

# PRECAST

**MAPA**  
Mid-Atlantic Precast Association

# Press

Summer, 2005

## Virtual Tour

The MAPA website has had a make-over to allow for easier navigation. In addition to standard details, member listings, FAQ's and technical articles, the newest feature is the MAPA "virtual tour". While you might not have the time to walk through the mid-Atlantic states to explore the many and varied types of precast concrete structures-- the MAPA virtual tour allows you to explore new projects and old favorites as well as the variety of architecture that comprises our region.

The MAPA Virtual Tour visually represents hundreds of projects throughout the region. Each of the "dots" represents a case study or project profile of a precast/prestressed concrete building in the states of New York, New Jersey, Pennsylvania, Delaware,

Maryland, Virginia and the District of Columbia. You can search by building type - for example, parking structures or office buildings. You can search by state. Simply click on a dot for an executive summary or double click for the entire story and additional images. Metro area maps can be enlarged to accommodate the large number of precast projects.

We also welcome your submissions as we continue to add to the vast collection of precast concrete contributions to our infrastructure. We have added a feature on our home page to allow you to suggest projects that would make a welcome addition to our virtual precast world. go to [www.mapaprecast.org](http://www.mapaprecast.org)

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ARCHITECTURAL PRECAST | HOLLOWCORE | PARKING STRUCTURES | SPORTS FACILITIES | WALL PANELS | TOTAL BUILDING SYSTEMS

Welcome to the Mid-Atlantic Precast Association

**"Overall ease of construction plus cost savings over other building materials were big factors in our choice to use precast."**

**Tom Tabor**  
Senior Vice President & CIO  
Highmark Inc.

READ THE FULL STORY

**SUBMIT YOUR PROJECT**

Would you like to see your project featured on MAPA's Precast Virtual Tour? Contact MAPA by clicking below.

GET STARTED

Precast Virtual Tour  
select a state to begin

VA MD PA NJ NY DE

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[www.mapaprecast.org](http://www.mapaprecast.org) has had a makeover. To access the virtual tour, simply click on a state to see all the featured precast/prestressed concrete projects within that geographic area.

## Quotables

- *“Never be afraid to ask a question, especially of yourself. Discovery is the mission of life.”*  
—Brian Kates
- *“Success is a little like wrestling a gorilla. You don’t quit when you’re tired — you quit when the gorilla is tired.”* —Robert Strauss
- *“The first requisite of a good citizen in this republic of ours is that he shall be able and willing to pull his weight.”* —Theodore Roosevelt

## Industry News

Congratulations to Frank Morabito, Morabito Consultants, Baltimore, MD. Frank’s name was selected at random in a drawing for an iPod. He was among those eligible through his participation in the MAPA industry marketing survey.

MAPA producer and affiliate members can be found on the MAPA web site: [www.mapaprecast.org](http://www.mapaprecast.org)

## Director’s Chair



*Monica Schultes, Executive Director MAPA*

From metropolitan New York through southern Virginia developers are pouring big dollars into new projects, and the construction industry is capitalizing on the boom. The region’s robust economy can be seen from the new Comcast Center in Philadelphia, which will soon join the ranks as one of the tallest buildings in the nation to the News-eum/ Freedom Forum in Washington, DC.

The volume of construction in many segments has heated up- buildings are going up at an incredible pace, tower cranes loom over all the major cities in the region. Some segments are hotter than others, the health care market is booming- with regional projections of a 25% increase in new construction over last year.

However, the boom also puts us in a bind. Construction managers, owners and designers are often frustrated by long lead times and the concern of availability of precast/prestressed concrete for their projects. While it is true that many MAPA producers have strong backlogs into 2006, the industry is not “sold out”. MAPA members continue to serve the needs of the market place - economically. Teaming with a precaster in a design-build project may ensure the commitment of future capacity reserved especially for your project.

While backlogs have increased, so have the costs of raw materials. We are all aware of skyrocketing fuel costs. When combined with the tight supply of ships, rail cars and trucks, the result is a rise in delivery costs. PCA forecasts a 3% increase in portland cement consumption in 2005. The price of cement has increased as has crushed stone and steel. After last year’s strong increases in steel prices - they remain there. Re-bar prices are more than 35% above what they were in January 2004.

In this market it doesn’t make sense to take the risk of waiting until bid day to communicate with a precaster. Negotiating with a MAPA producer early in the game will allow you to achieve a price and schedule that makes sense for the team and the precaster can more fully maximize the capacity of their facility.

