80 pounds per board, allowing faster installation.

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finish coat,” he explained. “When you’re done, it adds up to four trips around the building’s exterior. That’s just not very efficient.”

In contrast, the three-in-one THERMAX™ Total Wall System enables an energy-efficient, moisture-managed wall with fewer materials and fewer installation steps. “Not only is THERMAX™ (ci) Exterior Insulation quicker to install, it’s really easy to use,” added Vanderpool. “I can cut it with a drywall saw – and fewer cuts are needed since the 12’ THERMAX™ (ci) Exterior Insulation boards are longer than gypsum boards, at 8’, max. I can use fewer fasteners compared to exterior gypsum – three screws per stud vs. about seven with gypsum. And one guy can handle it easily since THERMAX™ (ci) Exterior Insulation is so light-weight you can carry it with one hand.”

Vanderpool also praised the overlap system of THERMAX™ (ci) Exterior Insulation and the quality of the flashing. “The shiplap edge (1.5” thickness and greater) helps hide any imperfections in the wall and makes for a nice plane,” he said. “Also, some of the tapes out there peel right off, especially in cold or damp weather. But WEATHERMATE™ Flashing is easy to install – this stuff really sticks.”

#### SEAL OF APPROVAL

Walking through the building, Marszalek pointed out all of the potential points of air infiltration addressed by the air barrier and flashing components of the Dow system. “We spent four months working through a system of how to seal our building, bond beams, etc.,” he said. “With the number of seams minimized, drafts are eliminated, further enhancing the Dow wall system’s insulating value over previous solutions we have used.

“Because I understood the building characteristics, I knew the system made sense,” he continued. “But it really hit home when it was 20°F outside and we were able to spray inside – with no mechanicals up and running. One heater was able to condition both the second and third floors – about 28,000 ft².”

The inaugural project also introduced the spray foam contractor to a new approach: spraying inside.

When properly applied, STYROFOAM™ Brand Spray Polyurethane Foam (SPF) (CM Series) sprayed on the interior of the THERMAX™ (ci) Exterior Insulation in the stud cavity effectively fills gaps, cracks and penetrations, for exceptional

moisture management and elimination of air infiltration in the wall. The closed-cell spray foam also provides additional insulation.

“We have used rigid foam insulation from Dow on our projects for years, and we’re pleased they’ve moved into the spray foam arena,” said Dan Murphy, president, Metal Arts Construction and MAG Insulation. “The Dow name gives us confidence that we’ll get a quality product with the technical support you don’t have with many other SPF manufacturers. The THERMAX™ Total Wall System will reduce insurance claims from the inherent overspray issues we have whenever SPF is applied outdoors to the exterior surface of a wall or roof assembly.”

MAG project manager Brian Anderson agreed. “We want to spray all year, not just four or five months,” he said. “And we don’t want to keep changing materials. In addition, safety-related issues, such as working at extended heights from multiple scaffolding levels or lifts, can be eliminated by moving the spray foam application to the building interior.”

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DAN MURPHY, PRESIDENT  
MAG INSULATION  
MOUNT PLEASANT, MICH.

**Spray foam contractors can make every job an inside job with the THERMAX™ Total Wall System.**

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**A BETTER BUILDING-SCIENCE APPROACH TO WALL CONSTRUCTION.**

The three-in-one THERMAX™ Total Wall System enables an energy-efficient, moisture-managed wall with fewer materials and fewer installation steps.

#### PROJECT SNAPSHOT

735 Forest: 35,000 ft<sup>2</sup> new construction

**Completion:** Summer of 2008

**Architect:** Victor Saroki & Associates Architects PC

**General Contractor and Owner:** Mosher, Dolan, Cataldo & Kelly Commercial

**Carpentry/Drywall:** Dun-Rite Finish Systems, Inc.

**SPF Contractor:** MAG Insulation

#### Dow Products Used:

Wall Assembly: THERMAX™ (ci) Exterior Insulation (15,000 board feet); WEATHERMATE™ Flashings; STYROFOAM™ Brand SPF (CM Series)

Roof Insulation: STYROFOAM™ Brand DECKMATE™ Plus Insulation (4" thick)