## Case in Point: Ramapo College

The Overlook residence hall at Ramapo College of New Jersey looks more like a luxury apartment building than a housing facility for 300 students of this highly rated liberal arts college. Eight stories of precast concrete and glass stand against the New Jersey sky, towering trees and huge ancient boulders deposited eons ago by the last ice age. The building, an interlocking design of alternating flat and fluted precast panels with punched windows and a glass curtain wall is designed to complement the surrounding natural area and take advantage of the picturesque hillside vantage point.

According to Richard Roberts, Associate Vice President and Contracting Officer, the college's pre-construction task force considered other options during the planning of the facility. Precast was chosen over steel or masonry for a number of reasons. "The designers felt precast could achieve an aesthetically pleasing design that would blend with our surroundings," says Roberts. Besides considerable cost advantages, the superstructure was scheduled to be erected in midwinter. The thought of laying block during New Jersey's bitter, January cold was unsettling and construction delays would have meant costly alternative housing and transportation expenses for the incoming freshman and returning upperclassmen. After meeting with the architect, examining precast samples and visiting a nearby structure, the benefits and the ability of precast to conform to the college's needs won over the committee. The decision to use precast concrete kept the project on schedule and on budget.

On the exterior along the northern facade, precast insulated (sandwich) panels with punched windows provide additional energy efficiency. The combination of an east-west exposure and the use of sunshades will reduce the cost of heating and cooling the building.

Normally, the beauty of precast concrete is most evident on a building's exterior. In the case of the Overlook, the designers and architects incorporated the precast components into the actual design and decor of the interior as well. The lobby is a modern mix of contrasting surfaces- the solidity and strength of exposed precast concrete walls, columns and beams along side the transparency and frailty of a large glass exposure. Hollowcore planks are exposed in ceilings and massive precast beams are visible throughout. The precast interior walls with their form finish are part of the random color and texture evident everywhere. Hall rooms mix bold colors of carpet, painted walls and walls with exposed precast concrete. At the end of each hall is a glass and

precast concrete lounge area that provides a dramatic view of the Ramapo Mountains and Kameron Pond.

Even though the original 18-month construction schedule was already tight, the team still finished in time for students to move in by Labor Day, 2004. The precast experience with The Overlook dormitory was so successful at Ramapo College of New Jersey, that Roberts says another even larger student housing facility with a precast parking structure is planned for 2006 to accommodate the burgeoning enrollment of on-campus students.

### Project Team

Owner: Ramapo College of New Jersey

GC: Century 21 Construction

Architect: Paulus Sokolowski and Sartor Architecture, Warren, NJ

Precaster: Fabcon Corporation, Allentown, PA / Architectural Precast, LLC, Middleburg, PA



*Richard Roberts, Associate Vice President Ramapo College*

# Energy Conservation

Americans spend almost 90% of their time in buildings. More than 2/3rds of the electricity generated is used to heat, cool and operate buildings. Significant energy could be saved if buildings were built to or exceed minimum national energy code standards. Saving energy will result in fewer power plants and natural resources being used to provide electricity and natural gas. It also means fewer emissions to the atmosphere.

The construction of an energy-conserving or sustainable building requires the architect's understanding of the effects of design decisions on energy performance. More than half of the true total costs incurred during the economic life of a building may be attributed to operating and energy costs. An integrated design approach considers how the walls interact with the building and its HVAC system. Using this approach early in the design approach is recommended for cost-effective, energy efficient, sustainable buildings.

Precast concrete walls have many built-in advantages when it comes to saving energy and protecting the building from the environment. Their versatility leads to unique solutions for many energy conservation problems. The importance of

particular design strategies for any project depends largely on its geographic location.

Several factors influence the actual energy performance of the building envelope. Some of these are recognized in energy codes and sustainability



programs because they are relatively easy to quantify. Others are more complex and are left to the discretion of the designer.

**Building orientation:** if possible the long axis of the building should be oriented in the east-west direction to help control the effect of the sun on heating and cooling loads.

**Building shape:** influences energy performance in two ways. First, it determines the surface area of the skin. The larger the skin area, the greater the heat gain in summer or loss in winter. Second, shape influences how much of the floor area can be illuminated using natural light. The old "E" and "H" shaped buildings were designed to provide maximum exposure of occupants to operable windows and had the added benefit of providing optimal daylighting.