Other: STYROFOAM™ Brand CAVITYMATE™ Ultra Insulation on stairwells

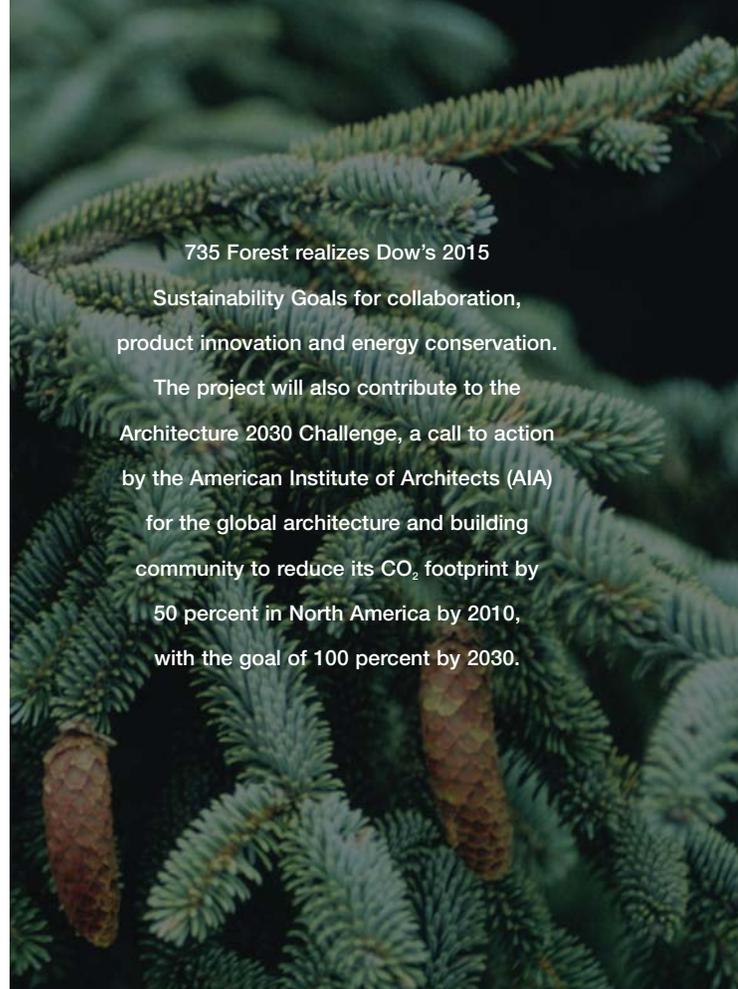
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DESIGN MORE RESPONSIBLE BUILDINGS.

## PLANTING A FOREST FOR THE TREES

Tree-lined streets and pocket parks are in the plans for 735 Forest and its surroundings, enhancing the area's appeal to residents and visitors alike. Saroki and Mosher, Dolan, Cataldo & Kelly Commercial principals credit Dow with contributing to the sustainability objectives of 735 Forest, and helping the project to achieve USGBC LEED certification (and a Gold rating).

"The THERMAX™ Total Wall System helped our project earn significant LEED credits," said Marszalek. "More important, we're projecting 30 percent to 40 percent energy savings in the first year over the original design." Kelly agreed. "For Mosher, Dolan, Cataldo & Kelly, reducing energy use in our buildings is about reducing the carbon footprint – it's also caring about the footprint we leave."



735 Forest realizes Dow's 2015

Sustainability Goals for collaboration, product innovation and energy conservation.

The project will also contribute to the Architecture 2030 Challenge, a call to action by the American Institute of Architects (AIA) for the global architecture and building community to reduce its CO<sub>2</sub> footprint by 50 percent in North America by 2010, with the goal of 100 percent by 2030.

"Reducing energy use in our buildings is about reducing the carbon footprint – it's also caring about the footprint we leave."

JOHN KELLY, PRINCIPAL  
MOSHER, DOLAN, CATALDO & KELLY  
BIRMINGHAM, MICH.

Take a different approach with the THERMAX™ Total Wall System.  
Learn more at [www.thermaxtotalwall.com](http://www.thermaxtotalwall.com)

For Technical Information: 1-866-583-BLUE (2583) . For Sales Information: 1-800-232-2436  
THE DOW CHEMICAL COMPANY . Dow Building Solutions . 200 Larkin . Midland, MI 48674 . [www.thermaxtotalwall.com](http://www.thermaxtotalwall.com)

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THERMAX™ products should be used only in strict accordance with product application instructions. THERMAX™ products, when used in a building containing combustible materials, may contribute to the spread of fire. For more information, consult MSDS and/or call Dow at 1-866-583-BLUE (2583). In an emergency, call 1-989-636-4400.

**WARNING: Rigid foam insulation does not constitute a working walkable surface or qualify as a fall protection product.**

STYROFOAM™ Brand Spray Polyurethane Foam contains isocyanate, hydrofluorocarbon blowing agent and polyol. Read the instructions and Material Safety Data Sheet carefully before use. Wear protective clothing, gloves, goggles and proper respiratory protection. Supplied air or an approved air-purifying respirator equipped with an organic vapor sorbent and a particle filter is required to maintain exposure levels below ACGIH, OSHA, WEEL or other applicable limits. Provide adequate ventilation. Contents under pressure. STYROFOAM™ Brand SPF should be installed by a trained SPF applicator.

Building and/or construction practices unrelated to building materials could greatly affect moisture and the potential for mold formation. No material supplier including Dow can give assurance that mold will not develop in any specific system.