**Glazing:** the type, amount and orientation of glazing will profoundly affect heating, cooling and daylighting requirements, HVAC system selection, human comfort, and environmental satisfaction.

**Color:** or albedo of precast concrete panels can be used to improve the energy conserving features of the walls. Panels lighter in color (high albedo) decrease solar heat gain. However, color of exterior walls has less effect on energy consumption when they have high R-values and thermal mass.

**Wind:** can decrease the exterior still-air film that usually surrounds a building and contributes to the insulating R-values of wall elements, thus increasing heating and cooling loads. This effect is most predominant in un-insulated concrete walls and less marked as the R-value and thermal mass increase. High winds create pressure differences across walls which will increase air leakage through the walls. Planting non-deciduous trees on the windward side of buildings decreases energy losses in winter.



## Producer Members

○ **Architectural Precast, LLC**  
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○ **Fabcon East Corporation**  
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○ **High Concrete Structures, Inc.**  
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○ **Schuylkill Products, Inc.**  
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○ **Tindall Corporation (VA)**  
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[www.tindallcorp.com](http://www.tindallcorp.com)

○ **Universal Concrete Products Corp.**  
Dale Groff 610.323.0700  
[www.universalconcrete.com](http://www.universalconcrete.com)

## Issues & Answers: Mold

It's not the heat, it's the humidity. Most of us don't relish the soggy summer weather we are currently experiencing in the mid-Atlantic region, but there is one creature who thrives in this environment: mold.

Mold has clogged our court system with more than \$300 million dollars per year in litigation, as well as a 300% increase each year in the nationwide number of lawsuits filed. What drives this hidden monster that makes this it such a hot topic in the construction industry?

The proper design of building envelopes with the correct construction material is a key way to reduce the presence and potential damage from mold. Water intrusion is the main culprit in activating the mold spores that are all around us. (Constructor Magazine, May, 2003)

There is no way to eliminate moisture or mold in 100% of all cases. Mold can grow in wood, carpet, food or any organic material. Treatment of these materials with chemicals, may reduce, but will not totally eliminate moisture development. However, careful attention to the building envelope and choice of materials can reduce the success of mold growth because moisture is reduced or eliminated.

"Every building either has or will have the oxygen and organic matter that these spores need to grow. The only variable is water." (Mold litigation task force of the general contractors of America, march 2003) Maintaining relative humidity between 30-60% will help control mold.

Precast concrete is produced in a controlled and protected environment, so that the process resists moisture intrusion. Precast concrete systems allow for faster enclosure of the building envelope and provide the best environment to control moisture and humidity over a shorter time period. Unless properly designed and constructed, the building site itself will permit excessive moisture in either surface, underground water, outside humid air, or rain in openings like doors, windows, ventilation ducts or shafts that pull outside air into the buildings. Storms, mechanical or other systems including vapor barriers can cause water to condense in different locations.



*Precast wall panels can be easily cleaned to rid surface of mold.*

Precast concrete systems allow for the controlled installation of HVAC systems, one of the more common entrance paths for mold formation and subsequent respiratory distress. Microscopic mold spores have a natural tendency to hang or float in the air. Indeed, they are as ambient as the moisture on a humid day. So, that during the "exposed" phase of the construction process, they can easily come to rest on building materials and components, whether installed or simply stored. Add water from any natural or other source, and theoretically the spores can begin to grow.

Precast concrete resists three conditions that promote mold growth as stated in ASTM E241-00 (Guide for Limiting Water-Induced Damage to Buildings).

- 1) Organic food sources in construction materials
- 2) Uncontrolled ambient temperatures and ventilation control
- 3) High moisture levels

Mold must be cleaned from the environment in construction wood and paper otherwise it forms a veritable "petri dish" for growth. Mold can gain a foothold fast, and unlike concrete -- wood or fiberboard must be completely torn out with any insulation material to rid the structure of mold. Precast can be easily cleaned by pressure washing, to rid the surface of food sources.

Precast concrete construction supports the maxim to "prevent or inhibit" mold formation, rather than attempt remediation of fungi in indoor environments. For more information on mold resistance and precast concrete wall systems, contact MAPA at [www.mapaprecast.org](http://www.mapaprecast.org) or 800-453-4447.



Mid-Atlantic Precast Association

*a quarter century **25** of precast prowess*

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